Course Title: **Measurement and Evaluation in Education**

Course No.: Ed. 531 Nature of course: Theoretical

Level: M. Ed. Credit Hours: 3

Semester: Third Teaching Hours: 48

**1. Course Description**

This is a professional core course designed for the Master's Degree in Education. This course deals with the nature of educational measurement and evaluation along with reliability and validity of a test, standardization of a test, measuring complex achievement, and intelligence and standardized achievement tests. The course aims to enable the students in designing standardized tests.

**2. General Objectives of the course**

The general objectives of this course are as follows:

* To introduce the students with different concepts and the general problems and current trends in educational measurement.
* To acquaint the students with major considerations in validation and factors influencing validity.
* To help students develop skills in estimating reliability and interpreting validity and reality coefficient.
* To equip the students with skills in measuring students' achievement.
* To provide the students with skills in constructing standardized test.
* To acquaint the students with selected intelligence tests and standardized achievement test.

**3. Specific Objectives and Contents**

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| **Specific Objectives** | **Contents** |
| * Show relationship among test, measurement and evaluation. * Differentiate between psychological and physical measurement. * Explain the various scales of measurement. * Explain the problems of measurement. * Explain the current trends in educational measurement. * Differentiate between norm reference test and criterion reference test. * Explain the relationship between evaluation and the instructional process. | **Unit I : Educational Measurement and Evaluation**   **(8)**   * 1. Overview of test, measurement and evaluation   2. Types of measurement      1. Psychological measurement      2. Physical measurement   3. Scales of measurement – nominal scale, ordinal scales, equal interval scale and ratio scales   4. General problems of measurement   5. Current trends in educational measurement      1. 'High stakes' testing      2. Performance and portfolio assessment      3. Technological advances in testing      4. National assessment of students' achievement   6. Norm reference test vs. criterion reference test   7. Relationship between evaluation and instruction. |
| * Explain the major considerations in validation. * Interpret validity coefficients. * Explain the factors influencing validity. * Compute reliability using various methods. * Explain the factors influencing reliability and interpretation of reliability coefficient. . * Show relationship between reliability and validity. * Explain the concept and use of standard error of measurement. * Compute standard error of measurement. | **Unit 2 Validity and Reliability of a Test (10)**  2.1 Overview of validity   * 1. Major considerations in Validation   2.2.1 Content consideration  2.2.2 Construct validation  2.2.3 Test-criterion relationship  2.2.4 Consideration of consequences  2.3 Interpreting validity coefficients  2.4 Factors influencing validity  2.5 Overview of reliability  2.6 Methods of estimating reliability with computation  2.6.1 Test retest method  2.6.2 Equivalent forms method  2.6.3 Split half method  2.6.4 Kuder-Richardson method  2.6.5 Interrater consistency   * 1. Interpreting reliability coefficients   2. Factors influencing reliability measures   3. Relationship between reliability and validity   4. Standard error of measurement      1. Concept      2. Use of standard error of measurement      3. Computing Standard error of measurement |
| * Explain the concept of interpretive exercise. * Construct the various forms of interpretive exercises. * Explain the advantages and limitations of interpretive exercise. * Construct the various forms of essay questions. * Explain the advantages and limitations of essay questions. * Prepare scoring criteria for essay questions. * Suggest ways of improving scoring essay questions. * Construct the various types of performance assessment * Explain the advantages and limitations of performance assessment. * Describe the guidelines for developing portfolios. * Explain the strengths and weaknesses of portfolios. * Explain the functions and types of grading and reporting. * Suggest letter grading system for the course. | **Unit 3 : Measuring Achievement (10)**   * 1. Measuring complex achievement: Interpretive exercises      1. Concept of interpretive exercises      2. Forms and uses      3. Advantages and limitations   2. Essay questions      1. Forms and uses of essay questions      2. Suggestions for writing essay questions      3. Advantages and limitations of essay questions      4. Essay scoring criteria      5. Suggestions for scoring essay questions   3. Performance-based assessment      1. Concept      2. Types of performance assessment      3. Advantages and limitations of performance assessment      4. Suggestions for constructing performance tasks   4. Portfolios      1. Concept and purposes of portfolios      2. Guidelines for developing portfolio      3. Strength and weakness of portfolio assessment   5. Grading and reporting      1. Formal and informal evaluation      2. Functions of grading and reporting systems      3. Types of grading and reporting systems      4. Multiple grading and reporting systems      5. Assigning letter grades      6. Conducting parent-teacher conference |
| * Explain the concept and uses of standardized test. * Explain the characteristics of standardized test. * Plan for preparing the standardized test. * Prepare the preliminary format of the test. * Compute item analysis. * Prepare final form of the test. * Administer the final form of the test and determine reliability and validity of the test. * Prepare norms. * Prepare test manual. | **Unit 4 : Standardization of a Test (8**)   * 1. Concept and uses of standardized test   2. Characteristics of standardized test   3. Planning the Standardized test   4. Preparing the preliminary format   5. Tryout of the test   6. Item Analysis      1. Item difficulty index and discrimination index      2. Distracter analysis      3. Using item analysis for improving test items   7. Preparing the final form of the test   8. Administration of the final form of test      1. Determining validity      2. Determining reliability      3. Norms – raw scores, age norms, grade norm, percentile norms and standard scores.   9. Preparation of test manual |
| * Define the term intelligence. * Explain some facts about intelligence. * Explain the concept and uses of intelligence tests. * Differentiate between individual and group intelligence test. * Explain briefly the early editions of SB intelligence scale. * Explain the characteristics and psychometric properties of modern SB scale 5th edition. * Explain the general features of Wechsler tests. * Explain the various subtests of Wechsler test. * Explain briefly the WAIS III and WISC IV. * Explain the concept and uses of standardized achievement test. * Explain briefly the Stanford Achievement Test. | **Unit 5 : Intelligence and Standardized Achievement Test (12)**   * 1. Concept of intelligence   2. Facts about intelligence      1. Intelligence and age      2. Intelligence quotient      3. Intelligence and sex differences      4. Heredity and intelligence   3. Intelligence Tests      1. Concept and uses of intelligence tests      2. Types of intelligence test – individual and group test      3. Brief review of early editions Stanford-Binet (SB) tests      4. Characteristics and psychometric properties of SB test 2003 fifth edition.      5. General features and subtests of Wechsler Adult Intelligence Scale III and Wechsler Intelligence scale for Children IV   4. Standardized Achievement test      1. Concept and uses of standardized achievement test.      2. Brief review of Stanford Achievement Test (SAT) |

***Note:*** *The figures in the parenthesis indicate the approximate teaching hours for the respective units.*

**4. Instructional Techniques**

**4.1 General Techniques**

* Lecture with discussion
* Demonstration
* Home assignment and self study

**4.2 Specific Instructional Techniques**

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| **Unit** | **Activity and Instructional Techniques** |
| II | Computation of reliability using various methods and interpreting reliability coefficient.  Computation of standard error of measurement. |
| IV | Preparation of specification chart for test preparation, construction of test items, administration and practice on item analysis, and determining reliability, validity and norms |
| V | Assignment on paper writing on intelligence tests and achievement tests and classroom presentation |

**5. Evaluation**

**5.1 Internal Evaluation 40%**

Internal Evaluation will be conducted by course teacher based on following activities.

1. Attendance and participation 5 points
2. Participation in learning activities 5 points
3. First assignment/book review/written assignment/quizzes 10 points
4. Second assignment/paper writing and presentation 10 points
5. Third assessment/ written test (1 or two) 10 points

Total 40 points

**5.2 External Evaluation (Final Examination) 60%**

The types and number of questions to be included in the final paper are as follows:

1) Objective type question (Multiple choice 10x1) 10 points

2) Short answer questions (6 questions x 5 points) 30 points

3) Long answer questions (2 questions x 10 points) 20 points

Total 60 points

**6. Recommended Books**

Gregory, R. J. (2005). *Psychological testing : History, principles, and applications* (4th ed.) Delhi : Pearson Education Pte. Ltd. (For unit 5)

Kubiszyn, T., & Borich, G. (2004). *Educational testing and measurement: Classroom application and practice* (7th ed.). India : John Wiley & Sons, Inc. (For units 1, 2 and 4)

Linn, R. L. & Gronlund, N. E. (2003), *Measurement and assessment in teaching* (8th ed.) Delhi : Pearson Education. (For units 1, 2, 3 and 4)

Reynolds, C. R. et.al. (2009). Measurement and assessment in education (2nd ed.) New Delhi: PHI learning Pvt. Ltd. (For unit 1, 2, 3, and 4)

Sharma, R. A. (2004). *Essentials of measurement in education and psychology.* Meerut : R. Lall Book Depot. (For unit 1, 2 and 5)

Sidhu, K. S. (2005). *New approaches to measurement and evaluation*. New Delhi : Sterling Publishers Pvt. Ltd. (For unit 1and 4)

1. **Reference Book**

Ebel,, R. L. & Frisbie, D. A. (1991). *Essentials of educational measurement* (5th ed.). New Delhi : Prentice-Hall of India Pvt. Ltd.

Patel, R. N. (2005), *Educational evaluation theory and Practice* (6th ed.) Mumbai : Himalaya Publishing House Pvt., Ltd.

Singh, A. K. (1997). *Tests, measurements, and research methods in behavioural Sciences* (2nd ed.) Patna : Bharati Bhawan Publishers and Distributors.

Swain, S. K., Pradhan, C., & Khatoi, P. K. (2005). *Educational measurement statistics and guidance* (2nd ed.) New Delhi : Kalyani Publishers.

Course Title: **Research Methodology in Education** Nature of course: Theoretical Course No: Ed. 532 Credit Hours: 3

Level: M.Ed. Teaching Hours: 48

Semester: Third

1. **Course Description**

This course is designed to provide the students with the basic concepts, knowledge and skills of research methodology. It intends to make students familiar with different types of research methods and enrich them with an in-depth understanding of quantitative as well as qualitative research designs, sampling techniques, preparation and validation of data/information tools, data/information analysis procedures, and ethical considerations related to these designs. The course also focuses on the study and application of descriptive and inferential statistics in research. Further, it will help students develop in-depth knowledge and skills required for developing proposal and conducting research using quantitative, qualitative and mixed methods approach, and writing research report.

1. **General Objectives**

The general objectives of this course are as follows:

* To make the students familiar with the basic concepts of research ,
* To acquaint the students with quantitative and qualitative research designs,
* To prepare the students to use statistical tools in quantitative data analysis and use thematic and narrative analysis approach in qualitative data analysis
* To enable students in preparing research proposal for different nature of inquiry, and
* To prepare the students to write research report using appropriate methods and approaches.

1. **Specific objectives and contents**

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| **Specific Objectives** | **Contents** |
| * Clarify the meaning and definition of research and educational research * Select and define variables * Explain use of scale of measurement in research * Select, define, analyze and state researchable problems * State objectives, write research questions, and formulate hypothesis * Delimit the problems by explaining the scopes of the study * Write review of related literature, and design theoretical and conceptual framework | **Unit 1: Concept of Research (10)**  1.1 Concept and characteristics of research  1.2 Educational research and its importance  1.3 Variables and scale of measurement in research  1.4 Research Problem  1.5.1 Sources of research problem  1.5.2 Identifying, defining, analyzing and stating research problem  1.5 Research objectives  1.6 Research questions  1.7 Hypotheses  1.8 Limitations and delimitations in research  1.9 Review of related literature  1.9.1 Primary, secondary and online sources of literature  1.9.2 Steps in literature review  1.9.3 Review of Theoretical literature/related concept and theories  1.9.4 Review of Empirical Literature/previous studies  1.11 Theoretical and conceptual framework |
| * State the characteristics of quantitative research * Use appropriate sampling in quantitative research * Develop and validate different types of tools * Design various types of researches * Use different approaches of data analysis in quantitative research * Explain process of quantitative data analysis * Describe process of presenting data/findings on tables, figures and graph * Explain techniques of analysis and interpretation of data * Explain different ethical aspects in quantitative research | **Unit 2: Quantitative Research (20)**  2.1 Concept and characteristics  2.2 Types and steps of quantitative research designs  2.2.1 Survey (cross-sectional and longitudinal)  2.2.2 Ex-post facto  2.3.3 Correlational  2.3.4 Experimental (pre, true, and quasi )  2.3 Sampling in quantitative research  2.3.1 Probability sampling design  2.3.2 Non-probability sampling design  2.4 Construction and validation of research tools/instruments  2.4.1 Questionnaire  2.4.2 Attitude scale  2.4.3 Interview schedule  2.4.4 Check list and  2.4.5 Rating scale  2.5 Quantitative data analysis   * + 1. Concept of quantitative data analysis   2.5.2 Data processing and tabulation  2.5.3 Summarizing and presenting data using tables, figure and graph  2.5.4 Analysis and interpretation of data/finding  2.6 Ethical issues in quantitative research |
| * Differentiate between quantitative and qualitative research * Explain sampling strategies in qualitative research * Design different qualitative research * Describe and use qualitative data collection techniques * Explain qualitative data analysis approach * Illustrate basic steps of qualitative data analysis * Discuss the techniques of maintaining quality and credibility/validity of qualitative data * Describe ethical aspects in qualitative inquiry | **Unit 3: Qualitative Research (8)**  3.1 Concept and characteristics  3.2 Qualitative research designs  3.2.1 Case study  3.2.2 Ethnography  3.2.3 Narrative inquiry  3.2.4 Grounded theory  3.2.5 Phenomenology  3.3 Sampling strategy in qualitative research  3.4 Collection and analysis of qualitative data  3.4.1 Techniques of collecting qualitative data   * In-depth interview * Participant observation * Focus Group Discussion (FGD)   3.4.2 Techniques of maintaining quality and credibility/validity of qualitative data  3.4.3 Qualitative data analysis   * Thematic and narrative approach * Basic steps in analyzing and interpreting qualitative data   3.5 Ethical consideration in qualitative research |
| * Conceptualize and explain characteristics of mixed method research * Discuss different types of mixed method research * Explain steps in conducting mixed method research * Give concepts and characteristics of action research in education * Describe types of action research design with examples * Explain steps in conducting action research | **Unit 4: Mixed Method and Action Research (5)**  4.1 Concept and characteristics of mixed method research  4.2 Types of mixed method research design  4.2.1 Concurrent/convergent design  4.2.3 Sequential design  4.2.3 Embedded design  4.3 Steps in conducting mixed research  4.5 Action research  4.5.1 Concept and characteristics of action research  4.5.2 Types of action research design: practical and participatory  4.5.3 Steps in conducting action research |
| * State the need of proposal and requirements for research report * Explain essential components of research proposal * Develop a research proposal by steps by steps manner in chosen/given problem * Describe essential skills and steps in research report writing * Explain the components of research report/thesis * Use APA format in thesis writing in relation to layout | **Unit 5: Proposal and Report Writing (5)** 5.1 Concept and need of research proposal  5.2 Components of research proposal  5.3 Steps in developing research proposal  5.2 Essential of report writing  5.2.1 Professionalism  5.2.2 In-depth knowledge  5.2.3 Concentration  5.3.4 Writing skill  5.3 Basic skills in report writing (Using APA Style )  5.3.1 Abstract  5.3.2 Content organization and linkage  5.3.2 Citation  5.3.3 Presenting tables and figures  5.3.4 Referencing  5.4 Format and Components of research report/thesis as prepared by FOE, Dean's Office |

**4. Instructional techniques**: Two types of instructional methods are suggested: General and specific

**4.1 General instruction techniques**- Participatory interactive lecture method, discussion, question- answer, brainstorming, etc are suggested.

**4.2 Specific instructional techniques**- The following class tasks/ homework/ project work are suggested to conduct in individually/group:

-To select reasonable researchable problems (Unit-I),

-To define and write appropriately the selected problem (Unit-I),

-To limit/delimit the problem (Unit-I),

-To draw the significance of the selected study (Unit-I),

-To write objectives of the study (Unit-I),

-To review and write reviewed work in paragraph in required format (Unit-I),

- To design research format in accordingly the situation or context of the study (Unit-IV, V),

-To prepare and validate data/information collection tools for specified research (Unit-II, & III),

-To prepare analysis paragraph for dummy data (Unit-II, III, IV, & IV),

-To cite and prepare reference list appropriately using Publication Manual of APA (Unit-V),

-To write research proposal and present it in the classroom under the guidance (Unit-V).

**5. Evaluation**

**5.1 Internal Evaluation 40%**

Internal Evaluation will be conducted by course teacher based on following activities.

1. Attendance 5 points
2. Participation in learning activities 5 points
3. First assignment 10 points
4. Second assignment/mid-term exam 10 points
5. Second assignment/assignment 10 points

Total 40 points

**5.2 External Evaluation (Final Examination) 40%**

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester.

1) Objective type question (Multiple choice 10x1) 10 points

2) Short answer questions ( 6 questions x 5 points) 30 points

3) Long answer questions (2 questions x 10 points) 20 points

Total 60 points

6. **Recommended Books and Reference Materials**

**Recommended Books**

American Psychological Association.(2009). *Publication manual of American Psychological Asssociation*.(6th ed.). Washington, DC: APA. (For unit-V)

Cohen, L., Manion, L., & Morrioson, K., (2010). *Research methods in education*. Noida, India: Sirohi Brothers. (For Units- II, III, IV).

Creswell, John W. (2011). *Educational research: Planning, conducting, and evaluating* *quantitative and qualitative research*. (4th ed.). New Delhi: PHI Learning Pvt. Ltd. (For units- I, II, III, & IV)

Flick, U. (2006). *An introduction to qualitative research* (Third edition). Los Angeles Sage Publication. (For unit III)

Kerlinger, F.N.(1983). *Foundations of behavioral research*. New York: Holt Rinehart and Winston, Inc. U.S.A. (For units- I, & II)

Lodico, M.G., Spaulding, D.T. and Voegtle, K.H. (2006). *Method in educational research: From theory to practice.* San Francisco, USA: Jossey-Bass: (For unit II, III and V)

Mack, N., Woodsong, C., Mac Queen, K. M., Guest, G., & Nancy, E.(2005). *Qualitative research* *methods: A data collector’s field guide*. California: USAID, Family Health International. (For units-II, & III)

Pelton, R.P. (Ed) (2010). *Action research for teacher candidates: Using classroom data to enhance instruction*. Maryland: Association of Teacher Educators. (For unit IV)

Punch, K. (20000. *Developing effective research proposal*. London Sage Publication. (For unit V)

**References**

Best J.W., & Kahn J. V.(2012). *Research in education*. New Delhi: Prentice Hall of India Pvt. Ltd.

Elliott, J. (1991). Action research for educational changes. Buckinggham: Open University Press

Koul, L., (2009). *Methodology of educational research*. New Delhi: Vikash Publishing House Pvt. Ltd.

Denizen, N. K., & Lincoln, Y. S. (Eds.).(2000). *Handbook of qualitative research*. London: Sage Publication.

Hancock, B.(2002). *An introduction to qualitative research*. Nottingham: Trent Focus Group.

Van Dalen, B. & Mayer, W. J.(1966). *Understanding educational research: An introduction.* California, America: Mc Graw-Hill Series in Education.

Course Title: **Classroom Instruction**  Nature of course: Theoretical

Course No.: CE 535 Credit Hours: 3

Level: M. Ed. Teaching Hours: 48 hours

Semester: Third

**1. Course Description**

This course is designed to provide students the conceptual foundations of effective classroom instruction and enabling them with essential pedagogical skills useful to transform classroom instructional practices. This course would enable the students to apply theoretical/conceptual understandings at the classroom level both at creating conducive classroom environment and applying appropriate instructional strategies to maximize students’ learning. In order to craft instructional skills, instructional strategies will be covered in demonstration, practice and feedback modality as far as possible.

**2. General Objectives**

On completion of this course the students will be able to:

* Familiarize the qualities of effective teacher and instructional practices of a good teacher
* Acquaint with the elements of conducive classroom climate
* Develop the knowledge on structuring the lesson
* Enable students to conduct direct instruction in the classroom.
* Provide example and exhibit practice of instructional strategies of
  + individually active and self-directed learning
  + cooperative learning
  + problem solving and critical thinking
  + review and revision
* Demonstrate appropriate use of different instructional strategies across the curriculum

**3. Specific Objectives and Contents**

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| **Specific Objectives** | **Contents** |
| * List down aspects of an effective teacher * Describe psychological characteristics of a good teacher * Exemplify instructional practices of a good teacher * Describe the behaviors that contribute to effective teaching * Cite and analyze research based evidences of effective teacher and effective teaching * Identify different types of learners and cater to differential learning styles | **Unit 1: Effective Teacher and Learner (6 hrs.)**   * 1. Concept of an effective teacher   2. Psychological characteristics of a good teacher   3. Instructional practices of a good teacher   4. Behaviors contributing to effective teaching   5. Key evidence from research on teacher effectiveness   6. Catering different types of learner and learning styles |

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| * Analyze importance of effective classroom organization * Describe different types of seating arrangement * Explain connection of seating arrangement with instructional purposes * Discuss possible alternatives of seating arrangement with respect to Nepalese classroom situations * Describe classroom display and its purposes. * Critically analyze sharing of classroom responsibilities among teacher students and among the students * Describe classroom climate in terms of social and organizational climate | **Unit 2: Establishing Classroom Environment**    **(5 hrs.)**   * 1. Classroom organization   2. Seat arrangement (types, purpose and alternatives)   3. Classroom display (types, organization, purpose, utilization)   4. Shared responsibilities   5. Establishing an effective classroom climate      1. Social environment      2. Organizational environment |
| * Describe the concept of structuring a lesson * Explain and compare different modalities of lesson structuring * Identify and discuss components of lesson for effective classroom delivery * Use advance organizers, establishing set, transition, signpost in lesson conduction | **Unit 3: Structuring Lesson (4 hrs.)**   * 1. Concept of structuring a lesson   2. Antecedent, Behavior, Consequences (ABC)   3. Anticipation, Building knowledge, Consolidation (ABC)   4. Quality of Instruction, Appropriate Levels of Instruction, Incentive and Time (QAIT)   5. Gaining attention, Informing objectives, Stimulating entry behavior, Presenting content, Eliciting behavior, Providing feedback, Assessing outcome   6. Advance organizers, establishing set, transition, signpost |
| * Describe concept and uses of direct instruction * Describe the process/procedures of selected strategies in lesson preparation and delivery * Practice sample lessons | **Unit 4: Direct Instruction (5 hrs.)**  4.1 Concept of direct instruction  4.2 Uses of direction instruction  4.3 Direct instructional strategies  4.3.1 Daily review and checking  4.3.2 Presenting and structuring  4.3.3 Guided student practice  4.3.4 Feedback and correctives  4.3.5 Independent practice  4.3.6 Reviews |
| * Describe concept of individually active and self-directed learning * List down selected instructional strategies of individual active and self directed learning. * Describe process/steps/procedures of selected strategies in lesson preparation and delivery * Prepare model lessons * Practice sample lessons | **Unit 5: Individual Active and Self-directed Learning**  **(9 hrs.)**   * 1. Overview   2. Strategies (Brainstorming, Think Pair Share, Directed Reading Activity, Prediction from Terms, Direct Listening Thinking Activity, Text Coding, Know Want to Learn Know – KWL, What So what Now what, Verbalized Learning, Learning Stations, Process-based Instruction, Project-based Learning)   3. Conducting lesson |
| * Describe concept of cooperative learning * List down selected types of instructional strategies * Describe process/steps/procedures of selected strategies in lesson preparation and delivery * Prepare model lessons * Practice sample lessons | **Unit 6: Cooperative Learning (8 hrs.)**   * 1. Concept of cooperative learning   2. Strategies (Paired Reading Paired Summarizing, Reciprocal Teaching, Read Summarize Question, Jigsaw, One Stay Others Stray, Mix Freeze Pair, Pens in the Middle, Pyramid Learning, Paragraph Expert, Student Teams-Achievement Division - STAD)   3. Conducting lesson |
| * Describe concept of problem solving and critical thinking based learning * List down selected types of instructional strategies * Describe process/steps/procedures of selected strategies in lesson preparation and delivery * Prepare model lessons * Practice sample lessons | **Unit 7: Problem Solving and Critical Thinking**  **(7 hrs.)**   * 1. Concept of problem solving and critical thinking   2. Strategies (Identify Define Explore Act Look - IDEAL, Roots and Wings, Defining Understanding Planning Evaluating – DUPE, I-Search, Socratic Questioning, Reading Against)   3. Conducting lesson |
| * Describe concept of review and revision in the classroom instruction * List down selected types of strategies * Describe process/steps/procedures of selected strategies in lesson preparation and delivery * Prepare model lessons * Practice sample lessons | **Unit 8: Strategies for Review and Revision**  **(5 hrs.)**   * 1. Overview   2. Strategies (Question Answer pair, Classify Categorize Organize, Relay, Guess Who?, Two Truths and A Lie)   3. Conducting lesson |

*Note: The figures in the parenthesis indicate the approximate teaching hours for the respective units.*

**4. Instructional Techniques**

**4.1 General Techniques**

* Lecture with discussion
* Demonstration of strategies by planning lesson and using them in the classroom
* Student planning and presentation/micro practice
* Sharing, review and discussion in the group and whole class on the practice of strategies
* Home assignment and self study

**4.2 Specific Instructional Techniques**

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| **Unit** | **Activity and Instructional Techniques** |
| Units 1-3 | * Direct instruction strategy, DRA, Reciprocal, KWL, RSQ, IDEAL, Socratic Questioning, etc. can be used while delivering units 1, 2 and 3. If this is done from the beginning, it will be helpful to the students to understand the steps of strategies as well as it will smooth transition to units 4-8. |
| Units 4-8 | * At least some of the strategies from the list in units 4-8 should be covered through demonstration, practice and feedback modality. Proper understanding and practice of some of the instructional strategies will be helpful to understand and implement in the classroom. * Students should be encouraged to prepare required instructional materials in the lesson and practice classroom display, seating arrangement and so on in their classroom delivery practices. |

**5. Evaluation**

**5.1 Internal Evaluation 40%**

Internal Evaluation will be conducted by course teacher based on following activities.

1. Attendance and participation 10 points
2. First assignment/ written assignment/quizzes/

Student plan and presentation 10 points

1. Second assignment/student plan and micro presentation 10 points
2. Third assessment/ written test (1 or two) 10 points

Total 40 points

**5.2 External Evaluation (Final Examination) 60%**

Examination Division , office of the Dean, Faculty of Education will conduct final examination at the end of semester.

1) Objective type question (Multiple choice 10x1) 10 points

2) Short answer questions (6 questions x 5 points) 30 points

3) Long answer questions (2 questions x 10 points) 20 points

Total 60 points

1. **Recommended Books and References**

**Recommended Books**

Arends, R. I. (2013). *Learning to Teach (8th edition).* New York: McGraw – Hill International Edition. (Units 1, 2, 3, 4, 6, 7, 8)

Ashman, A. F. and Conway, R. N. F. (1997). *An Introduction to Cognitive Education: Theory and Application.* New York: McGraw – Hill International Edition. (Units 3, 5, 6, 7)

Borich, G. D. (2012). *Effective Teaching Methods.* New Delhi: Pearson. (Units 1, 2, 3, 4, 6, 7)

Crawford, A; Saul, EW; Mathews, S; and Makinster, J. (2005). *Teaching and Learning Strategies for the Thinking Classroom.* New York: Open Society Institute. (Also available in Nepali translation). (Units 2, 3, 5, 6, 7, 8)

Elliott, S. N., Kratochwill, T. R., Cook, J. L. and Travers, J. F. (2000). *Educational Psychology: effective teaching, effective learning.* New York: McGraw – Hill. (Units 1, 2, 3, 5, 6, 7)

Udvari-Solner, A. and Kluth, P. (2008). *Joyful Learning – Active and Collaborative Learning in Inclusive Classrooms.* California: Corwin Press. (Units 2, 6, 8)

**References**

Cotton, J. (2004). *The Complete Guide to Learning and Assessment: Learning Vol. 2.* New Delhi: Crest Publishing House.

DOE. (2010). *Framework of Child Friendly School for Quality Education.* Sanothimi: Author.

DOE/SC. (2005). *Child-friendly Schooling Teachers' Training Manual, 2062.* Kathmandu: Author.

Joyce, B. and Weil, M. (2002). *Models of Teaching (2nd edition).* New Delhi: Prentice-Hall of India Pvt. Ltd.

Pollard, A. (2006). *Reflective Teaching* (2nd Edition)*.* London and New York: Viva-Continuum.

Singh, G. B. (2071 BS). *Active and Thinking Teaching Learning Methods. (In Nepali).* Kathmandu: Jupitar Publications.

UNESCO. (2004). *Changing Teaching Practices.* Paris: UNESCO.

UNICEF. (2003). *Happy Learning! A Guide to Best Practices for Achieving the Potential of Children.* Kathmandu: UNICEF.

Westwood, Peter. (2008). *What teachers need to know about Teaching Methods*. Victoria: Acer Press.

Course Title: **Emerging Perspectives in Curriculum**

Course No.: 536 Nature of course: Theoretical

Level: M. Ed. Credit hours: 3

Semester: Third Teaching hours: 48 hours

**1. Course Description**

This is an elective course designed for students specializing in ‘Curriculum and Evaluation’. The course aims at exposing to develop the skills of critical analysis. Basically the course will deal the curriculum from child right perspective, peace and nonviolence perspectives, sustainable development perspectives, and diversified or differentiated perspectives. This course requires students to search various resources, critically analyze and prepare notes and presentation rather than depends upon prescribed or established content.

**2. General Objectives**

The general objectives of the course are present below:

* To develop student's capacity to justify the needs of examining curriculum from different perspectives.
* To help students explore different dimensions of curricular issues from different perspectives.
* To provide the students with on indepth understanding of child-right based curriculum applicable in Nepalese schools
* To provide the student with knowhow of preparing an outline of curriculum for peace education.
* To help student develop ................. into addressing curricular measures to meet the sustainable developments in curriculum development.
* To enable the student in develop differentiated curriculum based on changing context of the country.

**3. Specific Objectives and Contents**

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| --- | --- |
| **Specific Objectives** | **Contents** |
| * Justify the needs of examining curriculum from different perspectives. * Explore the various perspectives which are influencing curriculum decision making. | Unit 1: Recapitulation of Curriculum Change (8)   * 1. Needs of examining curriculum from different perspective (issues).   2. Various perspectives that influence the curricular decision making in today’s world. |
| * Justify the needs and emergence of right based perspective in curriculum development. * Clarify the concept of right based perspective in education. * Present the existing .................... child right based education. * Draw implication from from right based perspectives on curricular ...................... | Unit 2: Right Based Education (Focusing on child’s rights) (9)   * 1. Concept of right based perspective   2. Need and emergence of child right based perspectives in curriculum development.      1. Issues,      2. Importance,      3. Development   3. Existing practice to address the child-right through curriculum   4. Implications of child right perspective on Curricular decisions(Decisions on   2.4.1 Objectives,  2.4.2 Contents  2.4.3 Methods  2.4.4 Materials  2.4.5 Assessments  2.4.6 School organizational) |
| * Describe the concept of peace education and nonviolence * Explain different approaches to Peace development. * Explain the different approaches to bring peace. * develop culture of peace and non violence * Explore the measures to develop curriculum from peace and nonviolence perspectives. | Unit 3: **Building Peace and Non Violence through Education (9)**  3.1 Concept of peace education?  3.1.1 Martin Luther king's non-violent struggle  3.1.2 Gandhi and nonviolence  3.2. Peace paradigms : Five approaches to peace  3.2.1 Peace through coercive power  3.2.2 Peace through the power of law  3.2.3 Peace through willpower   * + 1. Peace through the power of communication   3.2.5 Peace through the power of love  3.3 The development of culture of peace and non-violence  3.4. Curriculum development from peace building perspectives |
| * Clarify the concept and of sustainable development. * Explain the needs and emergence sustainable development in curriculum development. * Identify the existing practice to address the issues related to sustainable development * Draw curricular implications of sustainable development in terms of learning objectives, contents, methods and assessment and school organization | Unit 4: Sustainable Development (9)   * 1. Concept of sustainable development   4.2 Need and emergence of sustainable development based perspectives in curriculum development.   * + 1. Issues,   4.2.2 Importance,  4.2.3 Development  4.3 Existing practice to address the issues of sustainable development through curriculum  4.4 Implications of sustainable development perspective on curricular decisions (decisions on  4.4.1 Objectives,  4.4.2 Contents  4.4.3 Methods  4.4.4 Materials  4.4.5 Assessments  4.4.6 School organizational) |
| * Explain the concept of differentiated curriculum * Argue on need and emergence of differentiated curriculum. * Explain the forms of differentiated curriculum in relation to inclusive education, multi-grade teaching, local curriculum and Federated curriculum in present context of Nepal. * Explore the curricular implications of differentiated curriculum in terms of learning objectives, contents, methods and assessment. | Unit5 :Differentiated Curriculum (13)   * 1. Concept of differentiated curriculum   5.2 Need and emergence of Differentiated Curriculum  5.2.1 issues  5.2.2 importance  5.2.3 development  5.3 Forms of differentiated curriculum  5.3.1 Inclusive Education  5.3.2 Multigrade Teaching  5.3.3 Local curriculum  5.3.4federated curriculum  5.4 Existing practice to address the differentiated education through curriculum  5.5 Implications of differentiated approaches on curricular decisions(decisions on  5.5.1 Objectives,  5.5.2 Contents  5.5.3 Methods  5.5.4 Materials  5.5.5 Assessments  5.5.6 School organizational) |

*Note: The figures in the parenthesis indicate the approximate teaching hours for the respective units.*

**4. Instructional Techniques**

**4.1 General Instructional Techniques**

* Lecture with discussion ............................. ............................ with projector.
* Demonstration

**4.2 Specific Instructional Techniques**

|  |  |
| --- | --- |
| **Unit** | **Activities and Instructional Techniques** |
| I | * Students will be assigned to search for different emerging issues that prevail in Nepalese society. For this they will be encouraged to use various strategies such as contact with different people, institutions, and study literatures and so on. * They will present issues they found in classroom and will it be followed by discussion on the reasons why these issues became real issues. |
| II | * Students will explore and analyze the different national and international child right declaration and present on how to deal them through curriculum and suggest measures to translate them in classroom practices. * Students will make contact with different concerned stakeholders (institutions, individuals) who will help them to look deeper into the issues and find out possible solution. |
| III | * Students will explore various sources of conflict in Nepalese society and also provide possible solutions to be addressed by the curriculum. For this, the students will be encouraged to make contact with different concerned stakeholders (institutions, individuals) so that they will gain insight into such matters. |
| IV | * Students will be assigned to explore different areas where sustainable development is possible. For this they will make contact with different stakeholders (individuals, institutions, Non-governmental organizations).they will also visit different projects run for sustainable development purposes. * They will present their report in the classroom for further discussions. |
| V | * Students will visit the nearby school to study the development and implementation of various differentiated curriculum (such as multigrade curriculum, local curriculum) there. * They will analyze the curriculum and explore the strength and weakness of such practices. |

**5. Evaluation**

**5.1 Internal Evaluation 40%**

Internal Evaluation will be conducted by course teacher based on following activities.

1. Attendance and participation 5 points
2. First assignment/book review/written assignment/quizzes 10 points
3. Second assignment/paper writing and or presentation 10 points
4. Third assessment/ written test (1 or two) 10 points

Total 40 points

**5.2 External Evaluation (Final Examination) 60%**

Examination Division, Dean’s office, Faculty of Education will conduct final examination at the end of semester.

1) Objective type question (Multiple choice 10x1) 10 points

2) Short answer questions (6 questions x 5 points) 30 points

3) Long answer questions (2 questions x 10 points) 20 points

Total 60 points

**6. Recommended Books and Reference Materials.**

Ball, Jesika(2011) , Enhancing *learning of children from diverse language backgrounds: Mother tongue-based bilingual or multilingual education in early childhood and early primary school years* , UNESCO Paris(Unit 2)

Lafayette Jr,. Bernard and Johnson,   Kathryn Lee   (2008)*The Nonviolence Briefing Booklet*Institute for Human Rights and Responsibilities, Inc. IHRR Publication (Unit 3)

Lafayette Jr,. Bernard and Johnson, Kathryn Lee (2013) *Peace and Freedom*             University Press of Kentucky, Kentucky (Unit 3)

LansdownGerison(2005)*THE EVOLVING CAPACITIES OF THE CHILD* UNICEFInnocenti Research Centre Florence, Italy(Unit 2)

Smith, Tom E., Polloway, James R., and Dowdy, Carol A. ((2011); *Teaching Students with Special Needs in Inclusive Settings(6th edition) .*PHI Learning Private Limited, New Delhi.(Unit 5)

Soubbotina, T. P. (2004). *Beyond economic growth development: an introduction to sustainable development* (2nded.). Washington, D.C.: World Bank. Also available at <http://www.worldbank.org/depweb/english/beyond/beyondco/beg_all.pdf> (Unit 4).

Tomasevski , Katarina, (2004); *Manual on Right based Education, Global Human Rights made simple.* Bangkok, UNESCO (Unit 2)

Treacvhing

UNESCO (2012).*Education for sustainable development* (sourcebook*)*. Paris: UNESCO.Also available at <http://unesdoc.unesco.org/images/0021/002163/216383e.pdf>(Unit 3)

UNESCO(2001)A handbook of Teachers of Multi-grade classes (Volume One.) UNESCO.(Unit 5)

UNICEF.(2007)A Human Rights-Based Approach to EDUCATION FOR ALL: A framework for the realization of children’s right to education and rights within education. UNICEF.New York(Unit 2) .

Westwood, Peter (2003); Common *Sense Methods for Children with special education Need: Strategies for regular Classroom* (4th edition),.Routledge; London & New York.( Unit 5)

Course Title: **Project on Program and Curriculum Evaluation**

Course No.: CE.Ed. 537 Nature of course: Practical

Level: M. Ed. Credit Hours: 3 cr. hrs.

Semester: Third Teaching Hours: 72 (48+24) hours

1. **Course Description**

This is a practical course which aims at providing students with an opportunity to apply their theoretical knowledge in the evaluation of educational programs and curriculum of different levels. In this course, students will be fully engaged in identifying problems and issues related to educational programs and curriculum and in developing study design and tools as well as in collecting and analyzing data and writing report. The students will carry out the project work individually.

1. **General Objective**

The general objectives of this course are:

* explore important and pressing issues and problems relevant to program and or curricular phenomena;
* prepare study proposal in the selected problem or issue;
* conduct field study,
* analyze and interpret collected information; and
* prepare project report.

1. **Specific objectives and content**

|  |  |
| --- | --- |
| **Specific Objectives** | **Contents** |
| * Review the program evaluation and curriculum evaluation report * Identify an appropriate evaluation topic from delineated area | **Unit 1: Selection of evaluation topic (12)**   * 1. Review of program evaluation and curriculum evaluation   2. Review of related studies   3. Delineation of areas relevant to program and/or curriculum evaluation (education programs, needs assessment and or curriculum policies or elements of curriculum, teaching learning process, assessment system to various other variables that have impact on curriculum, students learning)   4. Identification of an appropriate evaluation topic from delineated area |
| * Develop evaluation design * Identify the information or data sources for evaluation * Prepare and finalize the evaluation proposal | **Unit 2:** **Developing proposal for the evaluation (12)**   * 1. Development of evaluation design   2. Selection of evaluation site as per the intent of the topic   3. Identification of information or data sources for evaluation   4. Identification of aspects of evaluation and tools of evaluation   5. Determination of evaluation procedure   6. Determination of time line   7. Submission of the project proposal   8. Finalization of the proposal |
| * Prepare evaluation tools for the study. * Prepare for field work. | **Unit 3: Preparation for field work (8)**   * 1. Preparation of evaluation tools as per the proposal   2. Trying out, improvement and finalization of the tools   3. Determination of date and time for the field work |
| * Conduct field work for evaluation. * Preparing the field report. | **Unit 4:** **Field work (15)**   * 1. Selection of the informants   2. Getting consent from the informants before starting field work   3. Ethical considerations while doing field work   4. Preparation and submitting field report to the supervisor |
| * Organize and analyze qualitative and quantitative information * Interpret the information * Prepare final draft report. | **Unit 5: Organizing, analyzing and report Writing**  **(15)**  5.1 Organizing, analyzing and interpreting qualitative and quantitative information  5.2 Preparation of the draft report  5.3 Preparation of a final draft incorporating instructor's suggestions. (Use APA format for report writing) |
| * Present and defend the draft report * prepare final report after incorporating the suggestions of the seminar | **Unit 6: Dissemination of the Project work (10)**   * 1. Preparation of seminar   2. Presentation of the completed project work in the seminar   3. Preparation of a final report incorporating important suggestions of the seminar. |

1. **Instructional Techniques**

The supervisor or instructor may provide necessary working guidance relevant to each unit/phase for the project.

**Unit 1:**

1. Helping the students to find related literature and encourage them to draw ideas from these literature
2. Presentation of curricular related issues in the classroom and discussion
3. Helping students identify study area and study topic

**Unit 2:**

1. Present a model proposal to the students
2. Helping them to prepare study proposal.
3. Presentation of the proposal in the class
4. Helping them to finalize study proposal.

**Unit 3 and 4:**

1. Provide instruction to students before they set out for field work.
2. Making continuous contact with students during field work and provide necessary suggestions of problems arise during field work.
3. Help verify the field data for report writing
4. Obtain continuous progress report.

**Unit 5:**

1. Provide necessary suggestions for data analysis and interpretation.
2. Discuss approaches to report writing
3. Help prepare and present draft report to the supervisor
4. Make necessary comment and help them to prepare final draft.

**Unit 6:**

1. Provide support in conducting dissemination seminar.
2. Help defend the study report during seminar/dissemination
3. **Evaluation Scheme**

Internal evaluation 40%

External evaluation 60%

**5.1 Internal Evaluation 40%**

Internal Evaluation will be conducted by course teacher based on following activities.

1. Developing proposal for program or curriculum evaluation 6 points
2. Developing and finalization of evaluation tools as per the proposal 6 points
3. Field work 6 points
4. Presentation of completed work in the Seminar and defending 12 points
5. Final Report 10 points

Total 60 points

**5.2 External Evaluation (Final Examination) 60%**

Examination Division, office of the Dean, Faculty of Education will sent external examiner for conducting final viva. The external examiner will evaluate the report and viva on the basis of following criteria

1) Quality of the report 30 points

a. Introduction (8)

b. Tools (8)

c. Organization and analysis of data (8)

d. Overall quality of the report (6)

2) Viva 30 points

a. Summary presentation (8)

b. Knowledge of the subject matter (10)

c. Defending to queries / comments (12)

Total 60 points

1. **References**

American Psychological Association (2010). *Publication Manual of the American Psychological Association* (sixth Edition). Washington, DC: Author

Anderson, L. W. & Postlethwaite, T. N. (2007). *Program evaluation: Large-scale and small-scale studies.* Paris: The International Institute for Educational Planning (IIEP) and Brussels, Belgium: The International Academy of Education (IAE),

Hussain, A. , Dogar, A. H., Azeem, & M., Shakoor, A. (*October 2011).*  Evaluation of curriculum development process.*International Journal of Humanities and Social Science Vol. 1 No. 14*

Lewy, A. (Ed.). (1977)*. Handbook of curriculum evaluation.* Paris: IIEP/UNESCO

*Sanders, J. R., & Sullins, C. D. (2006). Evaluating school programs: an educators guide* (Third edition). California: Corwin press

Wolf, P., Hill & A., Evers, F., (2006). *Handbook for curriculum assessment.* Canada: University of Guelph

Woods, J. D. (1988). "Curriculum Evaluation Models : Practical Applications for Teachers," *Australian Journal of Teacher Education*: Vol. 13: Iss. 1, Article 1. Retrieved from: <http://ro.ecu.edu.au/ajte/vol13/iss1/1>

Course Title: **Application of Statistics in Education**

Course No.: CE.Ed. 538 Nature of course: Theoretical

Level: M. Ed. Credit Hours: 3 cr. hrs.

Semester: Third Teaching Hours: 48 hours

**1. Course description**

This course is designed for those M. Ed. students who specialize in Curriculum and Evaluation. This course aims to enable the students to carry on statistical analysis for the purpose of decision-making and prediction in the field of evaluation and research. Further, this course aims to enable the students to apply the statistical methods in the field of education.

**2. General objectives**

The general objectives of this course are as follows:

* to introduce about the need of research in the field of education.
* to compute parameters for identifying the nature of a population
* to apply normal curve to interpret the nature of a population
* to identify the extent of relationship between two or more interrelated variables
* to predict the future consequences based on analysis of existing trend of relationship.
* To make inferences based on nature of two or more sets of data.

**3. Specific objectives and contents**

|  |  |
| --- | --- |
| **Specific Objectives** | **Contents** |
| * Define statistics * Identify the use of statistics in education and research * Point out the limitation of statistics | **Unit I: Introduction to statistics (4)**   1. Concept of statistics 2. Function of statistics 3. Use of statistics in education and research 4. Limitations of statistics |
| * Give an overview of central tendency, dispersion, and relative position. * Compute mean, median and mode. * Apply mean, median and mode in assessing students performance and in comparing the performance of students. * Compute and apply range, inter quartile range, standard deviation and variance in assessing students’ performance. * State the use and limitations of different measures of dispersion * Compute and interpret percentile rank, percentile and standard score in assessing students’ performance. | **Unit II: Measures of Central Tendency, Dispersion and Relative Position (10)**   1. Overview of central tendency 2. Concept 3. Computation of arithmetic mean, median and mode 4. Application of central tendency in assessing students’ performance 5. Use and limitations of mean, mode, and median 6. Dispersion 7. Concept 8. Computation of range, inter quartile range, standard deviation and variance 9. Application of measures of dispersion in assessing students’ performance 10. Use and limitations of measures of dispersion. 11. Measures of relative position 12. Concept 13. Computation of percentile rank, percentile, stanine, standard score 14. Application of measures of dispersion in assessing students’ performance |
| * Explain the nature of normal curve * Describe skewness and kurtosis as the qualities of a normal curve * Apply normal curve to interpret a set of data | **Unit III: The normal probability curve (5)**   1. The nature of normal probability curve 2. Properties of normal probability curve distribution 3. Measuring divergence from normality 4. Skewness and its application 5. Kurtosis and its application 6. Applications of normal curve in interpreting the data |
| * Clarify the concept of correlation * Describe the use of scatter diagram * Compute different types of correlation. * Apply different types of correlation in education. * Compute partial and multiple correlations. | **Unit IV: Measures of relationship (12)**   1. Concept of correlation as a measure of relationship 2. Scatter diagram 3. Pearson’s product moment correlation (r) 4. Spearman’s ρ (rho): Non repeated and repeated ranks 5. Bisserial correlation 6. Point bisserial correlation 7. Ø (Phi) correlation 8. Tetrachoric correlation 9. Partial correlation and multiple correlation involving three variables |
| * Express the meaning of regression analysis * Derive regression equation in standard and raw score form. * Use the standard error of estimate in analyzing data. * Indicate the cautions to be considered while estimating errors of predictions | **Unit V: Regression and prediction (7)**   1. Concept of regression analysis 2. The regression equation: standard score form and raw score form 3. Errors of prediction: The standard error of estimate 4. Caution concerning estimation of prediction error |
| * Point out the differences between parametric and non parametric inferential statistics * Use t, Z and F test for making inferences about parametric sets of data * Apply Chi-square test for making inferences about non-parametric sets of data | **Unit VI: Inferential statistics (7)**   1. Concept of inferential statistics: parametric and non-parametric tests 2. Parametric tests: t, Z and F test (One way and two way ANOVA) 3. Non-parametric tests: Chi square (χ2) tests |

***Note:*** *The figures in the parenthesis indicate the approximate teaching hours for the respective units.*

**4. Instructional Techniques**

**4.1 General Techniques**

* Lecture with discussion
* Demonstration
* Home assignment and self study

**4.2 Specific Instructional Techniques**

|  |  |
| --- | --- |
| **Unit** | **Activity and Instructional Techniques** |
| I | * Divide the students into 3 groups * Let each group of students study (a) Functions of statistics, (b) Use of statistics in education and research, and (c) Limitations of statistics * Let the groups prepare 2/3 page report * Report presentation in the classroom followed by discussion |
| II | * Computation of mean, median and mode * Computation of range, inter quartile range, standard deviation and variance * Computation of percentile rank, percentile and standard score * Application of above statistical tools in interpreting test scores. |
| III | * Students should sketch normal curve and its properties based on factual data |
| IV | * Computation of different types of correlations * Computation of partial and multiple correlations |
| v | * Compute regression equation. |
| VI | * Compute t, Z and F test for making inferences about parametric sets of data * Compute Chi-square test for making inferences about non-parametric sets of data |

**5. Evaluation**

**5.1 Internal Evaluation 40%**

Internal Evaluation will be conducted by course teacher based on following activities.

1. Attendance and participation 10 points
2. First assignment/book review/written assignment/quizzes 10 points
3. Second assignment/paper writing and or presentation 10 points
4. Third assessment/ written test (1 or two) 10 points

Total 40 points

**5.2 External Evaluation (Final Examination) 60%**

Examination Division , office of the Dean, Faculty of Education will conduct final examination at the end of semester.

1) Objective type question (Multiple choice 10x1) 10 points

2) Short answer questions (6 questions x 5 points) 30 points

3) Long answer questions (2 questions x 10 points) 20 points

Total 60 points

**5. Recommended books**

Garrett, H. E. and Woodworth, R. S. (1965). Statistics in psychology and education, (3rd edition). Bombay: Bikas, Feller and Simons Pvt. Ltd.

Gupta, S.C. and Kapoor, V.K. (2002). Fundamental of mathematical statistics (11th edition). New Delhi: Sultan Chand and Sons.

Mangal, S.K. (1990). Statistics in psychology and education. New Delhi: Tata McGraw Hill Publishing Company Limited

Minium E.W., King, B.M. and Bear, G. (2001). Statistical reasoning in psychology and education 3rd edition. New York: John Willey and Sons Inc.

Course Title: **Teaching Economics Education**

Course No: Eco. Ed. 535

Nature of the Course: Theory + practical (80% + 20%) Credit hrs: 3

Level: M.Ed. Total periods: 48

Semester: Third

**1. Course Description**:

This course intends to orient the prospective teachers on economics towards the nature of economics education. The basic objective of this course is to enhance teaching skill of prospective teachers of economics education. Since the course has been developed considering the applied side of economics education which demands to impart both theory and practical knowledge of the students.

**2. General Objective:**

The general objectives of the course are:

* To design the instructional objectives in economics education
* To design the model curriculum in economics
* To explain the importance of educational technology and use of different teaching aids in class-room
* To discuss the teaching strategies for economics education
* To review at least two prescribed books in economics education
* To conduct social dialogue on economic issues
* To construct and apply the different types of evaluation techniques in economics education

**3. Specific Objectives and Contents**

|  |  |
| --- | --- |
| **Specific Objectives** | **Contents** |
| * To classify the educational objective * To explain the concept of instructional objective, educational objective and behavioral objective. * To formulate the instructional objectives for the higher secondary and B. Ed. Level. | **Unit I: Instructional Objectives Design in Economics Education (7)**   * 1. Taxonomy of educational objectives   2. Bloom taxonomy   3. New type of taxonomy   4. Concept of instructional objective, educational objective and behavioral objective.   5. Designing instructional objectives in economics education |
| * To explain the foundation and principle of selection of economics curriculum; * To analyze the existing curriculum of HSEB and B.Ed. level * To design a model curriculum of higher secondary and B.Ed. level. | **Unit II : Curriculum in Economics education**  **(7)**   1. Foundation of curriculum 2. Principle of selection of economics curriculum 3. Analytical study of higher secondary and B. Ed level courses 4. Designing model curriculum in economics (group work) |
| * To discuss the concept, scope, characteristics and importance of educational technology in economics. * To distinguish between educational technology and instructional technology. * To discuss the classification and importance of teaching aids. * To construct different teaching aids for teaching economics. * To discuss the problems and uses of teaching aids in economics. | **Unit III: Educational Technology and Teaching Aids (7)**   1. Concept, scope, characteristics and importance of educational technology. 2. Educational Technology and instructional technology. 3. Classification and importance of teaching aids in economics. 4. Construction of teaching aids in economics. 5. Problems and uses of teaching aids in economics. |
| * To review the different methods and techniques popularly applied in economics education. * To construct the instructional planning in economics education. | **Unit IV. Teaching Strategies for Economics**  **(10)**  1. Review of methods and techniques popularly applied in Economics education (Lecture, Discussion, problem solving, case study, observation and programmed instruction etc.)  2. Instructional Planning in economics education (work plan, unit plan and lesson plan) |
| * To write the book review on at least two celebrated prescribed books on economics * To Present the review paper in class room | **Unit V: Book Review (at least two) (5)**  1. Samuelson, Paul. A, *Economics* (latest edition)  2. Salvatore, Dominuk, *Microeconomics: Theory and Applications*(latest edition)  3. Thirwall, A.P., *Growth and Development with special reference to developing Economies* (latest edition)  4. Todaro, M.P., *Economic Development with special reference to developing Economies* (latest edition)  5. Meier, Gerald M.((ed.). *Leading issues in Economic development* (latest edition)  6. Adam Smith: *The wealth of Nations* (latest edition)  7. Sapiro, Edward, *Macro Economics* (latest edition)  Prepare and Present the review paper in class room and seminar |
| * To organize a social dialogue forum on one given contemporary economic issue in Nepal; * To present and discuss the paper in class room | **Unit VI: Social Dialogue on Economic Issues**  **(5)**  1. Contemporary economic issues (global)  2. Economic liberalization and Globalization  3. Equitable economic growth and Social justice  4. Human development and Human Resource Development  5. Youth unemployment (Nepal specific)  6. Inclusive Participatory Development  (Develop report on any one of the issues stated above and present in seminar) |
| * To establish the relationship between diagnostic evaluation and remedial teaching. * To construct and apply the different types of test items in economics. * To explain the essentialities of a good test in Economics. | **Unit VII: Evaluation in Economics Education**  **(7)**   1. Instructional evaluation: Diagnostic evaluation and remedial teaching. 2. Construction and application of test items in economics. 3. Essentialities of a good test in Economics. |

**4. Instructional Technique** instructional techniques of this course are divided in two parts as follows:

**4.1** **General Instructional Techniques**

* Lecture and illustration
* Discussion and demonstration
* Inquiry and question answer

**4.2** **Specific Instructional Techniques**

Unit I and II: Review of material by students and group work specially design instructional objectives and review of designing B. Ed level curriculum

Unit III: Group work, construction of teaching aids and presentation in classroom

Unit IV, V and VI: Review of material, group work

Unit VII: Construct yearly plan, unit plan and lesson plan & group presentation in classroom

Unit VIII: Evaluation in economics.

**5. Evaluation Scheme:**

**5.1 Internal Evaluation 40%**

Internal evaluation will be conducted by course teacher based on following activities:

|  |  |  |
| --- | --- | --- |
| S.N. | Nature of Questions | Points |
| 1. | Attendance | 5 |
| 2. | Participation in learning activities | 5 |
| 3. | First assessment | 10 |
| 4. | Second assessment | 10 |
| 5. | Final assessment | 10 |

**5.2 External Evaluation (Final Examination) 60 %**

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester (proposed).

|  |  |  |  |
| --- | --- | --- | --- |
| S.N. | Nature of Questions | Number of Questions | Points |
| 1. | Objective type question (Multiple choice) | 10× 1 | 10 |
| 2. | Short answer questions (6 questions × 5 points) | 6× 5 | 30 |
| 3. | Long answer questions (2 questions × 10 points) | 2×10 | 20 |
|  | Total | 18 | 60 |

1. **Recommended Reading Materials**

Siddiqui, Mujibul Hasan, (1993). Teaching of Economics, New Delhi: Ashish Publishing House. (For Unit I to VII)

Vedanayagam, E.G. (1998). Teaching Technology for College Teachers, New Delhi: Sterling Publisher Pvt. Ltd. (For Unit I to VII)

Sharma, Seema (2004). Modern Teaching of Economics, New Delhi: Anmol Publications Pvt. Ltd. (For Unit I to VII)

Dhillon Satindar and Kiran Chopra. (2002). A New Approach to Teaching of Economics, New Delhi: Kalyani Publishers. (For Unit I to VII)

**References Reading Materials**

Kushiyait, Binay Kumar (2013). Arthasastra Sikchhan Bidhi (Methods of Teaching Economics) Kathmandu: Ratna Pustak Bhandar.

Dahal, Mahesh Raj et al. (2013). Arthasastra Sikchhan Bidhi, (Methods of Teaching Economics) Kathmandu: M.K. Publishers.

HSEB, Higher Secondary School Curriculum, Sanothimi: Higher Secondary Education Board.

Chauhan S.S. (1994). Innovations in Teaching-Learning Education. New York: Memillian Publishing Co.

Yadav, Amita,1995. Teaching of Economics, New Delhi: Amol Publications, Pvt. Ltd.

Samuelson, Paul. A, (latest edition). *Economics,* New York: McGRAW-HILL BOOK COMPANY.

Salvatore, Dominuk .(2008). *Microeconomics: Theory and Applications*

Thirwall, A.P., (latest edition ). *Growth and Development with special reference to developing Economies.* Hampshire: Macmillan Press Ltd.

Todaro, M.P.(latest edition ). *Economic Development with special reference to developing Economies.* Hyderabad: Orient Longman Ltd.

Sapiro, Edward .( latest edition ). Macro Economics

Meier, Gerald M.((ed.). *Leading issues in Economic development*

(latest edition)

Adam Smith: *The wealth of Nations*

Course Title: **Education planning**

Course No: Eco. Ed. 536

Nature of the Course: Theoretical Credit hrs: 3

Level: M.Ed. Total periods: 48

Semester: Third

1. **Course description**

This course is developed to provide specialized knowledge on educational planning and the economics aspect of educational system. It has covered educational planning through the economic aspects and educational plan and project analysis, approaches to educational finance, educational planning and labour market, human resources. This course is also developed to meet the need of those students who wish to become the teacher of economics of education as well as who plan to go for advance study in economics of education.

**2. General objectives**

* Analyze the educational planning, process and approaches.
* Analyze and evaluate the major educational project and plan of Nepal.
* Measure the educational projection for educational plan in Nepal.
* Show the relationship between educational planning and labour market.
* Analyze the educational project and plan.
* Show the importance of human resources to economic growth.
* Show the relationship between education and development.

1. **Specific Objectives and Contents**

|  |  |
| --- | --- |
| **Specific objective** | **Contents** |
| * Analyse case for education planning. * Describe non-economic objectives of education | **Unit I: Educational Planning ( 5)**   * 1. Case for education planning.   2. Non-economic objectives of education. |
| * Analyze manpower requirement approach * Explain the cost benefit approaches * Describe Social demand approach * Explain Residual approach * Describe System approach | **Unit II: Approaches to Educational Planning**  **(10)**   * 1. Manpower requirement approach   2. Cost benefit approach   3. Social demand approach   4. Residual approach   5. System approach |
| * Introduce the concept and measure the teacher projection * Introduce the concept and measure the cost projection/expenditure projection * Introduce the concept and measure the infrastructure projection * Introduce the concept and measure the student projection * Show the projection of enrolment, school teacher and finance. | **Unit III: Process of Educational Projection and Planning** **(10)**   * 1. Teacher projection   2. Cost projection/Expenditure projection   3. Infrastructure projection   4. Student projection   5. Enrolment Projection   6. School and teacher projection   7. Financial projection |
| * Describe the Evolution of Education Planning in Nepal * Evaluate the recent Nepal’s educational planning efforts on Primary, Secondary, Higher, Non –Formal education | **Unit IV: Educational Planning Efforts in Nepal**  **(10)**   * 1. Evolution of Education Planning   2. Recent Educational planning Efforts:      1. Primary education project      2. Secondary education project      3. Higher education project.      4. Non –Formal education |
| * Explain the Project cycle and its stages * Describe the project monitoring and evaluation * Analyze the impact of BPEP?/SEDP, HSEP and SSRP | **Unit V: Project and Plan Analysis with Reference to Education Project (8)**   * 1. Project cycle and its stages      1. Identification      2. Preparation and analysis      3. Appraisal      4. Implementation      5. Evaluation   2. Educational projects of Nepal and their impacts      1. Basic primary education programme      2. Secondary education development programme      3. Higher secondary education programme      4. School sector reform plan |
| * To explain the Micro, Meso and Macro level plan * To develop the indicators of different level plan * To analyze of access and equity in education | **Unit VI: Types and Indicators of Education Plan (5)**  6.1 Micro, Meso and Macro level plan  6.2. Institutional plan  6.3. Develop the indicators of different level plan  6.4. Analysis of access and equity in education planning |

**4. Instructional Techniques**

The instructional techniques of this course are divided in two parts as follows:

**4.1** **General Instructional Techniques**

* Lecture and illustration
* Discussion

**4.2** **Specific Instructional Techniques**

* Unit V and VI: review of the projects and plans of Nepal and group presentation in class room
* Unit II and VII: prepare the seminar paper on the topic of approach to educational planning and human resources development that can duet with in class room.
* Unit I, III and IV: group work and group discussion

**5. Evaluation Scheme**

Formative and summative both types evaluation will be used. In formative student will be evaluated on the basis of regularity and disciplined manner in the classroom and as well as the classroom participation and other practical activities. In summative evaluation office of the controller of examination Tribhuvan University will conduct final examination at the end of the semester to evaluate student’s performance. The examination will contain fifty full marks of that an examinee must secure twenty marks to pass the course. The types, number and marks of the subjective and objective questions will be as follows.

|  |  |  |  |
| --- | --- | --- | --- |
| **Types of Questions** | **Total questions to be asked** | **No. of questions to the answered and marks allocated** | **Total Marks** |
| **Group A :**  Multiple Choice items | 10 | 10 × 1 | 10 |
| **Group B :** Short questions | 6 | 6 × 5 | 30 |
| **Group C:** Long questions | 2 | 2 × 10 | 20 |

**6. Recommended Reading Materials:**

Frank W. Banghart and Albert trull J.R. (1967). Economical Planning, New York: the Macmillan Company (for unit first and second)

Jones, Frank (1995), Human Capital and the Use of Time, Canada: Family and Community Support Systems Division, Statistics Canada Bureau. (For unit seven)

Carnoy, Martin (1995), International Encyclopaedia of Economics of Education (second edition), New York: Pergamon, Elsevier Science Ltd (for unit four).

Harbition, Frederick and Myers, Charles A. (1964), Education, Manpower and Economic growth: Strategies of human resource development, New York: McGrow-Hill Service in International Development and Book Company (for unit four).

Heggade, Odeyar D. (1992), Economics of Education (first edition), Bombay: Himalaya Publishing House (for unit second).

Chattopadhyay, Saumen (2012), Education and Economics (Disciplinary Evaluation and Policy Discourse), New Delhi: Oxford University Press (for unit second and four).

Sheehan, John (1973), The Economics of Education, Londan: George Allen & Unwin Ltd (for unit four).

Metha, Arun C. (2012), Indicators of Educational Development with Focus on Elementary Education: Concept and Definitions (ORSM Unit), New Delhi: National Institute of Educational Planning and Administration (for unit first).

Metha, Arun C. (2010), Projection of Population, Enrolment and Teacher (ORSM Unit), New Delhi: National Institute of Educational Planning and Administration (for unit third).

**7. References Reading Materials:**

Blau, Mark (1968). Economics of Education (volume one), Meriland: English Language Books society and Penguin Books Ltd.

Blau, Mark (1969). Economics of Education (volume two), Baltimore: English Language Books society and Penguin Books Ltd.

Siwakoti, Dhurba R., Paudel, Min R. and Shreshtha, Prakash (2069), Economics of Development and Education, Kathmandu: Pinakal Publication Ltd.

Dahal, Mahesh R., Kushiyait, Binaya K. and Khanal, Basudev (2069), Economics of Development and Education, Kathmandu: M.K. Publication.

Kafle B.D., Bista M.B., (2060). Educational Planning, Kathmandu: Bhudipuran Prakashan Ltd.

Ahdmad b. And blaug M. Eds., (1973). the practice of manpower and forecasting, Else-view.

Beeker, G.S. (1964). Guman Capital NBER.

Natarajan, S. (1993). Introduction to Economics of education, India: Madras sterling publishers Pvt. Ltd.

Bray, Mark and N.V. Varghese (2011), Directions in Educational Planning (International Experiences and Perspectives), Paris: International Institute for Educational Planning and United Nations Educational, Scientific and Cultural Organization.

UNESCO (2001), Development of Indicators for Educational Planning, Paris: International Institute for Educational Planning collaboration with United Nations Educational, Scientific and Cultural Organization.

UNESCO, (1975). Educational planning in the Asian region, Bangkok: United Nations Educational, Scientific and Cultural Organization.

Kemmerer, Frances (1994), Fundamentals of Educational Planning 47 (Utilizing Education and Human Resource Sector analysis), Paris: International Institute for Educational Planning collaboration with United Nations Educational, Scientific and Cultural Organization.

Schwille, John and Dembele, Martial (2007), Fundamentals of Educational Planning 48 (Global Perspective on Teacher Learning: Improving Policy and Practice), Paris: International Institute for Educational Planning collaboration with United Nations Educational, Scientific and Cultural Organization.

Coombs, Philip H. (1970), Fundamentals of Educational Planning 1 (What is Educational Planning?), Paris: International Institute for Educational Planning, United Nations Educational, Scientific and Cultural Organization.

Coombs, Philip H. and Jaques, Hallak (1987), Cost Analysis in Education: A Tools for policy and planning, London: the Johns Hopkins University press.

Johns, Geraint, (1993). The Economics of Education, London: The Macmillan press Ltd.

Ansari, M.M. (1987), Education and Economic Development, New Delhi: AIU Publication.

Garg, V.P. (1985), The Catalysis in Higher Education, New Delhi: Metropolitan Book Co.

Nagpal C.S. & Mittal A.C. (1993), Economics of Education, New Delhi: Anmol Publications.

Pandit, H.N. (1969), Measurement of cost Productivity & Efficiency of Education, New Delhi: NCERT.

Prakash Shri. & Choudhury, S. (1994), Expenditure on Education: Theory, Models and Growth, New Delhi: NIEPA.

Sethi, Vinita (1997), Educational Development and Resource Mobilization, New Delhi: Kanishka Publication.

Sodhi, T.S. (1978), Education and Economic Development, Ludhiana: Mukand Publications.

Tilak, J.B.G. (1987), Economics of Inequality in Education, New Delhi: Sage Publications.

Varghese, N.V. & Mehta A.C. (2001), Investment Priorities and Cost Analysis, New Delhi: NIEPA.

Ansari, M.M. (1987), Education and Economic Development, New Delhi: AIU Publication.

Garg, V.P. (1985), The Cost Analysis in Higher Education, New Delhi: Metropolitan Book Co.

Nagpal C.S. & Mittal A.C. (1993), Economics of Education, New Delhi: Anmol Publication.

Pandit, H. N (1969), Measurement of Cost Productivity & Efficiency of Education, New Delhi: NCERT.

Prakash Sri. & Choudhury, S. (1994), Expenditure on Education: Theory, Models and Growth, New Delhi, NIEPA.

Cohn, Elchanan & Geske, Terry G. (1990). The economics of education (third edition), New York: Ergamon Press.

Becker, Gary S. (1993). Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education (3rd edition), Chicago: University of Chicago Press,

Monk, David H. (1990). Educational finance: An economic approach. New York: McGraw Hill,

Berne, Robert & Steifle, Leanna (1984). The Measurement of Equity in School Finance, Baltimore: Johns Hopkins University Press.

Course title: **Rural Development**

Nature of the Course: Theoretical

Course No: Eco. Ed. 537 Credit hrs: 3

Level: M.Ed Total periods: 48

Semester: Third

**1. Course Description:**

This course is designed to provide an in-depth knowledge on elements of the rural economy as well as geography, demographic and ethnic diversity of rural areas including rural resources, rural infrastructure and social services development. It aims to provide specialized knowledge on sectoral development of the rural economy, rural tourism,status of community based programmes for rural economic development in Nepal and planning and implementation approach for rural economic development. Moreover, it also aims to develop the skills of report writing about rural development.

**2. General Objectives**

The general objectives of this course are as follows:

* To make the students familiar about the rural economic development of Nepal.
* To provide the students with an in-depth knowledge of the geographical, demographical and ethnic diversity of rural areas among the students.
* To evaluate the students about the status of rural resources, rural infrastructure and rural social services.
* To acquaint the students with the extent and magnitude of the rural problems.
* To develop the skills on examination of the rural tourism in Nepal.
* To make the students familiar with the situation of the community based programmes for rural economic development in Nepal
* To provide the students with the knowledge of the organization, planning and implementation of rural development.
* To provide the students with an in-depth knowledge of the role of private sector in rural development among the students.

**3. Specific Objectives and Contents**

|  |  |
| --- | --- |
| **Specific Objectives** | **Contents** |
| * Explain the objectives and basic elements of rural economic development. * Explain the characteristics, importance, problems and remedial measures of rural economic development. * Explain the geographical structure, demographic structure and ethnic diversity of rural people. | **Unit I: Rural Economy of Nepal (5)**   * 1. Basic Elements, Objectives, Importance, Characteristics, Problems and Remedial Measures of Rural Economy   2. Rural Development in Nepa on the basis ofl      1. Geography      2. Demography      3. Ethnic diversity |
| * Explain the current situation of water resources and its uses: hydro power, irrigation, household consumption and industries. * Discuss the importance and remedial measures of water resources. * Explain the current situation, potentiality, importance, problems and remedial measures of forest resources. * Explain the current situation, potentiality, important, problems and remedial measures of mineral resources. * Explain the current situation, potentiality, important, problems and remedial measures of human resources. | **Unit II: Rural Resources in Nepal (8)**  2.1 Water Resources  2.1.1 Current Situation of Water Resources and its Uses: Hydro power, Irrigation, Household Consumption and Industries.Importance and Remedial Measures of Water Resources.  2.2 Forest Resources  2.2.1 Current Situation, Potentiality, Importance, Problems and Remedial Measures of Forest Resources  2.3 Mineral Resources  2.3.1 Current Situation, Potentiality, Importance, Problems and Remedial Measures of Mineral Resources  2.4 Human Resources  2.4.1 Current Situation, Potentiality, Importance, Problems and Remedial Measures of Human Resources |
| * Examine the rural infrastructure development. * Point out the remedial measure to solve the problems of rural infrastructure development * Examine the rural social service development. * Point out the remedial measure to solve the problems of rural social service development. * Explain the extent of the rural poverty, unemployment and Income Inequalities in Nepalese rural economy under the major issues of rural development. * Discuss the coverage of financial institutions. * Examine the education, health, drinking water and sanitation of rural area. * Discuss the social norms, values, institution and rural technology as the problems of rural economic development. | **Unit III: Infrastructure and Social Services in Rural Nepal (9)**  3.1 Infrastructure in Rural Development  3.1.1 Transportation and Communication: (Current Situation, Potentiality, Importance, Problems and RemedialMeasures)  3.2 Social Services in Rural Development  3.2.1 Education, Health, Drinking Water, Sanitation: (Current Situation, Potentiality, Importance, Problems and Remedial Measures)   * 1. Issues of Rural Development      1. Rural Poverty, Unemployment and Income Inequalities      2. Financial Institutional Coverage      3. Social Norms, Values and Institutions   3.3.4 Rural Technology |
| * Evaluate the current situation of agriculture development in Nepal. * Explain the problems and remedial measures of the agriculture sector of Nepal. * Evaluate the status of new agriculture development perspective plan. * Evaluate the status of agricultural marketing, pricing policy and finance and food security * Evaluate the land reform act and current government agricultural policy of Nepal. * Evaluate the current situation of industrial development in Nepal. * Discuss the role of cottage and small industry in employment, income and the industrial production. * Evaluate the current situation of cooperative sector development in Nepal. * Discuss the role, the problem and remedial measures of the cooperative sector * Discuss the current situation, problems and prospects of rural tourism in Nepal. * Explain the impact of tourism on environment, economy and socio-cultural sectors | **UnitIV:Sectoral Development of Rural Economy in Nepal (14)**   * 1. Agriculture Sector      1. Current Situation, Problems and Remedial Measures of Agriculture Sector      2. New Agriculture Development Perspective Plan      3. Status of Agricultural Marketing, Pricing Policy and Finance      4. Land Reform and Current Government Land Use Policy   2. Industrial Sector      1. Current Situation, Role, Problems and Remedial Measures of Industrial Sector, Current Rural Industrial policy      2. Role of Cottage and Small Industry in Employment Generation, Income Creation and Enhancing Industrial Production   3. Cooperative Sector      1. Current Situation, Role, Problems and Remedial Measures of cooperative Sector   4.4 Rural Tourism  4.4.1 Current Situation, Problems and Prospects of Rural Tourism.  4.4.2 Impact of Tourism on Environment, Economy and Socio- Cultural Sectors |
| * Analyze the national rural development plans and programmes of rural development. * Discuss the impacts of decentralization on rural development. * Explain the importance of local participation in rural development. * Analyze the merits and demerits of the minimum package approach, area development scheme and sectorial and special programs of rural development. * Evaluate the status of the integrated rural development program and public private partnership programs in Nepal. * Explain the problem and impact of the integrated rural development program and public private partnership programs in Nepal. * Explain the role of local government, NGO’s and INGO’s in rural development * Evalute the status of integrated rural development programme in Nepal. * Examine the current rural development policy in Nepal. | **Unit V: Planning and Implementation Approach for Rural Economic Development (12)**  7.1 Rural Economic Development Plans  7.1.1 National Rural Economic Development Plans and Programmes   * + 1. Coordination at the Central Level     2. Decentralization and Coordination at the Local Level   1. Plan Implementation Approach      1. The Minimum Package Approach, Area Development Scheme, Sectorial and Special Programmes      2. Public Private Partnership (PPP) Programmes      3. Role and Problems of Local Government, Non-governmental Organizations and International Non-governmental Organizations in Rural Economic Development      4. Review of Integrated Rural Development Programs in Nepal   7.3 Current Rural Development Policy in Nepal |

**Note: *The figures within the parentheses indicate the approximate periods for the respective units.***

**4. Instructional Technique** Instructional techniques of this course are divided in two parts which are as follows:

**4.1** **General Instructional Techniques**

* Lecture
* Discussion
* Demonstration
* Question answer
* Case Study
* Project

**4.2** **Specific Instructional Techniques**

**Unit I:** Prepare a report through a case study in the topics of diversity and Ethnic diversity

**Unit V:** Project work in impact of tourism on environment, economy and social cultural sectors of rural areas of Nepal.

**Unit VII:** Review of current rural development policies with the students and present in classroom.

**5. Evaluation**

Formative and summative both type evaluation will be used. In the formative evaluation student will be evaluated on the basis of regularity and disciplined manner in the classroom and as well as the classroom participation and other practical activities. In the summative evaluation office of the controller of examination Tribhuvan University will conduct the final examination at the end of the semester to evaluate student’s performance. The examination will contain fifty full marks of that an examinee must secure twenty marks to pass the course. The types, number and marks of the subjective and objective questions will be as follows.

|  |  |  |  |
| --- | --- | --- | --- |
| **Types of Questions** | **Total questions to be asked** | **No. of questions to the answered and marks allocated** | **Total Marks** |
| **Group A :**  Multiple Choice items | 10 | 10 × 1 | 10 |
| **Group B :** Short questions | 6 | 6 × 5 | 30 |
| **Group C:** Long questions | 2 | 2 × 10 | 20 |

**6. Recommended Reading Materials**

Dahal, M. K. (2004). The Nepalese economy towards building a strong economic nation-state. Kritipur: New Hira Books. (For Unit VII).

Hada, G. B. & Aryal, B. (2064). Development and planning in rural perspective. Kritipur: Dikshanta publication (For Unit VII).

Jnawali, D. (2004). Rural-urban interaction: A geographical perspective. Kritipur: Students Books Publishers and Distributors. (For Unit I).

Mondal, S. & Ray, G. L. (2007). Textbook of rural development. New Delhi: Kalyani Publishers. (For Units I & VII).

Pant, Y. P. & Jain, S. C. (1980). Rural problems and rural development in Nepal. New Delhi: Development Publishers ( For Units III, & VII).

Singh, K. (1999). Rural development principles, policies and management (Second Edition). New Delhi: Sage Publication Team. (For Units VII).

Paudel, M.R. & Paudel S. (2012), Nepalese Economy, Kathmandu: M.K. Publication (For Unit I, II, III and IV).

Upadhyay, R.P. (2008) Readings In Rural Tourism, Kritipur: Sunlight Publication (For Unit V).

Gnawali, B.R. & Paudel M.R. (2069), Population Studies, Kathmandu: M.K. Publication (For Unit II).

Nabin, G. (2070), Rural Community Development, Kritipur: Kshitij Pubication (For Unit VI).

Dahal, M.R. & Paudel, M.R. (2070), Nepalese Economics and Quantitative Techniques, Kathmandu: M.K. Publication (For Unit I, II, III & IV).

**References Reading Materials**

ADB. (2006). Report and recommendation of the product to the board of director. Manila: Author.

Bashyal, R. (2008). Rural development practices in SAARC Countries: some innovative cases. New Delhi: Author.

Jha, K. K.(1978). Agricultural finance in Nepal an analytical study. New Delhi: Heritage Publishers.

Lele, U. (1986). The design of rural development. London: The Johnhopkins University Press.

Ministry of Finance. ( Yearly Published). Current economic survey. Katmandu: Nepal Government.

National Planning Commission (2070). Current plans. Katmandu: Nepal Government.

Nepal Rastra Bank (2070). Current Yearly Journal. Katmandu: Nepal Government.

World Bank .(1975). The assault on world poverty-problems of rural development. London: The John Hopkins University Press.

Acharya, G.K. (2059), Rural Economics, Kathmandu: Ratna Pustak Bhandar.

Karna, S.K. (2064), Economic Planning, Kritipur: Quest Publication.

Sharma, N.K. (2068), Contemporary Development Economics and Nepalese Economy, Kathmandu: Pairawi Publication.

Sapkota, B. D. & Sapkota, K.N (2008), Rural Resources Environment & Management, Kritipur: Sunlight Publication.

Sharma, N.K. (2061), Economics of Nepal, Kathmandu: Pairawi Publication.

Luitel, C.P. (2058), Contemporary Development Economics and Nepalese Economy, Kathmandu: Bhundipuran Publication.

Silwal, S. (2060), Contemporary Development Economics and Nepalese Economy, Kathmandu: Ratna Pustak Bhandar.

Hada, G.B. (2062), Rural Development Policies & Strategies, Kripitur: Dikshanta Pustak Prakashan.

Jhingan, M.L. (2008), The Economics of Development and Planning (39th edition), New Delhi: Vrinda Publications (p) Ltd.

Agrawal, G. R. (1982), Decentralization and Development, Kathmandu: CEDA, T. U.

CBS, (1995/96, 2003/2004 and 2010/11), Nepal Living Standard Survey, Kathmandu: Central Bureau of Statistics, Government of Nepal.

Ojha, B.R. (2059), Contemporary Development Economics and Nepalese Economy, Kathmandu: Taleju Publication.

Course Title: **International Economics**

Course No. : Eco. Ed. 538 Nature of Course: Theory

Level: M. Ed. Credit Hours: 3

Semester: Third Teaching - hours: 48

1. **Course Description**

The course offers a rigorous combination of theoretical and application-oriented courses in economics. The course opens up international macroeconomic issues focusing on international trade theory and policy. This course provides an analysis of the trade problems and forums specially linked with developing countries.

1. **General Objectives:**

The general objectives of this course are to:

* describe the nature of International Economics;
* discuss different trade theories and approaches of international economics;
* explain the Law of Reciprocal Demand;
* analyze the terms of trade and its determinants and estimation;
* explain the balance of payment adjustment mechanism;
* discuss the measure of exchange control;
* discuss thetrade problems for developing countries; and
* introduce the different international forum of international trade.

1. **Course Outlines**

|  |  |
| --- | --- |
| **Specific Objectives** | **Contents** |
| * Explain the concept of internal and international trade; * Critically evaluate the trade theories of Adam Smith, Ricardo and Haberler * Discuss the Heckscher- Ohlin theory, Leontief Paradox and factor price equalization theorem of international trade. * Discuss the Rybezynsky theorem and Vent for surplus approach | **Unit I: Theories of Trade (**12)   1. Concept of internal and international trade. 2. Trade theories of Adam Smith, Ricardo and Haberler. 3. Heckscher-Ohlin theory, Leontief’s paradox and factor price equalization theorem. 4. Rybezynsky theorem, Vent for surplus approach |
| * Describe the law of Reciprocal Demand * Derive the Offer curves. | **Unit II : Law of Reciprocal Demand (**5)   1. Law of reciprocal demand. 2. Derivation of offer curves. |
| * Explain the concept, types and determinants of terms of trade. * Estimate the Nepal’s terms of trade with its major trading partners. | **Unit III : Terms of Trade (**8)   1. Concept, types and determinants of terms of trade 2. Quantitative estimation of terms of trade of Nepal with its major trading partner(s) |
| * Explain the concept of balance of payment and trade * Discuss the causes of disequilibrium in BOPs. * Explain the balance of payment Automatic adjustment mechanism. | **Unit IV: Balance of Payment and its Adjustment**  **(**10)   1. Concept of Balance of Payments and trade 2. Causes of disequilibrium in BOPs. 3. Adjustment Mechanism (Automatic Adjustment: Price and Income Adjustment and Money in the Adjustment process) |
| * Discuss the meaning, types and effects of tariffs * Explain the concept, types and effects of quota; and * Discuss the concept of dumping and its objective and effects. | **Unit V: Exchange Control (8**)   1. Tariffs 2. Quotas 3. Dumping |
| * Analyze the trade problems of the developing countries. * Describe the nature and functions of international trade forums. | **Unit VI: Trade Problems and International** **Forums for Developing Countries (5**)   1. Trade problems of developing countries. 2. UNCTAD, WTO and SAFTA |

***Note: The figures in the parentheses indicate the approximate periods for the respective units***

1. **Instructional Techniques**

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

**4.1 General Instructional Techniques**

* Lecture and illustration
* Discussion and demonstration
* Question answer

**4.2. Specific Instructional Techniques**

|  |  |  |
| --- | --- | --- |
| **Unit** | **Activities and Instructional Techniques** |  |
| I | 1. **A: Activity:** Class discussion on International and International Trade. **B:** **Instructional Technique:** Grouping the student in two groups and guide them for discussion on differences between internal and international trade. 2. Class discussion on theories of international trade focusing on Adam Smith, David Ricardo, and H-O theories. 3. One guest lecture on application of H- O theory in the context of liberalized economy. |  |
| II | Class room discussion on concept and derivation of Offer Curve. |  |
| III | **Activity:** Calculation of Nepal’s terms of trade with major trade partners.  **Instructional Technique:** Instruct students to collect relevant data and calculate terms of trade by using appropriate methods. |  |
| IV | Class room discussion on causes of disequilibrium on BOPs in the context of Nepal. |  |
| V | Class room discussion on means of exchange control. |  |
| VI | **Activity:** Class room presentation on trade problems of Nepal.  **Instructional Technique:** Prepare a report on trade problems of Nepal. |  |

**Note: Specific Instructional Techniques may or may not require for each of the unit mentioned in course outlin**

**5. Evaluation Scheme**

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities:

|  |  |  |
| --- | --- | --- |
| S.N. | Nature of Questions | Points |
| 1. | Attendance | 5 |
| 2. | Participation in learning activities | 5 |
| 3. | First assessment | 10 |
| 4. | Second assessment | 10 |
| 5. | Final assessment | 10 |

5.2 External Evaluation (Final Examination) 60 %

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester (proposed).

|  |  |  |  |
| --- | --- | --- | --- |
| S.N. | Nature of Questions | Number of Questions | Points |
| 1. | Objective type question (Multiple choice) | 10× 1 | 10 |
| 2. | Short answer questions (6 questions × 5 points) | 6× 5 | 30 |
| 3. | Long answer questions (2 questions × 10 points) | 2×10 | 20 |
|  | Total | 18 | 60 |

**6. Recommended Books**

Kindleberger, C. P. (2004). ***International Economics***. Delhi, All India Traveler Book Seller. (For Unit V)

Mannur, H.G. (2007). ***International Economics****:* ***Theory and Issues***. New Delhi, Vikash publishing house. (For Unit I, IV)

Mithane, D. M. (2007). ***International Economics****.* Mumbay, Himalayan Publishing House. (For Unit II, V)

Poudyal, S. R. (1988). ***Foreign Trade, Aid and Development in Nepal***. New Delhi: Commonwealth Publishers. (For Unit III)

कुशियैत, विनय कुमार .(२०६८). **अन्तर राष्ट्रिय अर्थाशाश्त्र,** किर्तिपुर: सनलाइट पब्लिकेसन (For Unit I, II, IV)

**7. References Books**

Banskota, N. P. (1981). ***Indo - Nepal Trade and Economic Relations***. Delhi: B. R. Publishing Corporation.

Cherunilam, F (2006). ***International Economics***. New Delhi, Tata Mc-Graw Hill Publishing Company Limited.

Jhingan, M L. (2007)**. *International Economics.*** Delhi, Konark publishers Pvt Ltd

Krugman, P. R. and M. Obstfeld. (2009). ***International Economics****: Theory and Policy*. Pearson Education.

Nepal Rastra Bank. ***NRB Economic Review******(various issues)***. Kathmandu, Nepal: Nepal Rastra Bank.

Salvatore, D. (2005). ***International Economics****.* New Delhi: Tata McGraw Hill Publishing Company Limited.

Samuelson, P. A. and W. D. Nordhaus (2003). ***Economics****.* New Delhi: Tata Mc Graw Hill Publishing Company Limited.

Course title: **Monitoring, Evaluation and Research in Planning and Management**

Course No.: Ed.PM. 535Nature of the course: Theoretical

Level: M.Ed. Credit hours: 3

Semester: III Teaching hours: 48 hours

1. **Course Description**

This course is designed to provide students with perspectives of monitoring, evaluation and research in planning and management in education. It particularly acquaints the students with the performance and practices in educational planning and management with emphasis on monitoring, evaluation and research perspectives. Dynamics of monitoring and evaluation, research development results, use of qualitative and quantitative research in Educational Planning and Management, and planning educational research are the foci of this course.

1. **General objectives**

The general objectives of this course are as follows:

* To enable students to explore the monitoring, evaluation and research trends of educational planning and management.
* To acquaint students with the process of planning for monitoring, evaluation and research development results.
* To prepare students to use quantitative, qualitative and mixed method research design for evaluation of education plan and programs.
* To enable students to analyze qualitative- quantitative data for research and program evaluation in education sector.
* To familiarize students with the potential use of monitoring, evaluation and research results in relation to educational policy, plan and program.

1. **Course outlines**

|  |  |
| --- | --- |
| **Specific objectives** | **Contents** |
| **Unit one** | **Dynamics of monitoring and evaluation (10)** |
| * Differentiate between monitoring evaluation and research * Identify the elements of monitoring and evaluation * Describe the importance of monitoring and evaluation * Discuss the components of monitoring and evaluation * Analyze the outcome based planning for evaluation * Describe result-based monitoring * Enumerate the use of formative information to school improvement * Identify the challenges of effective monitoring and evaluation | * 1. Differences between monitoring evaluation and research   2. Elements of monitoring and evaluation: efficiency, effectiveness, relevance and sustainability   3. Importance of monitoring and evaluation   4. Components of monitoring and evaluation system   5. Cycle of planning, management and   evaluation   * 1. Outcome-based planning for evaluation   2. Result-based monitoring   3. Use of formative information to school   improvement   * 1. Challenges of effective monitoring and   evaluation |
| **Unit two** | **Planning for monitoring, evaluation and research (10)** |
| * Identify planning, monitoring, evaluation and research based management * State the policies and components of planning, management, evaluation and research * Find out the key elements of evaluation process * Describe the engagement of stakeholders in monitoring, evaluation and research * Describe the approaches of research planning * Prepare the framework/ matrix for planning research | 2.1 Concept of Monitoring and evaluation  framework  2.2 Process of planning for monitoring and evaluation  2.2.1 Selecting program for monitoring  and evaluation  2.2.2 Setting indicators: outputs and outcomes indicators, qualitative and quantitative indicators  2.2.3 Formulating evaluation objectives and questions  2.2.4 Selecting approaches and types of evaluation  2.2.5 Selecting appropriate data collection tools and measurement  2.2.6 Preparation of framework for data analysis  2.2.7 Preparation of Gantt Chart/Schedule for monitoring and evaluation  2.3 Stakeholders’ engagement in  monitoring, evaluation and research   * 1. Approaches of research planning   2.5 Framework and matrix for planning research |
| **Unit three** | **Design for Evaluation and Research (11)** |
| * Clarify the concept of quantitative evaluation and research design * Describe elements and framework of comparison for group design * Explain framework of randomized control trial design * Describe post program only design * Develop and describe pre-and post-program design * Explain elements of ethnographic design * Explain case study design * State the features and stages of a qualitative evaluation and research | * 1. Quantitative evaluation research design   3.1.1 Comparison group design  3.1.2 Randomized control design  3.1.3 Post program design  3.1.4 Pre- and Post-Program design   * 1. Qualitative research design   3.2.1 Ethnographic design  3.2.2 Case study  3.2.3 Features and stages of qualitative evaluation and research   * 1. Multi-sites and Mixed method design   2. Sample and sampling procedure in quantitative and qualitative evaluation |
| **Unit four** | **Data collection and analysis (13)** |
| * Explain steps and process of constructing questionnaire and interview schedule * Develop questionnaire/interview schedule, observation checklist and record review format * Prepare observation, FGD and interview guidelines for qualitative data collection * Explain the procedures for gathering different nature of data from different sources and methods * Analyze quantitative data using Excel and SPSS software * Describe process of triangulating data from multiple sources and methods * Measure performance, outcomes and impacts of programme/interventions through data analysis * Discuss the use of monitoring, evaluation and research in EMIS and decision-making process | * 1. Construction of data collection tools: steps and process      1. antitative data collection tools: Questionnaire/interview schedule, observation checklist and record review format      2. Qualitative Data collection: Observation, Focus Group Discussion and interview guides   2. Collecting data from different sources using multi-methods and techniques   3. Management and statistical analysis of quantitative data using computer software (Excel and SPSS)   4. Analysis of qualitative data and information   5. Triangulation of data from different sources and methods   6. Measuring performance, outcomes and impacts using results of data analysis   7. Use of monitoring, evaluation and research in EMIS and decision making. |
| **Unit five** | **Use of monitoring, evaluation and research results (4)** |
| * Explain process of preparing monitoring, evaluation and research report * Describe general strategies for developing recommendation * Discuss process and importance of disseminating results * Explain the use of results and recommendations of evaluation and research | 5.1 Process of preparing monitoring, evaluation and research report  5.2 General strategies for developing recommendations   * 1. Disseminating the results and recommendations of evaluation and research   2. Use of results and recommendations for decision-making, planning, managing and improving the program |

1. **Instructional techniques**

General as well as specific instructional techniques are used while teaching this course.

* 1. **General instructional techniques**

These techniques include lecture preferably with multi-media projector, discussion, and question-answer. While using general instructional techniques, Brain storming techniques may be preferable. Most importantly, participatory interactive classroom activities are strongly recommended.

* 1. **Specific instructional techniques**

To promote experimental learning in this course, following specific instructional techniques are recommended for selected units to ensure students’ active participation in teaching learning process and making the teaching learning research oriented.

|  |  |
| --- | --- |
| **Units** | **Specific instructional techniques** |
| **Unit II:**  **Planning educational research** | **Experimental Exercises**  Form pairs of students to draw the concept and use of framework for planning matrix for research, identifying research issues and managing planning for research.  Let them prepare brief reports of research in educational research and present them in the class.  Let the class discuss after presentation of the report. |
| **Unit three:**  **Qualitative and quantitative research in EPM** | **Experimental Exercises**  Form pairs of students to prepare a comparative view on qualitative and quantitative research in planning and management in education.  Let them present the paper in the class and discuss to find out the differences and proper use of research in education. |
| **Unit Three**  **Data collection and analysis** | Students will be divided into groups and one group prepares quantitative data collection tools and another group qualitative data collection tools.  Field visit for collecting sample data for monitoring and evaluation activity.  Students will analyze the data , prepare monitoring and evaluation report and present it in class. |

1. **Evaluation Scheme**

**5.1** **Internal Evaluation 40%**

Internal evaluation will be based on the following criteria:

Oral examination, seminar/ workshop/ conference participation and presentation, written examination, oral presentation, paper-pencil tests, portfolio/continuous assessment.

1. Attendance 05 points
2. Participation in learning 05 points
3. First assignment/ assessment 10 points
4. Second assignment/assessment(Mid-term test) 10 points
5. Third assessment 10 points

40 points

* 1. **External Evaluation**

External evaluation will be based on the following criteria:

|  |  |  |  |
| --- | --- | --- | --- |
| Nature of questions | Total questions to be asked | Number of questions to be answered | Weight age |
| Multiple choice items | 10 questions | 1 mark each | 10 marks |
| Short answer questions | 6 questions | 6x 5 marks | 30 marks |
| Long answer questions | 2 questions | 2x10 marks | 20 marks |

**Recommended Text Books**

Chaplowe S.G. (2008). *Monitoring and evaluation planning.* USA: USAID.

Cohen, L., Manion, L. and Morroson, K. (2013). *Research Methods in Education.* USA: Routledge.

Lincoln, Y.S. and Denzin, N.K. (2005). *Strategies of Qualitative Inquiry.* CA: Sage.

Marriot, N. and Goyder, H. (2009). *Manual for monitoring and evaluation education partnership.* Paris: UNESCO.

Microsoft Corporation (2014). *Quality assurance: Monitoring and evaluation to inform practice and leadership, transformation framework.* US: Author.

Payne, D.A. (1994). *Designing educational project and programme evaluation*. New York: Springer

Postlethwaite, T.N, (2004). *Monitoring educational achievement.* Paris: UNESCO.

UNESCO (2005). *Educational research: Some basic concepts and terminology.* Paris: Author.

United Nations Children’s Fund/ UNICEF (2009). *Child friendly schools.* USA: Author.

United Nations Development Programme (UNDP) (2009). *Handbook on planning, monitoring and evaluation for development results.* USA: Author.(Unit I and II)

Wholey, J.S., Hatry, H.P, & Newcomer, K.E. (2010). *Handbook of practical programme evaluation.* San Francisco: Jossey-Bass (Unit II, III, IV and V)

World Bank (2004). *Monitoring and evaluation: some tools, methods and approaches.* Washington, DC: Author.

|  |  |
| --- | --- |
| Course Title: **Financing of Education**  Nature of the course: Theoretical |  |
| Course No.: Ed PM 536 | Credit hours: 3 |
| Level: MEd | Teaching hours: 48 |
| Semester: Third |  |

* 1. **Course Description**

This course on Financing of Education aims at orienting about conceptual basis and modes of education financing with particular reference to school education to higher education students. It intends to provide knowledge about the way education in general and school education in particular are financed and regulated. The course also orients students about different practices of ensuring financial accountability in education sector. Thus this course encourages students to have a broader conceptual clarity about financing of education.

* 1. **General objectives**

The general objectives of this course are as follows:

* To enable students to conceptualize and explain the basic philosophies behind education financing.
* To enable students to understand and explain the multiple sources of education financing and the ways these sources operate simultaneously.
* To enable students to conceptualize and explain how different trends and modalities of school education financing operate and interact particularly in the case of Nepal.
* To make students knowledgeable about the techniques of financial resource management in education
* To familiarize students with the economic analysis of education financing.
  1. **Course Outlines**

|  |  |  |
| --- | --- | --- |
| **Specific Objectives** | **Contents** | **Teaching hrs (48)** |
| Describe the basic principles behind education financing. | **Unit 1: Economics of education Finance**  1.1Principle of education finance  1.1.1 Definition   * + 1. Scope   1. Objectives of financing of education   2. Approaches to financing of education   3. Investment Decision   4. Risk, return, and the opportunity cost of schooling   5. Conditional cash transfer   6. Subsidization in Education | 12 |
| Identify and explain the indicators education financing.  Understand and explain the multiple sources of education financing and the ways these sources operate simultaneously. | **Unit 2:Indicators and sources of financing of education**   * 1. Indicators of financing of education      1. Educational expenditure and GDP/GNP/GNH      2. Educational expenditure and national budget   2. Sources of school finance   3. Concept of cost sharing and cost recovery in school finance | 8 |
| Explain the general trends and modalities of education financing  Explain trends and modalities of school education financing in the context of Nepal.  Outline the critical issues on financing modalities of the government. | **Unit 3: Trends and Modalities of Financing of School Education**   * 1. Trends (National and International)   3.2 Modalities of government expenditure on education   * + 1. Block grants/lump-sum grants     2. Per capita funding     3. Matching fund     4. Ear marked Scheme     5. Performance based scheme   1. Critical issues on financing modalities | 12 |
| Describe critically the techniques of financial resource management in education.  Explain some critical issues of managing educational resources. | **Unit 4:Financial Resource Management**   * 1. Concepts and practices   2. Resource generation & its administration   3. Resource planning and targeting   4. Some critical issues related to managing educational resources | 8 |
| Analyze financing of education from economic perspective  Explain different ways of auditing in education.  Explain role of different types of audit in ensuring financial discipline. | **Unit 5: Economic analysis of financing of education**   * 1. Allocation of resources in education sector (both governmental and non-governmental)   2. Equity and efficiency in public expenditure on education   3. Efficiency in public expenditure on education   4. Auditing and efficiency of public expenditure with reference to school financing      1. Concept of audit and social audit      2. Objectives of audit      3. Types of audit (internal, external, social)      4. Financial auditing and performance auditing | 8 |

**4. Instructional Techniques:**Two types of instructional techniques- general and specific will be used to deliver the course. Specific techniques will be used to deliver the specific units selected by the teacher in consultation with the students. General techniques are briefly descried below.

4.1 Lecture and tutorial support on the difficult content, and assignment can be used as specific instructional techniques by the teacher. Types of learning activities that the teacher is expected to facilitate will range from ensuring attendance to lectures, performing specific assignments, writing papers, initiating independent private study, reading and reviewing books, journals and papers, learning how to give constructive criticism, and peer group study.

1. **Evaluation:** Evaluation of students’ performance is done on two-way system of internal and external evaluation. Internal evaluation will take the form of formative assessment of students’ performance, grades on which will be added to the grades of external evaluation.
   1. **Internal Evaluation - 40%**

Internal evaluation will be based on the following criteria:

Oral examination, seminar/workshop/conference presentation, written essay and examination (unit tests), quizzes, paper-pencil/ test will take the form of continuous assessment. Internal evaluation will be conducted by the course teacher based on the following activities:

1. Attendance 5 points
2. Participation in learning activities 5 points
3. First assignment/midterm exam 10 points
4. Second assignment/assessment (1 or two) 10 points
5. Assignment 10 points

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**Total 40 points**

* 1. **External Evaluation (Final Examination) - 60%**

External evaluation will be conducted by Examination Division of the Dean’s office, Faculty of Education as final or end of semester examination with a focus on the following types of questions:

1. Objective type questions (Multiple choice items 10x1) 10 points
2. Short answer questions (6questions x 5points) 30 points
3. Long answer questions (2 questions x 10 points) 20 points

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**Total 60 points**

1. **Recommended Readings**

Alain, de J. & Elisabeth S. (2004). *Conditional cash transfer programs: Are they really magic bullets?*

# Baker, B. D., Green, P. E. & Richards, C. E. (2007).*Financing Education Systems*. Prentice Hall

Benson, C.S. (1995). Educational financing.In Martin Carnoy (Ed.).*International encyclopedia of economics of education*. New York: Elsevier Science Ltd.

Chaudhry, S. &Uboweja, A. (2014).*Partnerships in school education.Learning and insights for India*. India: Central Square Foundation.

Gaspar, F. & Claudia, V. (2010).*Conditional cash transfers: A global perspective*. MDG Insights Issue 01.

*Grigoli*, F. (2014).*A hybrid approach to estimating the efficiency of public spending on education in emerging and developing economies.*IMF Working Paper.http://www.imf.org/external/pubs/ft/wp/2014/wp1419.pdf

Hartog, J. &Diaz-Serrano, L. (2014). *Why Do We Ignore the Risk in Schooling Decisions?* Institute for the Study of Labor, Bonn.

Hasan, A. (2010). *Gender-targeted conditional cash transfers. Enrolment, spill over effects and instructional quality.* Washington D.C.: The World Bank.

Human Development Unit, South Asia Region (2014).*Public expenditure tracking and quantitative service delivery surveys in Nepal’s education sector*. Washington DC: World Bank.

Janssen, M.C.W., E. M,&Kamphorst, E. M. (2004).*The Economics of demand-side financing.*The Netherlands: SEOR-ECRI.

Janssen, M.C.W., E. M,&Kamphorst, E. M. (2004).*The Economics of demand-side financing.*The Netherlands: SEOR-ECRI.

Jesper, S. &Henrik, F. L. (2005).*Conceptual basis for performance based grant systems and selected international experiences.*National Stakeholder Workshop in Nepal, Kathmandu 31 May 2005.

Koirala, M.P. & Koirala, A. (2014). Dilemmas and perspectives of financing Nepal's school education. *Academic Voices*, Vol. 4, No. 1, p.29-36.

Lamsal, H. (2014).  *Financing in primary education in Nepal from equity perspectives and its role in social change*.

LaRocque, Norman (2008). *Public-private partnerships in basic education: An international review*. London: CfBT Education Trust.

Robertson, S.L. and Verger, A. (2012) *Governing Education Through Public Private Partnerships,* published by the Centre for Globalisation, Education and Societies,University of Bristol, Bristol BS8 1JA, UK at:http://susanleerobertson.com/publications/

Santwona Memorial Academy, Educational Research Centre (2009).*A study on the financial management of department of education, District Education Office, school; and tracking of school grants (especially, sip and rahat grants)*.Sanothimi: Department of Education

School of Education (Unpublished doctoral dissertation).Kathmandu University, Dhulikhel.

The institute of internal auditors (2012).*Supplemental Guidance: The role of auditing in public sector governance*. www.globaliia.org/standards-guidance

UNESCO (2008).Equity and inclusion in education.Tools to support education sector planning and evaluation. www.unesco.org/bpi/pdf/iatt\_equity\_inclusion\_tools\_042008\_en.pdf

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Course Title: **School Management**  Nature of Course: Theoretical Course No: Ed. PM 537 Credit Hours: 3

Level: M.Ed. Teaching Hours: 48

Semester: Third

1. **Course Description**

This course is designed to provide the students with the recent approaches of managing public/community schools. This course specifically deals with theoretical and practical perspectives of school-based management and enriches the students’ understanding of improving school effectiveness. The course also deals with school emergency management plan. Through experiential exercises the students gain insight into practical know-how of school-based management.

1. **General Objectives**

The general objectives of this course are as follows:

* To enable the students in understanding the theoretical premises that shaped and reshaped school-based management (SBM).
* To acquaint the students with enabling conditions for the success of SBM,
* To provide the students with a better understanding of experiences of selected countries with SBM and draw implications for improving SBM in Nepal
* To enable students in developing insight into improving of school effectiveness, and
* To familiarize the students with the school emergency management plan.

1. **Specific Objectives and Contents**

|  |  |
| --- | --- |
| Specific Objectives | Contents |
| * Clarify the meaning and definition of school-based management and self-managing schools * State the objectives of SBM * Elucidate a knowledge framework for internal school process for SBM and draw implications for managing schools in Nepal * Elaborate a conceptual framework for analyzing school-based management * Shed light on challenges of SBM in the present context | Unit 1: School-Based Management (SBM): Theoretical Perspective (12)  1.1 Concept of SBM and self-managing schools  1.2 Objectives of SBM  1.3 New vision of SBM: A knowledge framework for internal school process   * 1. A Conceptual framework   for analyzing School-Based Management   * 1. Challenges of SBM in New Era      1. New educational paradigm      2. Triplization in education (Globalization, Localization and Individualization)      3. New paradigm of learning      4. New paradigm of schooling |
| * State the needs and ways of building capacity for operating schools at local levels * Link SMB with learning outcomes through measuring impact of learning outcomes * State the decentralization of budget to the school level * State how synergy is created through networks * Show differences between four models of SBM * Explain the experiences of application of SBM in developing countries | Unit 2: School-Based Management: Practical Perspective (6)  2.1 Capacity building requirements  2.2 Linkages between SMB and learning outcomes  2.3 Measurement of impact of learning outcomes  2.4 Decentralization of budget to the school level  2.5 Synergy through networks  2.6 Models of SBM  2.6.1 Administrative-control SBM  2.6.2 Professional-control SBM  2.6.3 Community-control SBM  2.6.4 Balanced-control SBM  2.7 SBM as micro-level management  2.8 Applications of SBM in developing countries |
| * State the experiences of selected where SBM is being practiced * Shed light on the significant experience of Australia with special reference its implementation in Victoria state * Explore and present how SBM is being practiced in Nepal | Unit 3: Experiences of Selected Countries with SBM (12)  3.1 Concise experiences of Canada, Hong Kong (China), The United Kingdom, The United States of America  3.2 Australia  3.2.1 SBM as ‘Schools of the Future’  3.2.2 Dimensions of ‘Schools of the Future’  3.2.3 The School Charter  3.6 SBM in the context of Nepal: Community managed schools |
| * Clarify the concept ‘school effectiveness’ * Differentiate between school effectiveness and school efficiency * Explain four theoretical views on organizational effectiveness and draw implications for community schools of Nepal * Describe enhancing conditions of schooling for improving school effectiveness * Conduct the self-evaluation of schools | Unit 4: Improving School Effectiveness (12)  4.1 Concept of school effectiveness  4.2 Distinction between school effectiveness and school efficiency  4.3 Theoretical views on organizational effectiveness  4.3.1 Economic rationality  4.3.2 The organic system model  4.3.3 The human relations approach  4.3.4 The bureaucracy  4.4 Effectiveness-enhancing conditions of schooling  4.5 Concept of school self-evaluation  4.6 Types of school self-evaluation  4.6.1 Degree of internal versus external orientation  4.6.2 Choice of criteria to assess organizational effectiveness |
| * Clarify the concept school emergency management plan * Elaborate four types of emergency management plan | Unit 5: School Emergency Management Plan (6)  5.1 Concept of school emergency management plan  5.3 Types of emergency management plan  5.3.1 Evacuations  5.3.2 Relocation  5.3.3 Isolation  5.3.4 Expansion |

Note: The number within parenthesis indicates the approximate teaching hours allocated to respective unit.

**4. Instructional Techniques**: General as well as specific instructional techniques are used while teaching this course.

**4.1 General instructional techniques**: These techniques include lecture preferably with multi-media projector, discussion, and question-answer. While using general instructional techniques, brain storming exercises may be preferable. Most importantly, participatory interactive classroom activities are strongly recommended.

**4.2 Specific instructional techniques**

To promote experiential learning in this course, following specific instructional techniques are recommended for selected units to ensure students’ active participation in teaching-learning process and make the teaching-learning research-oriented.

|  |  |
| --- | --- |
| Units | Specific Instructional Techniques |
| **Unit 3**  **Experiences of Selected Countries with SBM** | **Experiential Exercises**   * Form pairs of students to prepare a comparative view of SBM in different countries and to find out successful cases * Let them present the paper in the class and discuss to find out implications for Nepal      * Form pairs of students to study the management of community/public schools to analyze them from the SBM perspective. * Let them prepare brief reports and present them in the class and discuss. |
| **Unit 4**  **Improving school effectiveness** | **Experiential Exercises**   * Form pairs of students to develop self-evaluation tools and administer them in public schools * Let them prepare brief reports and present them in the class * Let the class discuss after presentation of the report |

**5. Evaluation**

**5.1 Internal Evaluation 40%**

The concerned teacher will carry out the internal evaluation of the students based on the following criteria.

1. Attendance 05 points

2. Participation in learning 05 points

3. First assignment/assessment 10 points

4. Second assignment/assessment (Mid-term test) 10 points

5. Third assessment 10 points

**Total 40 Points**

**5.2 Final/Semester Examination**

Examination section, Dean's Office, Faculty of Education will conduct final examination at the end of the semester. The number of items in each category of question and distribution of points to be included in the final examination paper are as follows:

1. Objective type questions (10 Multiple choice items x 1 point) 10 points

2. Short answer questions ( 5 questions x 6 points) 30 points

3 Long answer questions (2 questions x 10 points) 20 points

**Total 60 Points**

1. **Recommended Books and Reference Materials**

**Recommended Books**

Abu-Duhou, I. (1999). *School-based management*. Paris: International Institute for Educational Planning. (Unit III)

Barrera-Osorio, F., Fasih, T., Patrinos, H. A. & Santibáñez, L. (2009). *Decentralized Decision-Making in Schools: The Theory and Evidence on School-Based Management*. Washington DC: The World Bank. (Unit II)

Caldwell, B.J. (2010). *School-based management.* Paris: International Institute for Educational Planning. (Unit II)

Patricia, G. (1994) *School based management: theory and practice*.Virginia: National Association of Secondary School Principals. (Unit I)

Nova Scotia Department of Education. (2008). *School emergency management plan - planning guide*. Halifax, N.S.: Nova Scotia Department of Education (Unit V)

Scheerens, J. (2000). *Improving school effectiveness*. Paris: International Institute for Educational Planning. (Unit IV)

Townsend, T. (1997) *Restructuring and quality: Issues for tomorrow’s schools*. New York: Routledge

The World Bank. (2007). *What is school-based management.* Washington D.C.: Author (Unit I)

Volansky, A & Friedman I. A. (2003). *School-based management an international perspective*. Israel: Ministry of Education, Devora Ha-Niviah (Unit I)

**References**

By Lori Jo Oswald, L. J. (1995). School-based management. ERIC Digest 99 July 1995. Retrieved from <https://scholarsbank.uoregon.edu/xmlui/bitstream/handle/1794/3320/digest099.pdf?sequence=1>

Wohlstetter, P. and Briggs, K. L. (1994). The principal’s role in school-based management. School Leadership. Retrieved from <https://www.usc.edu/dept/education/cegov/focus/leadership/publications/journals/The%20Principal's%20Role%20In%20School-Based%20Management.pdf>

Course Title: **Managing Diversities in Education**

Course No: Ed. PM 538 Nature of course: Theoretical

Level: M.Ed. Credit hours: 3

Semester: Third Teaching hours: 48

**1. Course Description**

This course is designed to provide students with perspectives of diversities that are to be managed in education. It particularly acquaints the students with the performance, practices and factors of diversity management with emphasis on multicultural perspectives. Diversity technology, sources of diversity and managing diversities of people that result from different backgrounds that they come from are the focus of the course.

**2. General objectives of the course**

The objectives of this course are as follows:

* To acquaint the students with fundamental concept and dimensions of diversity management from different perspectives.
* To develop insights and ability to accommodate diversity in education for its management.
* To provide deeper knowledge on diversity and challenges in relation to the organization of education.
* To familiarize the students with different models of diversity management.
* To prepare the students for using technology to managing diversity.

**3. Course Outlines**

|  |  |  |
| --- | --- | --- |
| **Specific Objectives** | **Contents** | **Teaching hours** |
| * Draw the concept, need and importance of studying diversity in education. * Describe the dimensions of diversity in education. | **Unit One: Concept and Dimensions of Diversity in Education**   * 1. Meaning of diversity   2. Need and importance of studying diversity in education   3. Dimensions of diversity in education   Gender  Ethnicity and caste  Language  Economy  Culture and religion  Special needs  Intelligence and ability | **8** |
| * Explore the need of multicultural curriculum in education * State the need to accommodate bilingual and multilingual approach to education * Enumerate the concept of inclusive education * Identify ways of changing school culture * State ways to ensure action for social justice * Highlight ways to accommodate local and school based curriculum | **Unit Two: Accommodating Diversity in Education**  2.1 Multicultural curriculum  2.2 Bilingual and multilingual education  2.3 Inclusive education  2.4 Changing school culture  2.5 Action for social justice  2.6 Local and school-based curriculum | **11** |
| * State structural diversity with its mechanism for managing it in education * Critique community based schooling from the perspective of diversity * State the need to foster public private partnership in education. * Illustrate multi culture as diversity in education * Identify contemporary challenges of ethnic diversity in educational organization. * Present the holistic model of total quality diversity in education. | **Unit Three: Diversity and Challenges in Organization of Education**  3.1 Structural diversity and mechanism for managing it in education  3.2 Community-based schooling  3.3 Public-private partnership  3.4 Multi culture as diversity  3.5 Contemporary challenges of ethnic diversity  3.6 A holistic model of total quality diversity | **12** |
| * Explain the assimilationist, differentialist and multiculturalist models of diversity management * List out ways of planning for diversity in education | **Unit Four: Models of Diversity Management**  4.1 Assimilationist model  4.2 Differentialist model  4.3 Multiculturalist model  4.4 Planning for diversity in education | **11** |
| * State the causes of low use of technology in diversity management * Suggest ways for increasing access, performance, opportunity and knowledge through technology to manage diversity. | **Unit Five: Technology in Diversity Management**  5.1 Use of technology  5.2 Access  5.3 Performance  5.4 Opportunity  5.5 Knowledge  5.6 Status | **6** |

Note: The number within parenthesis indicates the approximate teaching hours allocated to respective unit.

**Instructional Techniques**: General as well as specific instructional techniques are used while teaching this course.

**4.1 General instructional techniques**: These techniques include lecture preferably with multi-media projector, discussion, and question-answer. While using general instructional techniques, brain storming exercises may be preferable. Most importantly, participatory interactive classroom activities are strongly recommended.

**4.2 Specific instructional techniques**

To promote experiential learning in this course, following specific instructional techniques are recommended for selected units to ensure students’ active participation in teaching-learning process and make the teaching-learning research-oriented.

|  |  |
| --- | --- |
| Units | Specific Instructional Techniques |
| Unit Three: Diversity and Challenges in Organization of Education | **Experiential Exercises**   * Form pairs of students to prepare a comparative picture on structural diversity and mechanism for managing education from diversity perspective. * Let them present the paper in the class and discuss to find out ways of managing diversity in education in Nepal.      * Work out groups of students to study diversity in community based school setting, public private partnership, multi- cultural society, ethnic composition and holistic model of total quality. * Let them prepare brief reports and present them in the class followed by discussion. |
| Unit Five: Technology in Diversity Management | **Experiential Exercises**   * Assign students in groups to draw the concept and use of technological access, performance, opportunity, knowledge and status for diversity in education. * Let them prepare brief reports with the ways of managing diversity through technology and present them in the class. * Let the class discuss after presentation of the report with appropriate feedback. |

**5. Evaluation Scheme**

**5.1 Internal Evaluation 40%**

Internal evaluation will be based on the following criteria:

Oral examination, seminar/workshop/conference presentation, written examination, oral presentation, test, paper/essay, portfolio, continuous assessment

1. Attendance 05 points

2. Participation in learning 05 points

3. First assignment/assessment 10 points

4. Second assignment/assessment (Mid-term test) 10 points

5. Third assessment 10 points

40 points

**5.2 External Evaluation**

External evaluation will be based on the following criteria:

|  |  |  |  |
| --- | --- | --- | --- |
| Nature of questions | Total questions to be asked | Number of questions to be answered | Weight age |
| Multiple choice items | 10 | 1 Mark | 10 Marks |
| Short answer questions | 6 questions | 6x 5Marks | 30 Marks |
| Long answer questions | 2 questions | 2x10 Marks | 20Marks |

**6. References Books**

Banks, J. A. (2006). *Cultural diversity and education: foundations, curriculum and teaching*. Boston, MA: Allyn and Bacon (Unit I to V)

Corson, D. (1998). Changing education for diversity. Buckingham: Open University Press (Unit I to V)

Inglis, C. (2008). *Planning for cultural diversity*. Paris: UNESCO/IIEP (Unit I to V)

Watson, C.W. (2002) Multiculturalism. New Delhi: Viva Books (Unit IV)

Pieter, J. V. (2011).*Diversity Management in Higher Education: A South African Perspective in Comparison to a homogeneous and monomorphous society*. Germany: Centre for Higher Education Development. (Unit II, III and IV)

\_\_\_\_\_ (2004). *Comprehensive diversity management plan*. Washington DC: US nuclear regulatory commission. (Unit I, II and IV)

Caleb, R. (2006). *What do we mean by diversity management?* New Haven: Southern Connecticut State University. (Unit I, III and IV)

**Course Title: English Language Teaching (ELT) Pedagogy and Materials**

Course No. : Eng. Ed.535 Credit Hours: 3

Nature of the course: Theoretical Teaching hours 48

Semester: III

1. **Course Description**

The intent of this course is to expose the students to the theories and practices of English language teaching and help them develop materials to teach English at various levels of education. The course consists of five units. The first unit familiarizes the students with the broader and specific contexts of English language teaching while the second unit presents the overview of the ELT methodology. The third unit deals with the techniques and activities of teaching English language aspects and skills. The fourth unit is about the planning and assessment in ELT while the fifth unit provides the critical perspectives of language education and its pedagogy.

1. **General Objectives**

General objectives of this course are as follows:

1. To familiarize students with the macro and micro contexts of English language teaching.
2. To expose the students to the wide array of ELT methodology that include the approaches, methods, techniques and strategies.
3. To enable the students to teach the language aspects and skills effectively.
4. To help the students plan the course and design classroom tests.
5. To engage the students to have critical perspectives in English language teaching and its practices

**3. Contents in Details**

|  |  |  |
| --- | --- | --- |
| **Specific Objectives** | **Contents** | **Periods** |
| * Explain the contexts of language teaching * Relate English language teaching with the sociolinguistic and political context * Present the overview of the history of language teaching * Discuss the framework for teaching and learning * Implement the principles of learner autonomy in class | **Unit One: English Language Teaching Context**   * 1. Language Teaching   2. The social and sociolinguistic contexts of language learning and teaching   3. The politics and policies of language and language teaching   4. History of language teaching   5. Teaching by principles   6. A framework for teaching and learning      1. Learners and learning, classroom and contexts      2. The communicative classroom      3. Learner autonomy and learner training | **10** |
| * Present the overview of the various approaches of language teaching * Contextualize communicative and task-based language teaching * Use the various techniques of language teaching in class * Identify various learning strategies of students and facilitate them for enhanced learning | **Unit Two: Methodology of English Language Teaching**  2.1 Overview of the following approaches:  2.2.1 Behavioristic approach  2.2.2 Nativist approach  2.2.3 Functional approach  2.2.4 Natural approach  2.2.5 Multiple intelligence  2.2.6 Neuro-linguistics programming  2.2.7 The lexical approach  2.2.8 Content and language integrated teaching  2.2 Communicative language teaching (CLT)   * 1. Task-based language teaching (TBLT)   2.4 The post method pedagogy  2.5 Project-based language teaching  2.6 Techniques  2.6.1 A taxonomy of techniques  2.6.2 Classroom interaction – patterns of classroom interaction, questioning, group work, individualization, pair work, the selection of appropriate activation techniques  2.7 Learning strategies  2.7.1 Learning strategies vs. communication strategies  2.7.2 Types of communication strategies  2.7.3 Good language learners strategies  2.7.4 Types of learning strategies: direct and indirect | **22** |
| * Categorize the aspects and skills of language from pedagogic perspectives * Teach vocabulary and grammar * Identify and address the learners’ errors * Design activities for teaching receptive and productive skills | **Unit Three: Teaching Language Aspects and Skills**  3.1 Teaching vocabulary  3.2 Teaching grammar  3.3 Teaching listening skills  3.4Teaching speaking skills  3.5Teaching reading skills  3.6Teaching writing skills  3.7Error correction | **25** |
| * Plan courses and lessons * Manage classroom interaction in class * Maintain discipline while teaching English * Develop tests and administer them in class * Identify learner differences and address them accordingly | **Unit Four:Planning and Assessing Learning**  4.1 Course design  4.2 The syllabus  4.3 Materials  4.4 Teaching content  4.5 Classroom interaction  4.6 Classroom discipline  4.7 Learner differences  4.2 Classroom assessment | 10 |
| * Describe second language education from multiple perspectives * Discuss identity issue in second language education * Research second language education critically * Critically review the teacher’s role in second language education | **Unit Five: Critical Pedagogy**  5.1 Reconceptualizing second language education  5.2 Challenging identities  5.3 Researching critical practices  5.4 Educating teachers for change | 8 |

1. **Instructional approach**

**4.1 General techniques**

* Lecture and discussion
* Seminar
* Guided study
* Tutorial
* Self study
* Project work

**4.2 Specific Instructional Techniques**

|  |  |  |
| --- | --- | --- |
| **Unit** | **Activity and Instructional Techniques** | **Teaching Hours (48)** |
| **One** | Mini-project (Review of the articles, participate in the discussion, relate their experience) | 10 |
| **Two** | Mini-project (articles and book chapters review followed by classroom presentation) | 10 |
| **Three** | Preparation of the materials to teach language aspects and skills | 10 |
| **Four** | Instructor-guided lesson plan preparation, peer teaching and seminar papers | 8 |
| **Five** | A review (critical) paper | 10 |

1. **Evaluation**

**5.1 Internal Evaluation 40%**

Internal evaluation will be conducted by course teacher based on following activities:

1. Attendance 4 Points
2. Participation in learning activities 6 points
3. First assignment/midterm exam 10 points
4. Second assignment/assessment (1 or two) 10 points
5. Third assignment/assessment 10 points

**Total 40 points**

**Note:**

* First assignment/assessment might be in the form of an assignment or book review or article review or a term paper on specific issue/topic and/or class quizzes depending on the nature of the content.
* Second assignment/assessment might be project work, case study, seminar, survey/field study and individual/group report writing, term paper based on the secondary data or review of literature or documents etc.
* Third assignment/assessment might be mid-term exam + assignment or a term paper on specific issue/topic or unit test according to nature of course.

**5.2 External Evaluation (Final Examination) 60%**

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of the semester.

1. Objective type question (Multiple choice 10 × 1 = 10 points
2. Short answer questions(5 questions × 6 points ) = 30 points
3. Long answer questions (2 questions × 10) = 20 points

**Total 60 points**

1. **Recommended Books and References**

**6.1. Recommended Books:**

1. Brown, H. D. (2001). Teaching by principles. London. Longman. ***(Unit I)***
2. Harmer, J. (2007). The practice of English language teaching. London. Pearson Education Limited. ***(Unit I, II, III, IV)***
3. Hedge, T. (2008). Teaching and learning in the language classroom. Oxford. Oxford University Press. ***(Unit I, IV)***
4. Long, M. H. and Doughty, C. J. (2009). Handbook of English language teaching. Oxford. Wiley-Blackwell.***(Unit I)***
5. Norton, B. and Toohey, K. (Eds.) (2004). Critical pedagogies and language learning. Cambridge. Cambridge University Press. ***(Unit V)***
6. Richards, J.C. &. Rodgers, T.S. (2009). Approaches and methods in language teaching. Cambridge: CUP. ***(Unit II)***
7. Ur, P. (2013). A course in English language teaching. Cambridge. Cambridge University Press.***(Unit III, IV***)

**6.2. References**

1. Beckett, G. H. & Miller, P. C. (2006). Project-based second and foreign language education. Connecticut: Information Age Publishing.
2. Bhatta, T. D. (2012). ELT curriculum, materials and management. Kathmandu. Intellectual Book Palace.
3. Brown, H. D. (1994). Principles of language learning and teaching. London: Prentice Hall.
4. Chambers, A. &Bax, S. (2006). Making CALL work: Towards normalisation. System, 34, 465–479.
5. Cook, V. (2008). Second language learning and language teaching. London: Arnold.
6. Davies, P. &Pearse, E. (2008). Success in English teaching. Oxford: OUP.
7. Ellis, R. (2003). Task-based language learning and teaching. Oxford: OUP.
8. Kumaravadivelu, B. (2001). Toward a post-method pedagogy. TESOL Quarterly, 35/4, 537-560.
9. Levy, M. (2007). Research and technological innovation in CALL. Innovation in Language Learning and Teaching, 1/1, 180-190.
10. McGrath, I. (2002). *Materials Evaluation and Design for Language Teachers*. Edinburgh: Edinburgh University Press. (Unit V)
11. Nunan, D. (1998). Language teaching methodology. New York: Prentice Hall.
12. Nunan, D. (Eds.). (2003). Practical English language teaching. New York: McGraw Hill.
13. Reagan, T. G. & Osborn, T. A. (2002). The Foreign Language Educator in Society: Toward a Critical Pedagogy. London. Lawrence Erlabaum Associates Publishers.
14. Richards, J. C. &Renandya, W. A. (2003). Methodology in language teaching. Cambridge. CUP.
15. Scrivener, J. (2005). Learning teaching. Oxford: Heinemann.
16. Underwood, M. (1989). Teaching listening. London: Longman.
17. Waters, A. (2009). Managing innovation in English language education. Language Teaching, 42:4, 421–458. (Unit IV)
18. Woodward, T. (2001). Planning lessons and courses. Cambridge: CUP.

**Course title: Readings in Literary Genres**

Course No.: 536 Nature of the course: Theoretical

Level: M.Ed. Credit Hours: 3

Semester: III Teaching Hours: 48 hrs

**1. Course Description**

Readings in Literary Genres is an advanced literature-based course which builds on Readings in English Part-I (Eng Ed 517) of the second semester. This course follows the genre-based classification of literature and its analysis and interpretation from different critical perspectives. Units from first to fifth comprise long fictions, short fictions, poetry, prose and dramas, whereas the last unit entails major schools of literary criticisms. The course offers some carefully selected fiction and non-fiction writings in English that enrich students with critical insights in varieties of the English language, its cultures, and that motive them in creative writing.

**2. General Objectives**

The course exposes students to literary writings in English and is motivated by the twin goals of reading and writing. The general objectives of the course are as follows

* To orient students to English literary world through the sampled literary masterpieces
* To develop students' skills in reading and interpreting literary texts
* To develop their skills in responding to the texts through the lenses of literary criticisms and express their observations in writing.
* To help them produce their own creative writings in different genres.
* To help them apply critical and creative insights from literature in English language teaching.

**3. Contents Outlines:**

|  |  |  |
| --- | --- | --- |
| **Specific Objectives** | **Contents** | **Teaching Hours (48)** |
| * Read and summarize the novels * Trace the western history of knowledge * Distinguish between fact and fiction in the literary work * Critically appreciate the novels in terms of their plots, themes, settings and characters. * Compare and contrast between techniques of different writers * Apply the relevant literary criticism to analyze the novels * Present their reflection on the novels through writing * Write reviews for the novels * Select extracts from the novels and develop teaching learning activities for their studies | **Unit 1:**  **Readings in Long Fiction**   1. The Sorrows of Young Werther – *Johann Wolfgang von Goethe* 2. Sophie’s World – *Jostein Gaarder* 3. Alice’s Adventure in the Wonderland – *Lewis Carroll* 4. To Kill a Mockingbird – *Harper Lee* | **10 hrs** |
| * Read and summarize the story * To analyze the stories in terms of plot, theme, setting and characters * Apply the relevant literary theories to interpret the stories * Write short stories drawing on their own experiences * Select the stories or extracts and develop teaching learning activities for their students | **Unit 2:**  **Readings in Short Fiction**   1. My First Goose – *Isaac Babel* 2. The Lottery in Babylon – *Jorge Luis Borges* 3. Martha – *Khalil Gibran* 4. The Lady in the Looking-Glass: A Reflection – *Adeline Virginia Woolf* 5. The Feathered Orge – *Italo Calvino* 6. A Very Old Man with Enormous Wings – *Gabriel Garcia Marquez* 7. Everything That Rises Must Converge – *Flannery O’Conner* 8. The Cask of Amontillado – *Edgar Allan Poe* 9. Lullaby – *Leslie Marmon Silko* 10. The Chrysanthemums – *John Steinbeck* 11. The Enemy – *V.S. Naipaul* 12. Vanka – *Anton Chekhov* 13. The Garden Party – *Katherine Mansfield* 14. The Whale – *Witi Ihimaera* 15. Five Fingers – *Lee Kok Liang* 16. Myself in India – *Ruth Prawer Jhabvala* 17. August, 2026: There Will Come Soft Rains – *Ray Bradbury* 18. The Father – *Bjornsterne Bjornsen* 19. Lost Forests – *Johannes v. Jensen* | **9 hrs** |
| * Read and summarize the poem * To interpret the poems in terms of literary devices * Apply relevant literary theories to critically appreciate the poems * To select the poems and develop teaching learning activities for their studies | **Unit 3:**  **Readings in Poetry**   1. The Garden of Love – *William Blake* 2. A Red Red Rose – *Robert Burns* 3. I Wandered Lonely as a Cloud – *William Wordsworth* 4. I had No Time to Hate, Because – *Emily Dickinson* 5. The Second Coming – *William Butler Yeats* 6. Landscape with the Fall of Icarus – *William Carlos Williams* 7. Mek Four – *John Agard* 8. An Introduction – *Kamala Suraiyya* 9. Letter from Mama Dot – *Fred D’Aguiar* 10. The Fisherman Mourned by His Wife – *Patrick Fernando* 11. Phenomenal Woman – *Maya Angelou* 12. Atman – *Robert Goslin* 13. Children – *Khalil Gibran* 14. To Autumn – *John Keats* 15. Certainty – *Octavio Paz* 16. Sonnet No. 5 – *Laxmi Prasad Devkota* 17. Visiting a Country Churchyard – *Gopi Sapkota* | **9 hrs** |
| * Read and summarize the dramas * To analyze the drama from the perspective of performance * To distinguish between readability and playability of the drama * To analyze the dramas in terms of their key elements: dialogues, setting, characters, plots and themes. * To apply the relevant literary theories to critically analyze the dramas * To produce their own drama drawing on their own experiences or based on the stories they have read | **Unit 4:**  **Readings in Drama**   1. The Rising of the Moon – *Lady Gregory* 2. The Cherry Orchard – *Anton Chekhov* 3. The Glass Menagerie – *Tennessee Williams* | **8 hrs** |
| * Summarize the interviews * Rewrite some portions of the interviews in the form of narrative description * Compare and contrast between different writers in terms of their views on creative writing and writing styles. * Develop interview questions and interview the Nepalese writers | **Unit 5:**  **Face-to-face with writers at work**   1. Jorge Luis Borges – *Ronald Christ* 2. Simone de Beauvior – *Madeleine Gobeil* 3. Boris Pasternak – *Olga Carlisle* 4. V.S. Naipaul – *Jonathan Rosen, Tarun Tejpal* 5. Haruki Murakami – *John Wray* 6. William Faulkner – *Jean Stein* | **4 hrs** |
| * Summarize each literary criticism * Compare and contrast between the literary theories in terms of their views on language, creativity, society and culture, and reader-writer relation. * To apply the literary theories to critically appreciate the given literary texts. | **Unit 6:**  **Essays**   1. Why I Write – *George Orwell* 2. With an Imaginary Tourist – *Jamaica Kincaid* 3. He Who Devoted His Whole Life – *Bal Ram Adhikari (Trans.)* 4. Enduring the Disastrous Moments of a Great Havoc – *GR Bhattarai* | **4 hrs** |
|  | **Unit-7:**  **Literary Criticisms and their application**   1. New Criticism 2. Russian Formalism and the Bakhtin School 3. Reader-oriented theories 4. Structuralist theories 5. Marxist theories 6. Feminist theories 7. Poststructuralist theories 8. Postmodernist theories 9. Postcolonial theories 10. Post-theory text | **4 hrs** |

**4. Instructional Approaches:**

**4.1 General Instructional Techniques**

* Lecture and discussion
* Book Discussion Club (Single-title discussion, multi-titles discussion)
* Book Reading Club
* Online Clubs in Social Networks (e.g. Facebook Club, Yahoo Club, Blogs)
* Read, discuss, write and share (ReDWis)
* Demonstration
* Explanation and illustration
* Instructor-guided self-study

**4.2** **Specific Instructional Techniques**

|  |  |  |
| --- | --- | --- |
| **Unit** | **Activities and Instructional Techniques** | **Teaching Hours (48)** |
| Unit One | Project Work on Writers and Their Writings, Critical Appreciation, Book Review | 10 |
| Unit Two | Critical, Reflective and Creative Writing | 9 |
| Unit Three | Reflective Creative Writing | 9 |
| Unit Four | Argumentation | 8 |
| Unit Five | Mini-survey and Document Analysis | 4 |
| Unit Six | Writing Reminiscences and Memoirs | 4 |
| Unit Seven | Argumentation | 4 |

**5. Evaluation:**

**5.1 Internal Evaluation 30%**

Internal evaluation will be conducted by course teacher based on following activities:

1. Attendance 4 Points
2. Participation in learning activities 6 points
3. First assignment/midterm exam 10 points
4. Second assignment/assessment (1 or two) 10 points

**Total 30 points**

Note: First assignment/assessment might be mid-term exam + assignment or book review or article review or first term paper on specific issue/topic, midterm exam or unit test and quiz etc. according to nature of curse. Second assignment/assessment might be project work, case study, seminar, survey/field study and individual/group report writing, term paper based on secondary data or review of literature or documents etc.

First and second assignment/assessment may include one or two types of assessment. For instance, one home assignment/book/article review + midterm exam or only mid-term exam. In the second assessment may include only one project work/term paper or two type of assignment according to nature of the course.

**5.2 External Evaluation (Final Examination) 70%**

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of the semester.

Objective type question (multiple choice 11 × 1) = 11 points

Short answer questions (5 questions × 7 points) = 35 points

Long answer questions (2 questions × 12) = 24 points

**Total 70 points**

1. **Recommended books and reading materials**

Prescribed book **Critical Reading Texts** *Compiled and Edited by G R Bhattarai, Anju Giri, Anjana Bhattarai, Bal Ram Adhikari, 2015*

Charters, A. (1995). *The Story and its Writer (*4th ed.). Boston: Bedford Books.

[Ferguson](http://books.wwnorton.com/books/Author.aspx?id=10358), M. [Salter](http://books.wwnorton.com/books/Author.aspx?id=10359), M. J. & [Stallworthy](http://books.wwnorton.com/books/Author.aspx?id=10024), J. (2005) *The Norton Anthology of Poetry* (shorter, 5th ed.)

Jacobbus, L.A (2001). *The Bedford Introduction to Drama* (4th ed.). New York: Bedford/St. Martin

Paris Interview (Different issues). http://www.theparisreview.org/interviews/

Seldan, R. (1988). *The Theory of Criticism: A Reader*. London: Longman

\* \* \*

**Course Title**: **Dimensions of Teacher Development**

**Course No**: Eng. 537 **Nature of the course**: Theoretical

**Level:** M. Ed. **Teaching Hours:** 48

**Semester**: Third **Credit Hours**: 3

1. **Course Description**

‘Dimensions of Teacher Development’ is a course beyond methodology and it covers the key concepts of English language teaching as a professional and various dynamics of teacher development. It addresses the fundamentals of teacher development such as beliefs, maxims and identities. It also discusses the teacher learning theories, their features and their applications to English language teaching. The course makes an attempt to empower the students to operationalize various teacher learning models and approaches. It also enables them to design and deliver training sessions. Thus, the course aims at producing professionally competent English language teachers and trainers.

1. **General Objectives**

General objectives of this course are as follows:

1. To make students familiar with the basic concept of English teaching and teacher development;
2. To acquaint them with the fundamentals of teacher development;
3. To help the students link various learning theories with ELT teaching situations;
4. To provide students with the concept and skill in using the various teacher learning models, approaches and teachers’ roles;
5. To enable the students design and deliver training sessions
6. **Specific Objectives and Course Contents**

|  |  |
| --- | --- |
| **Specific Objectives** | **Contents** |
| * Present the basic concept of teaching profession, language teaching and language teacher development * Discuss the characteristics and perspectives of teacher development * Explain the scope of teacher development * Analyze the teacher career cycle * Review the English teachers’ development in Nepal | **Unit One: Conceptualizing teacher development (14)**   * 1. Teacher learning and teaching as a profession   2. English language teaching and teacher development   3. Characteristics and perspectives of teacher development   4. Scope of teacher development      1. Pre-Service teacher education      2. Teacher induction      3. In-service teacher education and trainings      4. Experiential learning      5. Self-initiated learning   5. Teacher career cycle (Huberman, DreyFus and DreyFus)   6. Historical sketch of English teacher development in Nepal |
| * Define the teachers’ beliefs, maxims and identities * Present the types of teacher maxims and their implications in language teacher education * Overview the concept and sources of teacher belief * Analyze the teacher identity formation process | **Unit Two: Fundamentals of Teacher Development (6)**  2.1 Teacher’s beliefs, their sources and belief about English language, learning, teaching, programs and curriculum and language teaching as a profession  2.2 Teachers’ maxims, their types and implication to ELT  2.3 Reconstructing teacher identities after their initial teacher education |
| * Differentiate adult learning from child learning * Discuss various theories of adult learning * Relate psychological theories with learning | **Unit Three: Learning Theories and their Implications in ELT (9)**   * 1. Difference between adult learning and child learning   2. Adult learning theories      1. Maslow’s theory of motivation      2. Rogers’s non-directive intervention      3. Gagne’s conditions of learning      4. Deway’s reflective thinking      5. Kolb’s experiential learning      6. Knowles’s principles of andragogy      7. Hase and Kenyon’s heutagogy      8. Difference between pedagogy, andragogy and heutagogy   3. Psychological theories of learning      1. Behaviorism/ Mechanistic Theory      2. Humanism      3. Cognitive constructivism      4. Social constructivism/ socio-cultural perspective (Their Concept, features, implications to language teaching and criticisms) |
| * Analyze the various models, approaches and roles of teachers * Prepare the portfolio collecting various practical work on journal writing, project work, action research, critical incidents analysis, feedback giving and receiving, etc. * Explain teachers’ roles while applying teacher development models and approaches. | **Unit Four: Teacher Development Models, Approaches and Teacher’s Roles (9)**  4.1 Craft, Applied Science, Reflective models and the Dynamic Interactions between providers, teachers, tasks and contexts  4.2 Teacher development approaches: workshops, seminars, journal writing, teacher support group, cases and critical incidents analysis, action research, mentoring, classroom observation, supervision, portfolio collection, etc.  4.3 Teachers’ roles: Passive Technicians, transformative intellectuals and reflective practitioners. |
| * Design a framework for training * Work in groups for training * Explain the practical process of training session * Discuss and use the ways of feedback, assessment and evaluation in teacher training * Provide feedback in training | **Unit Five: Trainers’ development (10)**  5.1 A framework for training  5.2 Working with groups in training  5.3 Working with participants’ experience  5.4 New and shared experiences in training  5.5 Creating meaning: New learning  5.6 Planning for action   * 1. Feedback, assessment and evaluation in training |

1. **Instructional approach**
   1. **General techniques**

* Lecture and discussion
* Group, pair and individual work
* Self study
* Presentation
  1. **Specific Instructional Techniques**

|  |  |
| --- | --- |
| **Unit** | **Activity and Instructional Techniques** |
| Unit One | Individual reflection and narrative writing |
| Unit Two | Pair and group discussion on teacher development issues, beliefs etc. |
| Unit Three | Pair work and small group discussion on the review and analysis the models and theories |
| Unit Four | Portfolio collection and individual assignment |
| Unit Five | Individual assignment on training session design |

1. **Evaluation**

**5.1 Internal Evaluation 40%**

Internal evaluation will be conducted by course teacher based on following activities:

1. Attendance 5 Points
2. Participation in learning activities 5 points
3. First assignment/midterm exam 10 points
4. Second assignment/assessment (1 or two) 10 points
5. Third assignment/assessment 10 points

**Total 40 points**

**Note:**

* First assignment/assessment might be in the form of an assignment or book review or article review or a term paper on specific issue/topic and/or class quizzes depending on the nature of the content.
* Second assignment/assessment might be project work, case study, seminar, survey/field study and individual/group report writing, term paper based on the secondary data or review of literature or documents etc.
* Third assignment/assessment might be mid-term exam + assignment or a term paper on specific issue/topic or unit test according to nature of course.

**5.2 External Evaluation (Final Examination) 60%**

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of the semester.

1. Objective type question (Multiple choice 10 × 1 = 10 points
2. Short answer questions(6 questions × 5 points ) = 30 points
3. Long answer question (2 questions × 10 points) = 20 points

**Total 60 points**

1. **Recommended books and References**

**6.1. Recommended books**

Awasthi, J.R. (2009). Teacher education with special reference to English language teaching in Nepal. In S. Manshoor, N. Hussain, A. Sikandar& N. Ahsan (Eds.). *Emerging issues in TEFL: Challenges for South Asia*. USA: Oxford University Press. (Unit 1)

Burns, A. & Richards, J.C (Eds.). (2009). *The Cambridge guide to second language teacher education*. Cambridge: CUP. (Units 1, 2, 3, 4)

Diaz-Maggioli, G. (2004). Teacher-centered professional development. Alexandria: ASCD. (Unit 1)

Head, K & Taylor, P. (1997). *Readings in teacher development*. Oxford: Heinemann ELT. (Units 1, 2, 3, 4)

Richards, J. & Farrell, T.S.C. (2008). *Professional development for language teachers*. Cambridge: CUP. (Units 1, 4)

Richards, J.C. & Lockhart, C. (2005). *Reflective teaching in second language classroom*. Cambridge: CUP. (Unit 2)

Roberts, J. (1998). *Language teacher education*. London: Arnold. (Unit 3)

Tickle, L. (2000). *Teacher induction: The way ahead*. UK: Open University Press. (Unit 1)

Villegas-Reimers, E. (2003). Teacher professional development: An international review of the literature. Paris: UNESCO (Unit 1)

Wallace, M.J. (2001). *Training foreign language teachers*. Cambridge: CUP. (Unit 4, 5)

Wright, T & Bolitho, r. (2007). *Trainer development*. London: [www.lulu.com](http://www.lulu.com). (Unit 5)

* 1. **References**

Cohen, L., Manion, L. & morrisan, K. (2008). *A guide to teaching practice*. London: Routledge Falmer.

Day, C. (1999). *Developing teachers: The challenges of lifelong learning*. London and Philadelphia: Falmer Press.

Day, C (2005). *A passion for teaching*. London/New York: Routledge Falmer.

Kumaravadivelu, B. (2003). *Beyond method: Macrostrategies for language teaching*. NewHaven, Co. Yale University Press.

Parrott, M. (1997). *Tasks for language teachers*. Cambridge: CUP.

Randall M. with Thornton, B. (2001). *Advising and supporting Teachers*. Cambridge: Cambridge University Press.

Rijal, R. (2014). *Constructivist perspective on teacher development*. Kathmandu: Subhakamana Publication, Pvt. Ltd.

Tsui, A.B.M. (2003). *Understanding expertise in teaching: Case studies of second language teachers*. Cambridge: CUP.

William, M. & Burden, R.L. (1997). *Psychology for language teachers*. Cambridge CUP.

Course Title: **ESL Research and Testing**

Nature of Course: Theoretical

Code No.: Eng Ed. Credit Hours: 3

Semester: Third Teaching Hour: 48

**1. Course Description**

This course is divided into two sections: Research and Testing in ESL. The first section presents glimpse (what, why and how) of different research designs in ESL. It aims at providing the students with overall understanding of research works in general, and the specific research activities carried out in English language teaching and learning in particular. This section is divided into two units. The first unit focuses on developing theoretical perspective of different research designs. For this different research articles will be used as resources. The second unit emphasizes the application of different research designs discussed in the first unit. For this the students are required to produce a research article by using one of the designs discussed in the first unit. The second section, language testing, aims at providing theoretical knowledge on language testing, and skills and abilities for developing and using the English language tests for assessing and reporting students’ achievement and proficiency in the English language. They discuss the current status of language testing followed by the theoretical aspects. The units from three to five deal with the practical aspects of language testing offering students the procedures for using language tests for enhanced teaching and learning of the English language.

**2. General Course Objectives**

The general objectives of the course are as follows:

* To acquaint the students with the basic concepts of different research designs.
* To enable the students to apply different research designs in the field of ELT.
* To enhance students’ ability to understand the quality of language tests.
* To enable the students to design various types of tests to assess language skills and aspects.
* To expose them to the analysis, interpretation and use of the information generated through testing with a view to enhance their testing skills and abilities.

**3. Specific Objectives and Contents**

|  |  |
| --- | --- |
| **Specific Objectives** | **Contents** |
| * To enable the students to conceptualize research problems, aims and methodology of different research designs. | Unit One: Research in ESL 1.1 Theory of Research designs  1.1.1 Action research  1.1.2 Auto-ethnographic research  1.1.3 Case study research  1.1.4 Correlational research  1.1.5 Ethnographic research  1.1.6 Experimental research  1.1.7 Historical research  1.1.8 Narrative inquiry  1.1.9 Survey research |
| * To make students able to prepare a research proposal in any of the research design of their choice. * To enable the students to write a research article based on the research they conducted. | **Unit 2: Application of research designs**  2.1 Preparing a research proposal based on the format  2.1.1 Beginning the research proposal   * Selecting the topic (introduction) * Deciding the background of the study * Stating the research problem * Specifying the objectives * Postulating research questions * Presenting significance of the study * Delimiting the study * Identifying key terms and defining them   2.1.2. Developing literature review and conceptual framework   * Reviewing theoretical literature * Reviewing empirical literature * Drawing implications of the reviewed literature * Developing conceptual framework   2.1.3 Identifying methods and procedures of the study   * Selecting design and methods of the study * Identifying population, sample and sampling strategy * Deciding on study area/field * Selecting data collection tools and techniques * Describing data collection procedures * Presenting data analysis and interpretation procedures   2.1.4. Mentioning process of data analysis and interpretation  2.1.5. Presenting conclusion deriving process and process of recommendation  2.1.6. Citing and referencing the consulted sources on the basis of APA format  2.1.7 Appending tools, lesson plans, graphs and charts.  2.1.8 Drafting, editing, proof-reading, rewriting and finalizing proposal  2.2 Writing a research article   * Conducting a mini-research within a group * Preparing a research article on the basis of the mini-research and following the design of the articles they reviewed |
| * To distinguish language teaching from language testing. * To define various tests and talk about their effects, also correlate their practicality, reliability and validity * Discuss the current issues in language testing. | **Unit Three: Introduction to language testing**  3.1 Testing and teaching  3.2 Why test, characteristics and types  3.3 Testing language skills  3.4 Testing language elements  3.5 Problems of sampling  3.6 Washback, the washback hypothesis  3.7 Practicability, reliability and validity  3.8 Current Issues in Classroom Testing   * New views on intelligence * Traditional and alternative assessment * Computer based testing |
| * To assess the language tests in terms of reliability, validity, practicality and their usefulness * To design and construct a test. | **Unit Four: Basic considerations in test design**  4.1 The concept of validity   * Construct validity * Content validity * Face validity * Washback validity * Criterion related validly * How should a test be known?   4.2 The concept of reliability  4.3 Validity reliability – an inevitable tension?  4.4 Test efficiency  4.5 Designing a test  4.6 The construction of a proper test |
| * To design tests for testing various language skills. * To analyse test items and test their reliability and validity | **Unit Five: Test methods**  5.1 Testing language comprehension  5.1.1 Testing reading comprehension   * Multiple Choice questions (MCQ’s) * Short answer questions * Cloze   5.1.2 Testing listening Comprehension   * Testing extensive listening skills * Phoneme discrimination tests * Tests of stress and intonation   5.1.3 Testing Writing   * Indirect methods for assessing linguistic competence * The direct methods of writing * Analytical and general impression marking * Holistic scoring * Further considerations in designing writing tasks for inclusion in a test battery   5.1.4 Testing Speaking   * Verbal Essay * Oral Presentation * The free interview * Role Play * The training and standardization of oral examiners   5.2 Item analysis, test validity and reliability |

**4. Instructional approach**

**4.1 General Techniques**

* Lecture and discussion
* Reading, discussing, writing and sharing
* Demonstration
* Explanation and illustration
* Self-study

**4.2 Specific Instructional Techniques**

|  |  |
| --- | --- |
| Unit | Activities and Instructional Techniques |
| Unit One | * Reading, discussion and reflective writing * Teacher's presentation of review of one article of each design in terms of objectives, design, methodology and findings. * Students' group discussion and presentation of one or two articles of each design in terms of objectives, design, methodology and findings |
| Unit Two | * Students write research proposal on the basis of teachers instruction * Students conduct a mini-research and write a research article utilizing the data they collected. * Group discussion and classroom presentation, reflective writing |
| Unit Three | Self-study, instructor-guided-reading, discussion, comparison and presentation  (Different articles are prescribed for each of these sub-units, and teaching should be based on them.) |
| Unit Four | Individual/pair/ group work: Sample Texts and Presentation of findings,  Project work: The students will apply varieties of texts as practical activities  (Different articles are prescribed for each of these subunits, and teaching should be based on them) |

**5. Evaluation**

**5.1 Internal Evaluation 40%**

Internal evaluation will be conducted by course teacher based on following activities:

1. Attendance 4 Points
2. Participation in learning activities 6 points
3. First assignment/midterm exam 10 points
4. Second assignment/assessment (1 or two) 10 points
5. Second assignment/assessment (1 or two) 10 points

Total 40 points

**5.2 External Evaluation (Final Examination) 60%**

Examination Section, Office of the Dean, Faculty of Education will conduct final examination at the end of the semester.

1. Objective type question (Multiple choice 10 × 1) = 10 points
2. Short answer questions(5 questions × 6 points ) = 30 points
3. Long answer questions (2 questions × 10) = 20 points
4. Total 60 points

**6. Sample Assignments**

*Assignment 1*: Preparing a research proposal using any of the designs they studied.

*Assignment 2:* Writing a research article on the basis of the research they conducted. (Minimum 2000 words)

**7. Prescribed Articles/Books**

**Selected Research Articles**

**Action Research**

Bruke, B.M. (2013). Experiental professional development: A model for meaningful and long-lasting change in classrooms. *Journal of experiential education.* Vol. 36 (3). pp. 247-263

Mohar, K.A.J. (20 04 ). English as an accelerated language: A call to action for readers. *The reading teacher* Vol. 58(1).

Schoen, S.F. & Schoen, A.A. (2003). Action research in the classroom. *Teaching exceptional children.* Vol. 35(3). pp. 16-21.

**Autoethnographic**

Polanco. M. (2011). Autoethnographic means to the end of decolonizing translation. *Journal of systemic therapies*, Vol. 30(3), pp. 42–56

Tomaselli, K.G. (2013). Visualizing different kinds of writing: Auto-ethnography. Social science. *Visual anthropology*, Vol-26, pp.165–180,

**Case Study**

Choi, Jin-Sook (2013) Language ideology as an intervening process in language shift: The case of bilingual education in Guatemala. *Asian journal of Latin American studies.* Vol. 26(3), pp. 55-73.

Lei, L. & Huang, C (2012). Learning English through musicals: A case study of social economically disadvantaged aboriginal students in eastern Taiwan. *International journal of humanities and arts computing* Vol.6(1–2), pp.204–210

Wong, C. (2012). A case study of college level second language teachers' perceptions and implementations of communicative language teaching.  *The professional educator,* Vol-36 (2).

**Correlational**

Ali, I., Rajpoot, R. , Shah, S.M.H & Jabeen, M. (2011). Correlational study of the relationship between age and basic literacy skills of adult learners. *International journal of academic research.*  Vol. 3(6).

Baltaci, H.S. & Demir, K. (2012). Pre-service classroom teachers emotional intelligence and anger expression styles. *Educational sciences: Theory and practice.* Vol. 12(4).

Schappe, J.F. (2005). Early childhood assessment: A correlational study of the relationships among student performance, student feelings and teacher perceptions. *Early childhood educational journal,*  Vol.(3).

**Ethnographic**

Anderson, F.E. (2000). Language development in social context: Ethnographic, sociohistorical and biological perspectives. *Reviews in anthropology.*  Vol. 28, pp.289-308.

Foley, W.A (2011). Gender and language in ethnographic and evolutionary perspectives. *Reviews in anthropology.*  Vol.40. pp.82-106.

Jackson, J. (2004). Language and cultural immersion: An ethnographic case study. *Regional language centre journal.* Vol.35(3).

**Experimental**

Altay,M. & Tilfarlioglu, F.Y. (2012). Building up a learner corpus through creative non fiction prose: An experiment research. *Electronic journal of social sciences.*  Vol. 11(39).

Legg, R. (2009). Using music to accelerate language learning: An experimental study. *Research in education.* Vol.82 (1). pp.1-12.

Shapiro, M.B. (2010). Using Bad undergraduate research to foster good attitudes. *College teaching.*  Vol. 58, pp. 47-51.

**Historical**

Henning, D. (1993). Foreign-language teaching in the Baltic Republics in the past and present. *Padagogik und Schule in Ost und West* Vo.1(1), pp. 27-33.

Ter-Minasova, S.G. ( 2005). Traditions and innovations: English language teaching in Russia. *World Englishes.*  Vol. 24, No. 4, pp. 445-454.

Yaguchi, M. (2010). The historical development of the pharse there's: An analysis of the Oxford English dictionary data. *English studies.*  Vol. 91, (2), pp. 203-224.

Yasien, M. (1998). Teaching Arabic in South Africa: Historical and pedagogical trends.  *Journal of Muslim minority affairs*, Vol. 18(2).

**Narrative Inquiry**

Baden, M. & Niekerk, L.V. (2007). Narrative inquiry: Theory and practice. *Journal of geography in higher education,* Vol. 31(3), pp.459–472.

Ellen, L. (2001) Narrative interviews: An approach to studying teaching and learning in English classrooms. *High school journal.* Vol. 84(3).

Rushton, S.P. (2004). Using narrative inquiry to understand a student-teachers' practical knowledge while teaching in a inner school. As in *The urban review.* Vol. 36.(1).

Tammy, F. (2010). English-major community College Presidents: A Narrative inquiry.  *Community college review*, Vol. 37(3).

**Survey**

Caries,S. Almeida,L. & Vieira,D. (2012). Becoming a teacher: Student teachers' experiences and perceptions about teaching practice, *European journal of teacher education.* Vol.35 (2). pp.163-178.

Davari, H. Iranmehr, A. Erfani, S.M. (2012). A survey on the Inranian ELT community's attitudes to critical pedagogy. *English language teaching.*  Vol.5(2).

Lin, A.M. (1999).Doing English lessons in the reproduction or transformation of social worlds?. *TESOL quarterly.* Vol. 33 (3).

**Prescribed Books**

Cohen, L., Manion, L. & Morrison, K. (2011). *Research methods in education (7th edition)*. London: Routledge. ( Unit I &II)

Johnson, D.M. (1992). *Approaches to research in second language acquisition*. London: Longman. (Unit I &II)

Larsen-Freeman, D. and Long, M. (1991) *An introduction to second language acquisition research.* London: Longman. (Unit I &II)

Nunan, D. (2008). *Research methods in language learning.* Cambridge: Cambridge University Press. (Unit I &II)

Brown, H. Douglas (2004). *Language assessment*: *Principles and classroom practices*. White Plains, NY: Pearson Education. 324 pp.

Castillo, J. & Rodríguez, A. (2012). Construction of a proper test - SlideShare [www.slideshare.net/ReijiNakashi/the-construction-of-a-test-3](http://www.slideshare.net/ReijiNakashi/the-construction-of-a-test-3)

Cohen, L., Manion, L. & Morrison, K. (2010). *Research methods in education (6th edition)*. London: Routledge. ( Unit I &II)

Fulcher, G. & Davidson, F. (2007). Language testing and assessment

Fulcher, G. and Davidson, F. (2007). *Language Testing and Assessment*. London & New York: Routledge.

Harris, D.P. (1969). *Testing English as a second language*. N.Y., McGraw-Hill.

Heaton, J.B. (1975). Writing English language tests, Longman group limited, London

Johnson, D.M. (1992). *Approaches to research in second language acquisition*. London: Longman. (Unit I &II)

Larsen-Freeman, D. and Long, M. (1991) *An introduction to second language acquisition research.* London: Longman. (Unit I &II)

Nunan, D. (2008). *Research methods in language learning.* Cambridge: Cambridge University Press. (Unit I &II)

Sharma, A.K. (2001). *Teaching and testing English grammar*. New Delhi: Bahri Publications.

Weir, C.J. (1990). Communicative language testing, Prentice Hall

**8. References**

American Psychological Association. (2010). *Publication manual of the American Psychological Association (6th ed.)*. Washington, DC: APA.

Best, J.W & Kahn, J.V. (2009**).** *Research in education (10th Edition).* New Delhi: Prentice-Hall of India.

Blakeslee, A. & Fleischer, C. (2007). *Becoming a writing research*. London: Lawrence Erlbaum Associates, Publishers.

Brown, J.D & Rodgers, T. (2000). *Doing second language research.* Oxford: Oxford University Press.

Burns, A. (1999). *Collaborative action research for English language teachers*. Cambridge: CUP.

Burns, R.B. (1997). *Introduction to research methods*. London: Longman.

Dornei, Z. (2007). *Research methods in applied linguistics*. Oxford: OUP.

Flowerdew, J. & Peacock, M. (2001). *Research perspectives in English for academic purposes*. Cambridge : CUP

Hatch, E & Lazaraton, H. (1982). *Research design and statistics for applied linguistics*. Rowley Mass: Newbury House.

Krashen, S. & Scarcella, R. (1980). *Research in second language acquisition*. Rowley Mass : Newbury House.

Kumar, R. (2005). *Research methodology*. India: Porling Kindersley.

McDonough, J. & McDonough, S. (2008). *Research methods for English language teachers.* London: Hodder Arnold. (All units)

Mckay, A & Gass, S.M. (2005). *Second language research.* New Jersey: Lawrence Erlbaum Associates.

Mckay, S.L. (2006). *Researching second language classrooms.*New Jersey: Lawrence Erlbaum Associates.

Norton, L.S. (2009). *Action research in teaching and learning*. London: Routledge.

Patton, M. Q. (2002). *Quantitative research and evaluation methods.* New Delhi: Sage Publications.

Seliger, H. W. & Shohamy, E. (1999). *Second language research methods*. Oxford: Oxford University Press.

Wallace, M. (2000). *Action research for language teachers.* Cambridge: Cambridge University Press.

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Course Title: **Teaching Geography**

Course No: Geo. Ed.535 Nature of course: Theory and Practical

Level: M.Ed. Credit hours: 3

Semester: Third Teaching hours: 32 + 48 (80)

1. **Course Description**

This course has been designed to provide theoretical and applied knowledge of teaching geography to the prospective teachers. It intends to familiarize them with methods, strategies, techniques and skills essential for teaching geography education at higher level. The course also includes practical aspect. Thirty three percent of the weightage has been given to practical aspect. Of the total teaching hours 32 are allotted to the theoretical aspect whereas 48 are allotted to the practical aspect.

1. **General objectives of the course**

The general objectives of this course are as follows:

* Familiarize students about the changing nature of geography education.
* Enable students to understand necessary steps for developing geography curriculum and develop a model curriculum in the context of Nepal.
* Enable students on using textbooks and reference materials in geography teaching.
* Acquaint students about methods, approaches and techniques of teaching geography and apply them in teaching.
* Enable students to make plans for teaching geography by using various types of test items for evaluating geographical knowledge and skills.
* Acquaint students abou trends in geographical research, components of research proposal, theoretical framework in research and report writing.

1. **Course Outlines**

|  |  |
| --- | --- |
| **Specific Objectives** | **Contents** |
| * Describe geography as a physical, social and spatial science. * Explain the changing nature and trends in geography education. * Discuss fundamental themes and skills in geography education. * Identify major concepts of geography education and make generalizations from them. | **Unit I Nature and scope of geography education (6)**   * 1. Geography as a physical, social and spatial science   2. Changing nature and trends in geography education   3. Fundamental themes and skills in geography education   4. Aims and objectives of geography education   5. Concepts and generalizations in education |
| * Develop idea about the taxonomy of objectives essential for developing curriculum.   + Identify necessary steps for developing geography curriculum   + Study analytically university level geography curricula. | **Unit II: Curriculum of Geography Education (8)**   * 1. Taxonomy of objectives   2. Necessary steps for developing curriculum   3. Analytical study of geography curriculum and its presentation |
| * + Identify the major qualities/criteria for a good geography textbook.   + Use textbooks and reference materials in learning geographic knowledge and skills.   + Review geography textbooks and reference books assigned. | **Unit III: Use of Textbooks and Reference materials in geography Teaching (4)**   * 1. Qualities/criteria for a good geography textbook   2. Use of textbooks and reference materials in learning geographic knowledge and skills   3. Review of geography textbook/reference books |
| * + Describe methods, approaches and techniques of teaching geography and apply them in teaching.   + Use open resources, digital and hard copy materials in teaching geography lessons. | **Unit IV: Methods, strategies and Techniques used in Teaching Geography (9)**   * 1. Methods, strategies and techniques in teaching geography education: Lecture, observation, discussion, inquiry, problem solving and case study   2. Methods, strategies and techniques used in teaching various branches of geography   3. Use of open resources, digital and hard copy materials in teaching geography lessons |
| * + Provide knowledge aboutg various plans for teaching geography.   + Give ideas about various types of test items for evaluating geographical knowledge and skills.   + Provide knowledge about observation sheet, specification grid and marking scheme.   + Give ideas on use test items for measuring students’ skills and attitude on geographical issues.   + Discuss trends in geographical research, components of research proposal, theoretical framework in research and report writing and preparing research papers | **Unit V: Planning for Teaching and Evaluating Geographic Knowledge and Skills (5)**  5.1 Planning : Work plan, unit plan and lesson plan   * 1. Evaluation in Geography Teaching      1. Subjective questions - Long answer and short answer      2. Objective questions: multiple choice      3. Observation sheet (rating scale, check list)      4. Preparation of test items to measure students’ skills and attitude on geographical issues.      5. Specification grid and marking scheme      6. Trends in geographical research |

**Practical Work**

***Part I1: Practical 33 percent***

***48 teaching hours***

|  |  |
| --- | --- |
| * + Make a comparative study of geography curricula of the neighbouring countries.   + Develop model curriculum for school and higher level in the context of Nepal. | **Unit VI: Comparative study of Geography Curricula (12)**  6.1 Overview of higher secondary and university level geography curricula of Neighboring Countries (Assigned by the teacher)  6.2 Developing a model curriculum for secondary or higher level in the context of Nepal |
| * + Prepare a research proposal   + Develop theoretical framework   + give hands-on-exercise for thesis proposal and prepare a proposal   + Prepare a research article | **Unit VII: Research in Geography (12)**   * 1. Components of research proposal   2. Theoretical framework in research   3. Report writing   4. Theses/dissertation   5. Research articles |
| * + Prepare a research report based on field survey using various research tools and present it through multimedia in the class. | **Unit VIII: Mini Research/KAP Survey on Geographical Issues (24)**   * 1. Carrying out a mini research/KAP study on the topic related to geography education   2. Preparation of report based on data available from the field survey |

*Note: The figures in the parentheses indicate the approximate teaching hours for the respective units.*

1. **Evaluation**

The achievement of the students will be assessed through internal and final/semester examination. Forty percent marks will be allotted to internal examination and sixty percent for final/semester examination.

* 1. **Internal evaluation 40 %**

Internal evaluation will be conducted by course teacher based on the following activities:

1. Attendance 5 points
2. Classroom activities 5 points
3. First assignment/term paper 10 points
4. Second assignment/term paper/project work 10 points
5. Third assignment 10 points

**Total 40 points**

**External evaluation (Final examination) 60%**

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of semester (proposed).

1. Objective type questions (Multiple choice items) 10x1 points 10 points
2. Subjective questions 6x5 points 30 points

**Total 40 points**

**5.3 Evaluation Scheme for external examination** 20 points

The contents for practical work are included in Units VI, VII and VIII. The students will carry out a survey on geographical issues assigned by the teacher. The external examiner will evaluate the report and will conduct Viva Voce examination. The subject teacher will be the internal examiner.

1. Examination (Written, Viva-voce and Observation) 10
2. They will collect data and prepare a research report according to the format provided 10

Students need to acquire minimum pass mark in each component (5.1, 5.2 and 5.3) individually for the completion of the course.

1. **Recommended books and reading materials**

Anonymous, (nd). *Geography Teaching.* A book written by seven individuals associated with *Journal of Geography in Higher Education (JGHE)*, a publication founded in 1976. Retrieved on Jan 1 2013. (See Fieldwork in Chapter 3). **(Unit VI, Unit VII and Unit VIII)**

Jnawali, Damodar (1996). *Bhoogol Shikshan* (Chapters and 1 and 4). Kathmandu: Vidyarthi Pustak Bhandar **(Unit I, Unit II, Uit III, Unit IV, Unit V)**

Nature of Geography. Pdf file retrieved on January 2 2014**.(Unit I),**

Subbiah, S. (1998). “Geography in Indian Universities: Development and Trends*.”* Web page accessed May 1 2009 **(Unit VI, Unit VII, Unit VIII)**

The Five themes of Geography. Pdf file retrieved on Dec 1 2014 **(Unit I and Unit II).**

**Note:** The instructer will have to recommend and manage recent publications and research papers according to the nature of topics.

1. **Reference books (Including relevant published articles in national and international journals)**

Adhikari, Sudeepta (1992). *Fundamentals of Geographical Thought.* Allahabad: Chaitanya Publishing House (Units I and X).

Anonymous, (nd). *Geography Teaching.* A book written by seven individuals associated with *Journal of Geography in Higher Education (JGHE)*, a publication founded in 1976. Retrieved on Jan 1 2013.

Anonymous, (nd). *Geography Teaching.* A book written by seven individuals associated with *Journal of Geography in Higher Education (JGHE)*, a publication founded in 1976. Retrieved on Jan 1 2013. (See Fieldwork in Chapter 3).

Fallahian, Nahid (date unknown).“The Evolution of Geography Education in Iranian Schools: Progress and Limitations (1922–2000).” *University of Tehran, Iran.*

Groves, Norman (ed) (1972). *New Movements in the Study and Teaching of Geography.* Australia: Maurice Temple Smith Ltd.

Hagget, Peter (1979). *Geography: Modern Synthesis.* New York: Harper and Row Publishers.

Hall, David (1976). *Geography and Geography Teachers.* London: George Allen and Unwin Ltd.

Jnawali, Damodar (1996). *Bhoogol Shikshan* (Chapter 9). Kathmandu: Vidyarthi Pustak Bhandar.

Jnawali, Damodar (1996).*Bhoogol Shikshan (Second Edition).* Kathmandu: Vidyarthi Pustak Bhandar (Units I - IX).

Jnawali, Damodar (1996).*Bhoogol Shikshan (Second Edition).* Kathmandu: Vidyarthi Pustak Bhandar (Units I - IX).

Jnawali, Damodar (2001).*Social Studies and Geography Education in Nepal: An Analysis of Curricula and Textbooks.* Kathmandu: Kalpana Jnawali (Units IV and V).

Jnawali, Damodar (2008). *Research: principles and Techniques (Second Edition Chapter 8).* Kathmandu: Vidyarthi Pustak Bhandar.

Kagoda, Alice Merab (2009). Teaching and Learning Geography through Small Group Discussions, Current Research Journal of Social Sciences 1(2): 27-32.

Macnee, E. A. (1971). *Teaching of Geography. Bombay*: University Press.

Mukharji, Shekhar P. (1970). *Geography and Education.* Darjeeling: Jeewan Jyoti Prakashan.

Ondigi, Samson Rosana (2012). Role of Geography and Pedagogical Approaches used in the Training of Pre-service Teachers in Kenyan Universities: A Case of Kenyatta University, *International Journal of Academic Research in Progressive Education and Development,* Vol. 1(4):256-281.

Oyesola, G.O., “Criteria for Selecting Audio-Visual Materials in Geography Teaching in Post-Primary Institutions,” Computers Educ. Vol. 18, No. 1-3, pp. 85-88, 1992 0360-1315/92 $5.00 + 0.00 Printed in Great Britain.

Panday, Ram Kumar (1992). *Bhoogol Shiksha: Darshan ra Vidhi.* Kathmandu: Ratna Pustak Bhandar (Units I -IX).

Subbiah, S. (1998). “Geography in Indian Universities: Development and Trends*.”* Web page accessed May 1 2009.

UNESCO (1973). *Source Book for Geography Teaching.* New Delhi: Orient Longman.

**Course title: Surveying, Cartography and Field Study**

|  |  |
| --- | --- |
| Course No: Geo. Ed. 536 | Nature of course: Theory and Practical |
| Level: M.Ed. | Credit hours: 3 |
| Semester: Third | Teaching hours: 32 (Th)+ 48 (Pr) = 80 |

1. **Course Description**

This courseis designed to provide the students with the advanced knowledge of teaching instrumental surveying, cartography and field study. It deals with the fundamental concepts of instrumental surveying for mapping with the help of survey instruments and reading, making and interpretation of different types of map. It intends to enable the students to collect information/data, analyze them and prepare field study report based on the field work. In addition, it also helps student insights to develop the teaching and materials in school and college levels.

1. **General Objectives**

The general objectives of this course are as follows:

* provide students concepts and principles of instrumental survey and prepare map of assigned area,
* make students familiarize with the principles, techniques and types of cartography,
* develop the skills of students regarding the selection and construction of appropriate cartograms,
* enable students for interpretation and preparing different types of thematic maps,
* enable to collect, process and analyze data from field study
* enable to prepare survey report based on collected data/information,
* make students familiarize with methods and materials essential for teaching surveying, cartography and field study.

1. **Specific Objectives and Contents**

|  |  |
| --- | --- |
| * Define surveying and explain its development trend. * Identify different surveying instruments/tools and their usage. * Handle different surveying instruments carefully and efficiently. * Survey an area using different surveying instruments/tools. * Prepare a final map from instrumental survey of assigned area. | **Unit I: Instrumental Surveying (12)**  1.1 Meaning and development of surveying  1.2 Instrumental surveying  1.2.1 Plane table survey  - Use of telescopic alidade  1.2.2 Prismatic compass: Open and close  traverse  1.2.3 Theodolite – Triangulation,  Traversing and leveling (differential and profile leveling)  1.2.4 GPS in mapping and map updating  1.3 Preparation of final map from instrumental survey |
| * Define cartography and explain its development trend. * Explain the scope of cartography * Explain the basic principles of cartography. * Introduce and differentiate various types of projection. * Provide knowledge of map reading | **Unit II: Introduction to cartography (6)**  2.1 Origin and trends in cartography  2.2 Scope of cartography  2.3 Basic principles of cartography  Scale, symbology, legend, north, grid, text  box, title, orientation etc  2.4 Map projection  2.5 Map reading –general, thematic |
| * Introduce concepts and types of cartography and maps * Design elements of map * Produce maps using different techniques. * Interpret different types of maps. * Prepare different thematic maps from aerial photographs and satellite imageries. * Construct diagrams and cartograms to represent different statistical and educational data. | **Unit III: Cartography and map production (12)**  3.1 Analog Cartography  3.2 Digital Cartography (GIS and RS based  mapping)  3.3 Production and reproduction of map  3.3.1 Topographic maps  - Drawing of contours and Profiles  - Construction of relief model  3.3.2 Thematic mapping – choropleths, isopleths, aerial photographs and satellite imageries  3.3.3 Social maps  3.4 Representation of geographical data (charts, graphs and diagrams) on map |
| * Acquire the knowledge and skills on field study processes. * Identify and construct different field study tools. * Administer different tools and collect various types of data. * Edit process and interpret collected data. * Prepare a field survey report. | **Unit IV: Field Study and instrumental survey on Geographical/Educational Issues (15 along with 15 days field )\***  4.1 Planning  4.2 Instrumentation  4.3 Surveying and data collection  4.4 Editing, processing and interpretation of data  4.5 Preparing map of assigned area  4.6 Report writing |
| * Identify methods and materials for teaching surveying, cartography and field study. * Prepare the instructional materials. | **Unit V. Methods and Materials for Teaching surveying, cartography and field study. (3)**  5.1 Methods for teaching surveying, cartography and field study,  5.2 Instructional materials in teaching  surveying, cartography and field study. |

*Note: The figures in the parentheses indicate the approximate teaching hours for the respective units.*

*\** ***Requirements***

*The duration of field survey and instrumental survey shall be at least of 15 days in any location of closest districts decided by the Department. Field related cost for students and associated teacher/s and supporting staff/s shall be borne by the University. Expenses will include daily, hotel and travel allowances, stationary and first aid equipment including medicines.*

* *The students have to compulsorily participate in the field study and instrumental survey camp organized by the department.*
* *The students are required to prepare a topographical map of assigned area by using different instrumental survey tools and have to be submitted to the department before the final practical examinations.*
* *Practical records have to be submitted to the department before the final practical examinations.*
* *The report should contain sufficient maps, charts, diagrams and tables and must be computer typed and the main text should be of not less than 15 pages (in English Times New Roman fonts 12 size, 1.5 line space in A4 size paper with T1, B0.8, L1,R0.5 inch margin).*

## 4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

### 4.1 General Techniques

Both theoretical and practical techniques/methods can be applied for this course. The general techniques/ methods applicable to this course include lecture, question answer, discussion, observation, class assignment and presentation as well as practical exercises.

### 4.2 Specific Techniques

|  |  |
| --- | --- |
| **Unit** | **Activities and instructional techniques** |
| I | Handling and operation of various survey instruments/equipments and lab work including calculation and plotting of recorded data. |
| II | Explain the development trend of cartography using inquiry method.  Explain the basic principles and types of cartography. |
| III | Provide knowledge about analog and digital cartography through the different techniques.  Map reading exercise to understand the different types of maps.  Preparation of different thematic maps from aerial photographs and satellite imageries.  Lab work (handling of drawing equipments and construction of charts and diagrams) |
| IV | Development of field techniques using observation method and prepare of report. |
| V | Identification of methods and collection of materials and presentation. |

## 5. Evaluation

The achievement of the students will be assessed through internal, final/semester and practical examination.

### 5.1 Internal Evaluation

Forty percent of total marks are allotted to internal evaluation. Internal evaluation will be conducted by course teacher based on the following activities:

|  |  |  |
| --- | --- | --- |
| 1. | Attendance | 5 points |
|  | Classroom activities | 5 points |
| 2. | First assignment | 10 points |
| 3 | Second assignment | 10 points |
| 4. | Third assignment | 10 points |
| ***Total*** |  | ***40 points*** |

### 5.2 External Evaluation (Final Examination)

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester. Sixty percent of the marks are allotted to the final examination. However, the course contains both theory and practical, the final examination covers 40 percent theory (written examination) and 20 percent practical (Laboratory work). Both modes of examination need to pass independently, but percentage will be counted together. The types and number of questions to be included in the final paper are as follows:

|  |  |  |
| --- | --- | --- |
| 1. | Objective type question (Multiple choice 10x1 point) | 10 points |
| 2. | Subjective type questions (6 questions x 5 points) | 30 points |
| ***Total*** |  | ***40 points*** |

**5.3 Evaluation Scheme for external examination** 20 points

1. Examination (Written, Viva-voce and Observation) 10
2. Field report, topographical map and record book 10

Students need to acquire minimum pass mark in each component (5.1, 5.2 and 5.3) individually for the completion of the course.

**6. Recommended books and reading materials**

**Recommended books**

ICIMOD, (2001). GIS for Beginners, Kathmandu: ICIMOD. (for unit III)

Punmia, B. C. & Jain, A. K. (1994). Surveying (Vol. I & II). New Delhi: Laxmi Publication.(for unit I)

Pradhanang, T. B. (20550. HfdLg ;j{]If)f (Land Survey). Kathmandu: Sajha Prakashan. (for unit I)

Robinson, A. H. (1995). Elements of cartography. New York: John Wiley & Sons Inc. (for units II, III)

Singh, R. L. & Singh, R. P. B. (1993). Elements of practical geography. New Delhi: Kalyani Publications. (for units II, III and IV)

Wolff, H. K. & Pant, P. R. (2003). A Handbook for Social Science Research and Thesis Writing. Kathmandu: Buddha Academic Publisher and Distributor Pvt. Ltd. (for unit IV)

**Reading materials**

Aggarwal, A. ( 1991). A text Book of Surveying and Levelling. Delhi: HTATA International

Publication.

Banister, A. & Raymond, S. (1992). Surveying. London: ELBS with Longman.

Jnawali, Damodar (1997). Geography Teaching. Kathmandu: Vidyarthi Pustak Bhandar.

Dhakal, K. R. (2067).e"uf]n lzIf)fdf ef}uf]lns e|d)f Ps ljZn]if)f, N. R. Awaz, Vol. 1. No. 1.

Dhakal, K. R. (2069).hg;ª\Vof lzIffdf cg';Gwfg / k|ltj]bg n]vg, N. R. Awaz, Vol.3.No. 3.

Dhakal,K. R. (2070) . ;fdflhs cWoog lZfIf)f, Kathmandu: Quest Publication.

Hurn, J. (1989). GPS: A guide to the next utility. Trimble Navigation.

Jnawali, D. Poudel, K.P. Rijal, S. P. Dhakal. K. R. Awasthi, T. P. and Sigdel, T. P. (2014). Geography Education in Nepal: A Study of Status and Challenges. A Research Report submitted in University Grants Commission.

Kates, J. S. (1989). Cartographic Design and Production. London: Longman Group Ltd.

Monkhouse, F. J. (1980). Maps and Diagram. . New Delhi: B. I. Publication.

Poudel, Krishna P., 2010 Geographic Information Science and Technology: Building Concepts in

Nepalese Perspectives. Kathmandu: Nepal GIS Society.

Poudel, Krishna P., 2011. :yfgLo ljsf;df ef}uf]lns ;"rgf k|)ffnL(Geographic Information Systems in Local Development) Kathmandu: Nepal GIS Society.

Course Title: **Regional Study with Reference to Nepal**

Course No: Geo. Ed. 537 Nature of the course: Theoretical

Level: M. Ed. Credit hours: 3

Semester: Third Teaching hours: 48

**1. Course Description**

This course **is** designed to provide the students with the advanced knowledge of teaching regional study with reference to Nepal. It deals with the conceptual as well as theoretical basis of region and regionalization practices in Nepal. In also highlights on distribution of settlements, population and their ethno-demographic characteristics, economic activities and major development indicators by regions**.** It helps in identifying appropriate/relevant methods and preparing materials for teaching regional geography for the perspective teacher of college and university level

**2. General objectives of the course**

The general objectives of this course are to:

* make students familiarize the basic concept of region and regionalization,
* develop the skills of students in regionalization practices of Nepal and differentiate formal and functional regions,
* enable students to describe types of settlement, population distribution and ethno-demographic characteristics of Nepal,
* make students able to distinguish major economic activities of Nepal and their characteristics, and identify and analyze major socio-economic indicators by region,
* enhance skills in identifying appropriate teaching methods with skills of collecting and preparing materials for teaching regional geography for college and university level.

**3. Specific objectives and contents**

|  |  |  |
| --- | --- | --- |
| **Specific objectives** | **Contents** | **Teaching hours** |
| * describe concept of region and its theoretical aspects, * describe the concept of boundary, core and periphery, * familiarize with formal and functional regions and explain their basis | **Unit I: Introduction to region**  1.1 Concept and theoretical aspects of region  1.2 Boundary  1.3 Core and Periphery  1.4 Typology of Region- formal and functional | 4 |
| * describe formal regions of Nepal, * analyze ecological regions of Nepal with respects to formation, characteristics and distribution of resource endowments, * describe characteristics of physiographic regions of Nepal, * explain the characteristics of different functional regions * familiarize the concept of federalism and federal states | **Unit II: Regionalization in Nepal**   * 1. Formal Regions      1. Ecological Regions: Formation, distribution and characteristics, and natural resource endowments- Land, Forest, Water, Minerals      2. Physiographic regions: Formation, distribution and characteristics   2. Functional region      1. Development region      2. Political region      3. Economic region      4. Cultural region      5. Linguistic region      6. Concept of federalism and federal states | 14 |
| * describe different types of human settlement of Nepal, * explain growth trend and distribution of population * describe present trend and patterns of migration. * describe ethno-demographic characteristics of different geographical regions | **Unit III: Distribution of settlements, population and ethno-demographic characteristics**   * 1. Types of settlements   2. Growth and distribution of population   3. Ethno-demographic characteristics of population   4. Trend and patterns of migration | 8 |
| * analyze the characteristics and problems of Nepalese agriculture * analyze the present status and problems of industrialization * Point out the prospect and problems of tourism * describe the nature, present status and problems of foreign trade | **Unit IV: Localization of economic activities and their characteristics**   * 1. Agriculture   2. Industry-present status and problems of selected industries   3. Tourism- problems and prospects   4. Foreign trade- nature, present status and problems | 12 |
| * explain the status of infrastructural development in Nepal, * discuss the distribution of educational institution by regions, * describe the literacy status by regions, * discuss HDI and HPI of Nepal by region | **Unit V: Major socio-economic development indicators by region**   * 1. Infrastructure-transportation, electricity, communication, health   2. Distribution of educational institutions   3. Literacy status   4. Development indices – HDI and HPI | 6 |
| * identify appropriate methods for teaching regional geography, * collect information and materials from open sources, and * prepare materials for teaching regional geography and present in the class. | **Unit VI: Teaching regional geography**   * 1. Methods of teaching regional geography   2. Collection of materials from open sources   3. Preparation of materials and presentation | 4 |

**4. Instructional techniques**

* 1. **General techniques**

Varieties of techniques/methods can be applied for this course. The general techniques/ methods applicable to this course include lecture, question answer, discussion, observation, class assignment and presentation.

**4.2 Specific instructional techniques**

|  |  |
| --- | --- |
| **Unit** | **Instructional techniques and students' activities** |
| **I** | Define regions and identify boundary, core and periphery through discussion using maps. |
| **II** | Differentiate ecological belt and physiographic regions of Nepal using maps and discuss about their formation, distribution and characteristics. |
| **III** | Presentation of slides using multimedia showing different types of settlement and their distribution of settlement and population. Present ethno-demographic characteristics using maps and photographs. |
| **IV** | Student's classroom presentation on economic activities and their characteristics |
| **V** | Map presentation and discussion by using reports of CBS, NLSS, UNDP, WFP etc |
| **VI** | Collection of materials from open sources and preparation of teaching materials and presentation providing assignment to the students. |

**5. Evaluation**

The achievement of the students will be assessed through internal and final/semester examination. Forty percent marks are allocated to internal examination and sixty percent for final/semester examination.

**5.1 Internal evaluation**

Internal evaluation will be conducted by teacher based on the following activities:

1. Attendance 5 points

2. Classroom activities 5 points

3. First assignment/ term paper 10 points

4. Second assignment/term paper 10 points

5. Third assignment/term paper 10 points

**Total 40 points**

**5.2 External evaluation (Final examination) 60 percent**

Examination division, Office of the Dean, Faculty of Education will be conducted final examination at the end of the semester. Test items of the examination will be as follows:

1. Objective type questions (Multiple choice items) 10 x 1 = 10 points

2. Short answer question 6 x 5 = 30 points

3. Long answer question 2 x 10 = 20 points

**Total 60 points**

**Recommended Books and Reading Materials**

**Recommended books**

Friedman, J. and Alouse W. (Eds.) (1974). ***Regional Policy***, Cambridge: MIT Press. **(Unit I)**

Hagen, Toni (1998). ***Nepal: The Himalayan Kingdom***. The Hague: Leidon. **(Unit II, Unit IV, Unit V)**

Karan, P.P. (1960). ***Nepal: Cultural and Physical Geography***, University of Kentucky press, USA. **(Unit II, Unit III, Unit IV, Unit IV)**

Panday, R.K. (1984). ***Physical Geography of Nepal (in Nepali)***, Lalitpur: Tethys Panday. **(Unit I, Unit II, Unit III, Unit IV, Unit V)**

Shrestha, Buddhi Narayan. (latest edition), Nepal ko Simana, Kathmandu **(Unit I)**

Shrestha, Badri Prasad and Jain, S.C. (1978). ***Regional Development in Nepal: An Exercise in Reality***, Development Publisher. **(Unit IV, Unit V)**

Shrestha, C.B. (1981). ***Cultural Geography of Nepal*.** Bhaktapur: K.K. Shrestha and K.L. Shrestha. **(Unit III, Unit IV, Unt V)**

Shrestha S. H. (1998). ***Economic Geography of Nepal***. Kathmandu: Educational Enterprise Pvt. Ltd. **(Unit III, Unit IV, Unit V)**

**Reference Books/Materials**

Bhandari, S. (2059) ***Geography of Nepal***, Kathmandu: Ratnapustak Bhandar

Shrestha, A.K.(2070), ***Nepal: Bhaugolic Tatha Arthik Ruprekha*,** Kathmandu: Subhakamana Prakashan.

Panday, R.K. (1987). ***Altitude Geography: Effects of Altitude on the Geography of Nepal***, Kathmandu: The Himalayan Book Distribution.

Course Title: **Geography of Tourism** Nature of Course: Theoretical

Course Code: Geo. Ed. 538 Credit Hours: 3

Level: M. Ed.

Semester: Third Teaching Hours: 48

1. **Course Description:**

This courseis designed to provide the students with the advanced knowledge of teaching geography of tourism. It deals with the fundamental concepts of tourism, evolution of geography of tourism and recreation, tourism services and carrying capacity, impact of tourism and tourism policy and planning with reference to Nepal. In addition, it also helps student insights to develop the teaching and materials in school and college levels. In these pursuits present course on geography of tourism has been designed to provide adequate knowledge and skill on tourism to the students and to initiate them into promoting sustainable tourism development in the national and international context.

1. **General Objective:**

The general objectives of the course are to:

* enable the students to understand the nature, definition and basic concept of tourism,
* enable the students to employ the well-recognized concepts that relate to tourism and recreation in order to achieve a more advanced level of understanding of the spatial processes at work,
* make the students able to identify, analyze and evaluate tourism sites, resources and activities,
* Acquaint and develop the knowledge of students regarding the skill for environmental tourism planning, development and create awareness in the national context of sustainable tourism.

1. **Specific Objectives Related to Course Content:**

|  |  |
| --- | --- |
| Specific objectives | Course Content |
| * Explain geography of tourism, its nature and scope * Describe key concepts, approaches and theories relating to the geography of tourism and recreation * provides examples from the range of international contexts * explain determinants and its typology | **Unit I: Introduction to Geography of Tourism (13)**  1.1 Nature and scope  1.2 Concepts (eco-tourism, rural/village tourism and sustainable tourism) Approaches (environmental, socio-cultural and economic, approaches) and Theories ( Butler and Maslow)  1.3 Determinants of tourism and its typology |
| * analyze historical development of tourism * acquaint development trends of tourism * identify and analyze natural, socio-cultural and historical tourism resources | **Unit II. Evolution of Tourism and Recreation (**9)  2.1 Evolution  2.2 Development trends  2.3 Tourism Resources: Natural, socio-cultural and historical |
| * analyze and evaluate tourism services, facilities and organizations * explain the concept of tourism carrying capacity * analyze tourism carrying capacity with reference to Nepal | **Unit III. Tourism Services and Carrying Capacity (9 )**  3.1Tourism services, facilities and organizations (National, Regional and International)  3.2 Concept of carrying capacity  3.3 Analysis of carrying capacity with reference to Nepal |
| * analyze physical, socio-cultural and economic impacts of tourism | **Unit IV: Impact of Tourism (6)**  4.1 Natural/Environmental  4.2 Socio-cultural  4.3 Economic |
| * develop ability on policy analysis and planning skill in Nepalese tourism context * evaluate and analyze the sites and situations of mountain, pilgrimage and eco-tourism in Nepal | **Unit V: Tourism Policy and Planning in Nepal (6)**  5.1 Government plan and policies for tourism  5.2 Special emphasis on mountain, pilgrimage and eco-tourism |
| * identify methods of teaching geography of tourism * collect and prepare materials for teaching geography of tourism | **Unit VI Tourism in Geography Education (5)**  6.1 Methods and materials for teaching geography of tourism  6.2 Collection and preparation of tourism related materials for presentation |

*Note: The figures in the parentheses indicate the approximate teaching hours for the respective units.*

1. **Instructional Techniques**

**4.1 General Techniques**

Varieties of techniques/methods can be applied for this course. The general techniques/ methods applicable to this course include lecture, question answer, discussion, observation, class assignment and presentation.

**4.2 Specific Techniques**

|  |  |
| --- | --- |
| **Unit** | **Activities and instructional techniques** |
| I | Provide theoretical concepts of the subject through local examples  Give ideas of tourism based on visual aids and materials |
| II | Provide theoretical concepts of the subject through local examples |
| III | Provide theoretical concepts of the subject through local examples. Carrying capacity will be computed based on Nepal Tourism Board (NTB) Data and provide some examples. |
| IV | Theoretical explanation will be made based on available case examples at local to global scale |
| V | This chapter will deals entirely in Nepalese example and case study. Student will provide the case studies and prepare the examples of planning and policy |
| VI | Basically used WWW resources and prepared the presentation on how to teacvh at class-room |

1. **Evaluation**
   1. **Internal Evaluation**

Forty percent of total marks are allotted to internal evaluation. Internal evaluation will be conducted by course teacher based on the following activities:

|  |  |  |
| --- | --- | --- |
| 1. | Attendance | 5 points |
|  | Classroom activities | 5 points |
| 2. | First assignment | 10 points |
| 3 | Second assignment | 10 points |
| 4. | Third assignment | 10 points |
| ***Total*** |  | ***40 points*** |

* 1. **External Evaluation (Final Examination)**

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester. Sixty percent of the marks are allotted to the final examination. The types and number of questions to be included in the final paper are as follows:

|  |  |  |
| --- | --- | --- |
| 1. | Objective type question (Multiple choice 10x1 point) | 10 points |
| 2. | Short answer questions (6questions x 5 points) | 30 points |
| 3. | Long answer questions (2 questions x 10 points) | 20 points |
| ***Total*** |  | ***60 points*** |

1. **Recommended Books and Reading Materials**

**Recommended Book**

* Collier, A. (1989), Principles of Tourism. Newzealand: Pitman **(Unit I).**
* HMG/DOT (1972), Nepal: Tourism Master Plan. Kathmandu: HMG/Ministry of Commerce and Industry, Department of Tourism (DOT). **(Unit IV and Unit V).**
* Kunwar, R.R. (1997), Tourism and Development: Science and Industry Interface. Kathmandu: Laxmi Kunwar. **(Unit I, Unit III, Unit IV, Unit V).**
* Sharma, P.(1995), A Framework for Tourism Carrying Capacity Analysis: ICIMOD, Kathmandu: Discussion Paper Series No. MEI 95// **(Unit III).**
* Smith, S.L. (1987), Tourism Analysis: A Handbook. UK: Longman Group. **(Unit I and Unit II).**

**Recommended Readings**

* Butter, R.W. (1980), The Concept of Tourist Area Cycle of Evolution: Implication for Management of Resources. Canadian Geographers, vol. 24, No. 1: 5 -12pp.
* Hall C.M and Page, S.J. (2002), The Geography of tourism and Recreation: Environment, Place and Space. London: Routledge.
* Inskeep, E. (1994), National and Regional Tourism Planning. New Delhi: Himalayan Books.
* Mathesion, A. and Wall, G. (1982), Tourism: Economic, Social and Physical Impact. London and New York: Longman.
* Murphy, P.E. (1985), Tourism an Community Approach. London and New york:Routledge.
* Robinson, H. (1976), A Geography of Tourism. London MacDonald and Evans.

Course Title: **Instructional Technology in Health Education**

Course No. : H. Ed. 535 Nature of Course: Theory

Level: M.Ed. Credit Hours: 3

Semester: Third Teaching Hours: 48

|  |
| --- |
|  |

**1. Course Description**

This course is designed to equip the students with essential knowledge and skills pertaining to the innovative teaching strategies, communication in teaching and use of technology in health education. It enables the students in designing, selecting and using appropriate teaching materials and media in health education.

**2. General Objectives:** The general objectives of this course are as follows:

* To equip the students with general knowledge of innovative instructional strategies in health education.
* To widen the horizon of knowledge and understanding of students with a view to making them able to select appropriative approaches and materials/media for classroom teaching.
* To enable the students to apply the innovative teaching strategies as per the situation of school and community.
* To enable the student to use information communication technology, multimedia and locally available materials for innovative and effective teaching
* To analyse critically the curriculum of health education.

1. **Specific Objectives and Contents**

|  |  |
| --- | --- |
| **Specific Objectives** | **Contents** |
| * Explain concepts of teaching and instructional technology in relation to health education * Describe formal, descriptive and normative theories of teaching * Discuss and apply different types of instructional designs in health education. | **Unit I Instructional Designs in Health Education (8)**   * 1. Concept of teaching and instructional technology   2. Theories of teaching (formal, descriptive and normative   3. Types of instructional design   1.2.1 Objective based  1.2.2 Skill based  1.2.3 Competency based  1.2.4 Learning-style based  1.2.5 Model based (ADDIE, Dick and Carey Models) |
| * Describe concept of innovation and innovative teaching strategies in health education * Delineate the need of innovative strategies and participatory approaches * Apply innovative strategies in teaching health education * Apply collaborative learning and problem-based learning strategies in teaching-learning process of health education * Discuss the use of case study, dialogical and counseling method in health education | **Unit II. Innovative teaching strategies in Health Education** **(20)**   * 1. Concept of innovation and innovative teaching strategies in health education and related field   2. Innovative and participatory strategies      1. Workshop/Seminar      2. Project method      3. Micro-teaching and peer teaching-learning      4. Games, simulation and imagination      5. Collaborative Learning      6. Critical thinking      7. Problem-Based Learning (PBL)      8. Case study      9. Dialogical method      10. Inquiry-based learning |
| * Discuss implication of diffusion of innovation, PBC and social marketing theories in health communication * Describe Shannon-weaver model of communication * Illustrate Hargie and colleague's model of inter-personal communication * Apply Northhouse and Northouse's model of health communication in health instruction * Appraise factors influencing communication in classroom and mass media * Plan a communication process in health education. * Use different communication channels and methods in health education. | **Unit III. Communication in Health Education (10)**  2.1 Theories/models of health communication  2.1.1 Review of Diffusion of Innovation, Process of Behaviour Change (PBC) and social marketing theory of communication  2.1.2 Shannon-Weaver model, Hargie and Colleague's Model, McGuire's Communication-Persuasion Model, Northouse & Northouse's model of health communication  2.2 Factors influencing communication  2.3 Methods of communication: Intrapersonal, interpersonal, group, public and mass communication  2.4 Communication planning process in health education teaching |
| * Describe importance of information and communication technology in health education * Mention goals of multi-media delivery in classroom teaching * Apply multimedia in teaching health education in real setting * Able to use electronic communication devices and strategies in teaching health education * Discuss potential use of web-based instruction/online learning * Describe criteria for reviewing health education curriculum * Analyse critically existing curriculum of higher secondary and bachelor level. | **Unit IV. Use of Technology and Review of Health Education Curriculum (10)**  5.1 Importance of Information and Communication technology in health education  5.2 Goals of multi-media delivery and use of multimedia video, CDROM, slides/power point presentation in classroom  5.3 Use of electronic communication devices and strategies (cell phone, tablet pc, email, social web)  5.4 Potential use of internet for web-based instruction in health education  5.5 Innovative use of teaching board, low cost and locally available materials for effective teaching health   * 1. Criteria for reviewing health education curriculum   2. Critically analysis the existing health education curriculum of Higher Secondary and Bachelor level |

*(Note: The figure in the parenthesis indicate the approximate periods for the perspective units)*

1. **Instruction Techniques** 
   1. **General Techniques**

The instructional techniques will be applied on the basis of the nature of lesson topics under each unit. In general, following instructional techniques are applicable in most of the contents and units;

1. Discussion
2. Brain storming
3. Interaction
4. Presentation
5. Cooperative learning

**4.2 Specific Instructional techniques**

|  |  |
| --- | --- |
| **Units** | **Activity and Instructional Technique** |
| I | The students will be asked to review theory of instruction and instructional designs and selected students will make a short presentation in classroom. |
| II | A panel discussion will be organised to clarify the theories and to determine innovative and participatory approaches of health education. Students will be divided into different groups to practice different teaching strategies and approaches in teaching health education. The teacher will explain and demonstrate the newly introduced teaching strategies. |
| III | The teacher will describe the theories of communication in teaching health education. The students will be asked to practice communication models in teaching health education in class.  The students will be asked to review of communication models and their use in health education class and make presentation in classroom. |
| IV | The students will be asked to identify different ICT materials which can be applied in teaching population education.  Project work on innovative of multi-media, teaching board and locally available materials in classroom teaching.  The teacher will ask students to identify the criteria for reviewing curriculum of health education. Students will be asked to collect curriculum of population education of different levels. They will also be asked to review the curriculum in terms of objectives, contents and their relevancy. |

* 1. **Internal Evaluation 40%**

Internal evaluation will be conducted by subject teachers based on following aspects:

|  |  |  |
| --- | --- | --- |
| **SN** | **Particular** | **Points** |
| 1 | Attendance | 5 |
| 2 | Participation in learning activities | 5 |
| 3 | First assessment: Article review/ book review/ open book test/ unit test etc | 10 |
| 4 | Second assessment: Midterm test | 10 |
| 5 | Third assessment: Project work/case study/field/study/survey/seminar/workshop | 10 |
| **Total** | | **40** |

**5.2 External Examination (Final Examination) 60%**

Examination Section, Office of the Dean, Faculty of Education will conduct final examination at the end of semester.

|  |  |  |
| --- | --- | --- |
| **S.N** | **Types of question** | **Points** |
| 1 | Objective type question (Multiple choice 10x1 point) | 10 |
| 2 | Short answer questions (6 questions x 5 points) | 30 |
| 3 | Long answer questions (2 questions x 10 points) | 20 |
| **Total** | | **60** |

1. **Recommended Books and Materials**

**6.1 Recommended Readings**

Aggrawal, J.C. (1999). *Principles, methods & techniques of teaching.* New Delhi: Vikas Publishing House Pvt. Ltd. (Unit I).

Bradshaw, M.J., and Lowenstain, A.J. (2011). *Innovative teaching strategies in nursing and related health professions*. Boston: Jones and Bartlett Publishers. ( For Unit II and IV)

Clervey, D. (2003). *Inquiry-based learning*. New York: Routledge. (For Unit II)

Corcorn, N. (2007). *Communicating health: strategies for health promotion.* London, New Delhi: Sage Publication (For Unit III)

Gagne, R. (2010). *Instructional technology foundations:* (Digital printing). Madison Avenue, New York: Routledge (For Unit I and IV)

Lee, M., and Winzenried, A. (2009). *The use of instructional technology in classroom. Lessons to be learnt*. Victoria, Australia: ACER Press. (For Unit IV)

Mangal, S. K. & Mangal, U. (2009). *Essential of educational technology*. New Delhi: PHI Learning Limited. (Unit I and IV)

***6.2 References:***

Corcorn, N. (2013). *Communicating health: strategies for health promotion.* London, New Delhi: Sage Publication

Dahama, O.P & Bhatnagar, O.P (1997). *Education and communication for development.* New Delhi: Oxfor and IBH Publishing Co. Pvt Ltd

Gillbert, G.G., Sawyer, R.G., and McNeill, E.B. (2009). Health Educatin: Creating strategies for school and community. Boston: Jones and Bartlett Publisher

Hubley, John (1993). *Communicating health: An action guide to health education and health promotion.* Malaysia: Macmillan Education Limited.

Mohan, R. (2011). *Teacher education.* New Delhi: PHI Leaning Private Limited.

Mudwari, N. (2068 B.S.). (Nepali*) Modern approaches in heath education. Kathmandu:* Jupiter Publisher and Distributors

Ramachandran, L. & Dharmalingham, T. (2004). *Health education: A new approach*. New Delhi: Vikash Publishing House Pvt. Ltd.

Sampath,K., Panneerselvam, A. & Santhanan, A. (2000). *Introduction to educational technology (4th edit.)* New Delhi: Sterling Publishers Pvt. Ltd.

Vedanaynyagam, E.G (1989). *Teaching technology for college teachers.* New Delhi: Sterling publishers Pvt. Ltd.

Vanja, M. (2010) *Educational technology*. Hyderabad: Neelkamal Publicaiton Pvt Ltd.

<http://www.celt.iastate.edu/teaching-resources/effective-practice/revised-blooms-taxonomy/>

http://www.utar.edu.my/fegt/file/Revised\_Blooms\_Info.pdf

Course Title: Health Education Planning and Management

Course No. : H.Ed. 535 Nature of course: Theoretical

Level: M.Ed. Credit Hours: 3

Semester: Third Teaching Hours: 48

1. **Course Description**

This course is designed to provide students with concepts, theories and experiences of health education planning, health service planning, management of health services and health education programme. It also emphasizes on planning, implementation and supervision of school health education programme. Moreover, it enables the students to analyze existing health policy, planning and organization of health services and school health education programme of Nepal.

**2 General Objectives**

The general objectives of this course are as follows:

* To make the students familiar with the concept of health education programme planning.
* To acquaint the students with health education planning cycle and planning process
* To enable the students to apply PRECEDE-PROCEED model and logical framework in health education programme planning
* To enable the students to analyze the health sector programme implementation plan critically.
* To provide the students with basic concept and process of strategic planning.
* To provide the students with the knowledge and skills in applying the principles, functions and theories of management in HEP.
* To familiarize the students with basic concept and procedure of general and clinical supervision in relation to school health education
* To orient students to existing health policy and planning and their critical review

**3 Specific Objectives and Contents**

|  |  |
| --- | --- |
| **Specific Objectives** | **Contents** |
| * Describe the concepts, rationale nature and objectives of health education programme planning. * State the ................ steps of health education programme planning. * Apply PRECEDE-PROCEED model and logical framework in health education planning. * Describe implementation of health * Analyze the trend of health education programme planning | **Unit I: Planning of Health Education Programme (10 hours)**   * 1. Concept .............. nature of and objectives health education programme planning.   2. Health education programme planning cycle.   3. Steps of health education programme planning   4. Application of PRECED-PROCEED model, and Dignan and Carr's Planning Model in health education programme planning.   5. Implementation of health education programme.   6. Trends in health education programme planning. |
| * Discuss the meaning and definition of health planning and health .................. planning * State the needs of health planning * Compose community will health organigitional level health planning * Describe the concept of strategic planning with respect to health care and school health services * Illustrate the process of strategic planning * Describe concept and importance of health service organization and management * Illustrate organizational structure of health services in Nepal * Discuss key issues of central, peripheral and grassroots level health service management in Nepal | **Unit II: Health Planning and Management in Nepal. (12 hours)**   * 1. Introduction to health planning and health service planning   2. Needs of health planning   3. An overview of health planning: Community-wide planning and organizational level planning   4. Model and steps of health planning   5. Concept and framework of strategic planning in health care and school health   6. Strategic planning process   2.7. Health Service Organization Management  2.7.1Concept and importance of Health Service Organization Management  2.7.2 Organizational structure of health service in Nepal  2.7.2Central, peripheral and grass root level health service management in Nepal |
| * Describe the concept principles and foundation of management with respect to health education programme and health services. * Analyze the managerial roles and skills for effective management in HEP. * Describe the theories of management and their application in SHEP. * Explain general procedure of managing health education programme at schools * Discuss managerial aspects of school health services * Explore the ways of managing and maintaining healthy school environment | **Unit III: Management of School Health Education Programme (10 hour)**  3.1 Concept, principles and functions of management  3.2 Managerial roles and skills for SHEP  3.3 Theories of management  3.3.1 Classical theories  3.3.2 Neoclassical theories  3.3.3 Modern management theories (system theory, total quality management and team management)  3.4 Management of school health Education  3.5 Management of School Health Services  3.6 Management of healthy school environment |
| * Describe concepts, objectives and needs of supervision * Discuss key elements of conceptual, classical and school sites models of supervision * Explain concept and procedures of general supervision * Apply procedures of clinical supervision in school health education programme | **Unit IV: Supervision of School Health Education Programme ( 10 hours )**   * 1. Concept, objectives and needs of supervision   2. Conceptual, classical and school sites models of supervision   3. General supervision and its procedures   4. Clinical Supervision and its procedures |
| * prepare a review report on national health policy of Nepal * State key points from second long term health plan and three year interim plan related to health education and promotion * Identify the overview of health sector programme implementation in Nepal. | **Unit V: Health Policy and Plans of Nepal (6)**  5.1 Review of national health policies and plan.  5.1.1 National health polices,1991  5.1.2 Second long term health plan (1997- 2017).  5.1.3 Three year interim health plan (first &Second).  5.1.4 National Health Policy 2071 BS  5.2 Review of Nepal health sector programme – implementation plan |

*Note: The figures in the parentheses indicate the approximate hours for the respective units.*

**4. Instructional Techniques**

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units and sub-units. While the second group consists of proposed specific instructional techniques applicable to specific units and topics.

**4.1 General Instructional Techniques**

* Lecture with slide presentation
* Question-answer
* Discussion
  1. **Specific Instructional Techniques**

The following techniques will be used for active participation of students in learning process.

|  |  |
| --- | --- |
| **Unit** | **Activity and Instructional Techniques** |
| **I** | * Students will be divided into groups and they will be given assignments on three themes: Steps in health education, PRECED-PROCEED model, Dignan and Carr's Planning Model. Each group will prepare and present their assignments in the class. After the presentation, teacher will clarify concepts and provide feedbacks. |
| **II** | * Students will be divided into groups and they will be give a assignment on three themes: models of health planning, framework of strategic planning and sample of strategic planning of an organization. Each group read relevant literature and books, discuss and prepare class presentation. Each group will present output of the group work in class. After presentation, teacher will further clarify the concepts and issues |
| **III** | * Students will visit the nearest schools, observe and discuss with school teachers and staff about management of school health education, school health services and healthy environment. On the basis of school visit and interaction with school teachers, each student will write short critical report on existing status of school health management of the local school. The students will present their reports, which will be followed by discussions. |
| **IV** | * A few selected students will play the role of clinical supervisor and prepare their works according to the process of clinical supervision. One student will play the role of school health education teacher and remaining students will play school students. Students playing roles of clinical supervisor will organize pre-observation conference, observation and analysis strategies/methods adopted by a teacher, organize pos-observation conference. After role play, there will interaction among them, teacher will clarify the key concepts and points. |
| **V** | * Students will be divided into groups. First group will review the second long term plan. The second group will review interim health plan and third group will review national health policy 2071 BS. Each group will present their review in the class. After presentation, teacher further explains the key elements of health policy and plan of Nepal |

**5. Recommended Books and Reference**

**Recommended readings**

Glanz, K., Rimer, B.K. & Lewis, F.M. (2002*). Health behaviour and health education: Theories, research and practice (Third edition).* San Francisco: John Wiley & Sons, Inc. **(Unit I and II)**

McKenzie, J. F. & Smeltzer, J. L. (2001). *Planning, implementing, and evaluating health promotion program: A miner (Third edition).* London: Allyn and Bacon. **(For units I & VII)**

Neupane, D. & Khanal, V. (2010). *A textbook of health service management in Nepal.* Kathmandu: Vidyarthi Pustak Bhandar. (Unit II and V)

Park, K. (2007). *Park’s textbook of social medicine* (19th edition). Jabalpur: M/s Banarsides Bhanot.(Unit I

Pradhan, H. B. (2003). *A textbook of health education (Philosophy & principles).* Kathmandu: Educational Publishing House. (Unit I)

Rubinson, L., & Alles, W. F. (1984). *Health education foundation for the future*. Mosby USA: Times Mirror.(Unit I & II)

Thomas, R.K. (2002 ). *Health service planning* (2nd ed.). New York: Kluwer Academic Publishers (For Unit III)

Zuckerman, A.M. (2006). *Healthcare strategic planning (Second Edition)*. New Delhi: Printice-Hall of India Pvt. (For Unit III)

**Reference Books**

Green A. (1999). *An introduction to health planning in developing countries* (second edition).New York: Oxford University Press

Katz, J., P, A. & Douglas, J. (2000). *Promoting health: health and practices*. London: Open University Press

Baidhya, P. C. et al. (2068). *Foundation and principle of health education*. Kathmandu: Pinacle Publication.

Budhathoki, C.B. & Wagle B.P. (2068).*School health programme management.* Kathmandu: Pinacle Publication.

Fleming, I., & Steen, L. (2004). *Supervision and clinical psychology* (2nd edition). East Sussex: Brunner-Routledge

GoN (2006). *National school health and nutrition strategy, Nepal.* Government of Nepal, Ministry of Education and Sports, and Ministry of Health and Population, Kathmandu.

Jones, R.A.P (2007). *Nursing leadership and management: Theory, Process and practices.* Philadelphia: F.A. Davis Company.

Meeks, L. et al. (2003). *Comprehensive school health education:* *totally awesome strategies for teaching health.* New York: Mc. Graw–Hill.

SCHP (2062 BS). *School Health Program Implementing Guidelines (In Nepali)*. School and Community Health Project (SCHP), Teku, Kathmandu.

Sallis, E. (2005). *Total management in education* (3rd Edition). London: Kogan Page Ltd.

Tomkins, J. R. (2005). *Organization theory and public management*. Belmont, CA: Thomson Learning Inc.

UNESCO (2007). *Reforming school supervision for quality improvement: Module 7- Alternative model in reforming school supervision.* Paris: IIEP/UNESCO available from [www.unesco.org/iiep](http://www.unesco.org/iiep)

UNESCO (2007). *Reforming school supervision for quality improvement: Module 5-Management of supervisory work.* Paris: IIEP/UNESCO available from www.unesco.org/iiep

**Course Title: Seminar in Issues of Health and Health Education**

Course No.: H.Ed. 537 Nature of Course: Practical

Level: M.Ed. Credit Hours: 3

Semester: Third Teaching Hours: 80

**1. Course Description**

This course has been designed to equip the students with in-depth knowledge on issues and challenges of health and health education. It has been developed with a view to enhance their skills for identifying issues pertinent to health education, writing seminar papers on health issues and challenges and present in a seminar. It also provides them an opportunity to organize a seminar effectively.

**2. General Objectives**

The general objectives of the course are as follows:

* To make the students familiar with identification of resource materials in health related issues and challenges.
* To acquaint the students with global health issues and challenges such as health in all policies, social determinants of health, politics of health, health of senior citizen, human sexuality and reproductive health and health education in emergencies.
* To enhance students' knowledge and expertise in reviewing literature.
* To enable students in writing seminar papers and present in a seminar.
* To develop among students hands on skills in conducting a seminar.
* To enable the students supply peer review comments on research papers and develop presentation skills.
* To enable students in editing the seminar paper based on the feedback given

**3. Specific Objectives and Contents**

|  |  |
| --- | --- |
| **Specific Objectives** | **Units and Contents** |
| * Elucidate the situations of health equality and suggest its promotion in each stage of human life. * Analyze the situation and issues of workplace health policy and its implementation. * Highlight the globalization and national policy space for HiAP. * Analyze health policy based on security situation in terms of human, food, girl child and child labour. * Delineate the National Health Policy * Analyze the issues of MDGs and SDGs. | 1. **Review of Health policies (15)**    1. Promotion of health equality in each stages of human life    2. Workplace health policy and its implementation    3. Globalization and national policy space for Health in All Policies (HiAP)    4. Health Security (health and human security, food security, girl child security, child labour)    5. National Health Policy    6. Millennium Development Goals (MDGs) and Sustainable Development Goals(SDGs) |
| * Describe the social origin and social determinants of health. * Explain the relationship between education, income, occupation and health status. * Describe the caste/ethnic and gender variation in health status in Nepal. * Elucidate the social patterns of individual behaviours. * Discuss life styles and behavioural determinants. * Explore issues of social exclusion in health care. * Describe the concept of equity and social justice in health. * Discuss the politics of health and health care in Nepal. * Explore the state responsibility of health and health cares. * Discuss crises of social/state responsibility of health. * Explore issues related to the impact of globalization, privatization and liberalization on health and health care. * Discuss the situation of food security and its impact on malnutrition in Nepal. | **Unit II: Social Determinants and Politics of Health (20)**  3.1 Social origin and social determinants of health and illness  3.2 Relationship between education and income, occupation and health status  3.3 Gender, racial and ethnic/caste disparities in health  3.5 Social patterning of individual health behaviours  3.5.1 Food habit and smoking  3.5.2 Alcohol consumption and substance abuse  3.5.3 Lifestyles and non-communicable diseases  3.7 Social exclusion, equity and social justice in health  3.9 Workload and mental stress  3.10 Politics of health and health care  3.11 State responsibility of health and health care services and it crises  3.12 Impact of globalization, liberalization and privatization on health and health care  3.13 Food security and malnutrition |
| * Assess the situation of senior citizen's population of developed and developing countries. * Express the economic, social, psychological and health problems of seniors and suggest measures to manage their problems. * Identify the issues in utilization of health services among senior citizen * Analyze the issues of children’s national as well as international migration and its impact on citizen left behind. | **III Health of Senior Citizen (10)**   * 1. Situation of elderly people's population in developed and developing countries   2. Social and economic issues of senior citizen   3. Health problems of senior citizen   4. Health service utilization among senior citizen   5. Children's migration and its impact on left behind parents |
| * Discuss the impact of early initiation of sex among youth. * Delineate issues of commercial sex, LGBTI, unsafe abortion. * Analyze legal aspects on human sexuality. * Analyze issues of surrogacy practice | **IV. Human Sexuality and Reproductive Health (10)**  4.1 Early initiation of sex and subsequent reproductive health related risks  4.2 Commercial sex  4.3 LGBTI  4.4 Unsafe abortion  4.5 Legal aspects on human sexuality  4.6 Surrogacy |
| * Discuss on the need and importance of health education during disasters and health emergencies. * Plan health education programs for addressing health problems during disasters and health emergencies. * Explain the nexus between culture and religion and human behaviours. | **V. Health Education in Emergencies (15)**  5.1 Health services during emergencies (Disasters, epidemic such as Ebola, Swine Flu, armed conflict)  5.2 Mental health during emergencies  5.3 Nutrition during disasters and armed conflict  5.4 Sexual violence and women's reproductive health during disasters and armed conflict  5.5 Sanitation during disasters, armed conflict and health emergencies  5.6 Planning health education during disasters and other health emergencies  5.7 Impact of culture and religion on human behaviours during disasters and emergencies |

*(Note: The figure in the parenthesis indicates the approximate periods for the perspective units)*

**4. Instructional Techniques**

**4.1 General Techniques**

* Discussion
* Brain storming
* Case study
* Focus group discussion
* Interview
* Cooperative Learning
* Independent study
* Presentation

**4.2 Preparation of seminar paper and Specific Instructional Techniques**

|  |  |
| --- | --- |
| **Duration** | **Activities** |
| 1st month | * Discussion and clarification of issues on health education * Discussion about sources of learning materials * Visiting libraries and websites to identify related materials |
| 2nd month | * Reviewing journals, reports and other references books * Collection of information |
| 3rd month | * Discussion of concept seminar and its procedure * Clarification about method of preparing seminar papers * Writing papers |
| 4th month | * Printing papers and distribution to the peers for collecting comments * Division of group and distribution of assignments * Organizing seminar * Each group or individual presents paper * Collecting feedbacks |
| 5th month | * Editing paper and submission of evaluation papers by internal teachers * Viva by external examiner |

***(Note: All assignments done by the students should be signed by the internal teacher and these should be submitted to the external examiner)***

**5. Evaluation**

* 1. **Internal Evaluation (Practical) 40%**

Internal evaluation will be conducted by subject teachers based on following aspects:

|  |  |  |
| --- | --- | --- |
| **SN** | **Particular** | **Points** |
| 1 | Attendance | 5 |
| 2 | Participation in learning activities | 5 |
| 3 | First assessment /mid-term examination | 15 |
| 4 | Second assessment/term paper | 15 |
| **Total** | | **40** |

**5.2 External Examination (Practical) 60%**

Examination Section, Office of the Dean, Faculty of Education will conduct final examination at the end of semester.

|  |  |  |
| --- | --- | --- |
| **S.N** | **External/final examination** | **Points** |
| 1 | Quality of Seminar paper | 10 |
| 2 | Seminar Presentation | 20 |
| 3 | Review of students' assignments and activities | 10 |
| 4 | Viva | 20 |
| **Total** | | **60** |

1. **Recommended Books/Materials**

**6.1 Recommended Materials**

Adhikari, J., & Sedon, D. (2003). *Conflict and food security in Nepal.* Kathmandu: Report submitted to rural construction Nepal (For Unit II)

Anand, S., Peter, F., & Sen, A. (Eds.). (2004). *Public health, ethics, and equity*. New Delhi: Oxford University Press. (For unit II)

Carrol, J. N. (2010). *Sexuality now: embracing diversity.* Belmont: Wadsworth Centage Learning (Unit IV)

Charles, C/ (2014) What’s the World Health Organization For? Final Report from the Centre on Global Health Security Working Group on Health Governance. Chatham House, London (Unit I)

Devkota, B. (2010), Violent conflict and complex emergencies: Expanding the horizon of Health Education & Promotion in Nepal, *Journal of Health Promotion*, Vol 3 (Unit V).

Division of Global Migration and Quarantine

dnetnepal.com/swedish/pdf/Air%20Pollution%20status%20nepal.pdf (Unit III)

*Himal South Asia Journal* (2010). Sex and work the dignity of labour, August 2010, vol 23, no 8. (Unit IV)

GoN, MoHP (1994). *National health policy.* Kathmandu. (Unit I).

*Himal South Asia Journal* (2008). Circle of Sexuality: The push for privilege, the danger of definition. March 2008, vol. 21, no 3.

Hansen, G., Venturilli, P., & Fleckenstein, A. E. (2008). *Drugs and society*. London: Jones and Bartlett Publisher. (For unit VI)

Jones, L. J. (1994). *The social context of health and health work.* New York: Palgrave. (For units III and VIII)

*Lancet , Complex Emergencies*, [Volume 364, No. 9447](http://www.thelancet.com/journals/lancet/issue/vol364no9447/PIIS0140-6736(00)X9450-0), p1741–1742, 13 November 2004, Lancet Special series May 2015 (upcoming) (Unit V)

Marmot, M. & Wilkinson, R.G. (1999). *Social determinants of health*. Oxford: Oxford University Press.Park, K. (For unit III)

Master, W.H., Johnson, V.E. & Kolondy, R.C. (2007). *Human sexuality.* Delhi: Pearson Education. (Unit IV)

McKenzie, J.F., Pinger, R.R. &Kotecki, J.E (2005). *An introduction to community health (5th Edition*) Boston: Allyn and Bacon.

PMAC (2015). Security Interests in Global and Public Health,<file:///C:/Users/Bhisen/Downloads/PMAC2015_CF_PS1.1_Session%20(1).pdf> (Unit I,Unit V)

Onta, S. (2004). State responsibility: public health perspective (In Nepali). In M. Deshan and P.Onta (Eds), *Nepalko Sandarbhama Samajshastriya chintan*. Kathmandu, Social Science Baha.

Pradhan, A. and Strachan (2003). *Adolescent and youth reproductive health in Nepal: status, issues, policies and program*. Kathmandu: Family Health Division, Ministry of Health (Unit IV)

WHO (2008*).Closing the gap in a generation: Health equity through action on the social determinants of health.* Final Report of WHO Commission on Social Determinants of Health. Geneva: World Health Organization. (For Unit II)

**6.2 References**

Maharjan, S.K. (2070). *Human sexuality and reproductive health*. Kathmandu: Sunlight Publication

UN : Synthesis report of the Secretary-General on the post-2015 sustainable development agenda

WHO. Myths and realities in management of dead bodies,

**Course Title: APPLIED HEALTH EDUCATION RESEARCH**

Course No. : H.Ed. 538 Nature of course: Theory

Level: M.Ed. Credit hour: 3

Semester: Third Teaching Hours: 48

**1. Course Description:** This course has two prongs; applied research methods and statistics. Upon completing the course students will understand the basics of health education research methods and statistics. They will develop an understanding of various research methods and statistical methods and tools that are applied in health education research. The students will be able to apply their knowledge and skills to developing research tools both in quantitative and qualitative research, and collect and analyze qualitative and quantitative data. They will also be able to generate research questions, formulate, and test hypothesis based on the data they generate or given to them. Students will be introduced to basic procedures of SPSS for windows and have opportunity to practice data processing in SPSS software. The students will develop their understanding on qualitative data analysis programs. The students will be able to use their research–related knowledge and skills in developing a research protocol, write research report and papers, and undertake research in future.

**2. General Objectives**

Upon completing this course, students will:

* + Familiarize students the basic concepts of health education research, its methods, and basic statistics
  + Be familiar with research designs, types of data, sources and organization of data, tools and methods of qualitative and quantitative research
  + Enable students to develop research tools, collect data, analyze data and write reports
  + Describe sampling designs and determine appropriate sample size using proper power calculations
  + Describe methodology-specific techniques for sampling; data generation, collection, and preparation; data analysis; and interpretation and representation
  + Enable students to apply SPSS in analyzing quantitative data and introduce NVIvo and Atlas ti for qualitative data
  + Orient students with ethics of health education research and biases
  + Provide students knowledge and skills required for developing proposal on topic of choice and write a research article
  + Make students able to apply basic statistics in analyzing data
  + Provide knowledge and skills required for writing thesis, research report and original research articles using proper format

**3. Specific Objectives and Contents**

|  |  |
| --- | --- |
| **Specific Objectives** | **Contents** |
| * Explain key steps of health education research process with examples * Review literature using manual and electronic database searches * Able to analyze and write research problem * Formulate research objectives and research questions * Operationalize variables in the process of developing research proposal * Apply any of epidemiologic research designs in health education research * Discuss the use of ethnographic, case study and community-based participatory research in health education and health promotion * Explain different types of sampling design and calculate sample size and power in research * Develop a research proposal on a topic of choice | **Unit I.**  **Health Education Research Process** (10) |
| 1.1 Key steps in research process  1.2 Literature search(systematic database search) and review  1.3 Identifying, analyzing and writing research problem  1.4 Formulating research objectives and questions/hypothesis  1.5 Identification and operationalization of variables  1.5 Application of epidemiologic research design:  survey, case-control, randomized control and community trials in health education  1.6 Application of ethnographic, case study and community-based participatory research in the context of health promotion  1.7 Sample size calculation and sampling in quantitative and qualitative research  1.8 Development of a research proposal-introduction, methodology and work plan |
| * Develop qualitative and quantitative research tools * Calculate sample size and power and analyze data using confidence interval * Analyze data using descriptive and inferential statistics * Formulate and test hypothesis * describe methods of controlling confounding factors | **Unit 2: Research Techniques and Tools in Health Education** (15)  2.1 Tools and techniques of qualitative research- interview schedule, focus group discussion (FGD) and case study  2.2 Tools and techniques of quantitative research **-**individual interviews/schedule, self-administered questionnaire, observation/rating scales, attitude scale  2.3 Development and validation of research tools in quantitative and qualitative research  2.4 Simulations/Mock sessions on interviews and FGDs |
| * Explain measurement scales and apply them in quantitative data analysis * Apply data management skills such as data checking, coding, recoding, data entry and tabulation in manual quantitative data analysis * Develop data analysis framework in SPSS including defining variables and coding data * Enter and analyze data using SPSS * Organize data by frequency distribution and variability * Present data in tables, numbers and figures * Apply basic statistical tests in analyzing data * Be able to use qualitative data analysis software with proper procedures * Apply mix methods(qualitative and quantitative) and triangulate data * Apply techniques of minimizing errors and avoiding biases in health research process | **Unit III. Analysis of Quantitative and Qualitative Data in Health Education Research** (15)   * 1. Methods and procedures for quantitative data analysis      1. Types of measurement scales and their application in quantitative data analysis      2. Data management skills: Data checking, editing, coding, recoding, data entry and tabulation      3. Data analysis framework-Dummy tables,      4. Introduction to quantitative data analysis using SPSS software      5. Testing hypothesis- t-test, chi-square test, Z-test, correlation and multiple regression using SPSS   3.2 Methods and procedures for quanlitative data analysis  3.2.1 Thematic method  3.2.2 Procedures: Recording and transcribing, translating, identifying themes/sub-themes, coding data, ,categorizing and organizing data by codes/themes, writing memo, reducing and displaying data  3.2.3 Introduction to Software programs used in qualitative health research: Nvivo, Atlas ti  3.2.4 Application of mixed methods in health education research-concept and application (Data triangulation)  3.2.5 Biases and errors in research process including data analysis and interpretation |
| * Explain and apply basic steps of scientific report writing in thesis and research report * Develop format and template of research report and articles in the process writing * Apply writing tips while writing abstract, interpretation, discussion of findings, conclusion and recommendations * Explain factors that need to be considered while writing a research article for publication * Write citation with sources and references using APA styles * Describe concept and important of ethics in research * Explain process of taking informed consent * Adopt measures for avoiding plagiarism in research writings | **Unit V: Basics of writing Research Report and Ethics in Health Education Research (8)**   * 1. Basics of research report/scientific writing      1. Basic steps of scientific report/thesis and article writing      2. Developing format/template of thesis and research report/articles      3. Tips for writing abstracts, interpretation and discussion of findings, conclusion and recommendation      4. Techniques of citation and referencing using APA style   4.2 Ethics in Health Education Research  4.2. 1 Concept and importance of ethics in health research  4.2.2 Informed consent and confidentiality  4.2.3 Incentives for participation and involving vulnerable participants  4.2.4 Ethical Guidelines for health research in Nepal  4.2.5 Plagiarism in health education research |

*Note: The figure in the parenthesis indicate the approximate periods for the perspective units*

**4. Methods/Instructional Techniques**

The instructional techniques for this course comprise both general and specific methods

**4.1 General Instructional Techniques**

* Lectures
* Group discussions and presentations
* Guest speeches
* Reviews of research papers
* Library visits
* Home assignments

**4.2 Specific Instructional Techniques**

|  |  |
| --- | --- |
| **Unit** | **Activity and instructional techniques** |
| 1. | The teacher will pose the class short questions on basic process of health education research and discuss on them one after another. S/He will remind students of the research designs and present them with question-answer approach. The teacher will demonstrate literature search methods using key word search methods and Boolian operators. The teacher will give home assignment to each student to develop sample of research tools and present in the class.  The students will practice formulating research questions and hypothesis in the class. They will also discuss on methods of testing the hypothesis.  The teacher will present examples of dummy tables and framework for qualitative data analysis including data triangulation methods. The potential biases on health research will be discussed. Components of research proposal and tips on thesis writing will be presented. The students will review articles on writing thesis, articles and references/bibliography. The teacher will provide research papers to student groups and ask them to review data presentation and analysis methods including statistical analysis. The students will present group report, which will be followed by discussions and teacher comments. The teacher will give home assignment to individual students, where necessary. |
| 2. | As this unit focuses on building students' abilities in understanding and hands on skills in developing data collection tools both in qualitative and quantitative research. The teacher will, in addition to mini lectures and class discussions, present practical examples of data sets to students and challenge them to analyze data using appropriate methods. Students will read and review three qualitative research articles and compose brief reports detailing the articles’ main methodological features. After completing the three individual reviews students will compare and contrast the quality of the three articles. |
| 3. | The teacher will introduce/demonstrate basics of SPSS such as defining variables, data input, output saving and analysis (descriptive). The teacher will introduce NVIVO and Atlas ti as the software programs for analysis of qualitative data. S/He will give individual assignment to students. The assignment will be marked and results made available. |
| 4. | Students will be divided into small groups and asked to read NHRC ethical guidelines of Nepal as well as WHO ethical guidelines. They will discuss and present group works on ethical approval process, consent taking, confidentiality, participation of vulnerable children, biases and plagiarism. It will be followed by floor discussions and teacher comments. |

1. **Evaluation**

**5.1Internal Evaluation 40%**

The course teacher based on following activities will conduct internal evaluation:

1. Attendance 5 points
2. Participation in learning activities 5 points
3. Fist assignments. Review of research reports/articles 10 points
4. Second assignment: Mid-term exam 10 points
5. Third assignment: Write term paper on topics related to the course

10 points

**Total: 40 points**

* 1. **External Evaluation (Final Examination) 60%**

|  |
| --- |
| Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of semester.   1. Objective type question (Multiple choice 10 x 1ponts) 10 points 2. Short answer questions (6 questions x 5 points) 30 points 3. Long answer questions (2 questions x 10 points) 20 points |
| **Total 60 points** |

**6. Recommended Books**

**Recommended readings**

Abramson, J.H, and Abramson, Z.H. (2008) *Research methods in community medicine*: Survey, epidemiologic research, programme evaluation and clinical trial. West Sussex, England: John Wiley and Sons.

Argyrous, G. (2000). *Statistics for social and health research*. London: Sage publication (For Unit I and III)

Carver, R.H., & Nash, J.G. (2012). Doing data analysis using SPSS version 18. Boston, MA: Cengage Learnig (For Unit III)

Marek, P. The basics of scientific writing in APA styles. Kennesaw State University.

Murchison, J.M. (2010). Ethnography essentials. San Francisco: John Wiley and Sons.

Nepal Health Research Council(2011), *National Ethical Guidelines For Health Research in Nepal And Standard Operating Procedures* , Kathmandu, (Unit 4)

Peat, J. 2002. *Health science research: Handbook of quantitative research*. NSW, Australia: Allen & Unwi. (For Unit I and III)

PP Simkhada, , E van Teijlingen & V Hundley(2013). Writing an academic paper for publication, *Health Renaissance* 11(1): 1-5 (Unit IV)

Ulin, P.R., Robinson,E.T. & Tolley, E.E. (2005). *Qualitative methods in public health. A field guide for applied research*. San Francisco: Jossey-Bass. (For I, II and III )

Salzar, L.F, Crosby. R.A. & Diclemente, R.J. (2015). *Research methods in health promotion*. San Francisco CA: Jossey-Bass (Unit I,II, III & IV )

Stewart, A. (2002). *Basic statistics and epidemiology. A practical guide*. Abingdon, UK: Radicliffe Medical Press. (For unit I and III)

WHO (1994). *Teaching Health Statistics Twenty Lessons and Seminar Outlines*, New Delhi: CBS Publishers and Distributors(Unit II and III)

**Reference Books and Articles**

Andrew, S., and Halcomb, E.J. (2009*). Mixed method research in nursing and the health sciences.* West Sussex, England: Blackwell Publishing.

Budhathoki, C.B., and Wagle, B.P. (2069 BS). Community organization and community health (in Neplai). Kathmandu: Pinnacle Publication.

Budhathoki, C.B. (2012). *Unheard voices of people on health. Case studies from rural areas of Nepal. A source book of case study research*. Kathmandu, Pinnacle Publication

CDC, *Principle of epidemiology in public health practice*. Available from [www.cdc.gov/training/products/ss1000](http://www.cdc.gov/training/products/ss1000)(Unit 1)

Denzin, N. K. & Lincoln, Y. S. (2005). *The Sage handbook of qualitative research* (3rd Ed.). Sage Publications Inc

Devkota, B. (2068 BS). *Health research methodology*. Kathmandu, Educational Resource and Development Center Nepal

Green, J., and Thorogood, Nicki (2004). *Qualitative methods for health research*. London: Sage Publication

Mahajan, BK (1991).Methods *in Biostatistics-for Medical Students and Research Workers.* New Delhi, India, Jaypee Brothers Medical Publishers (P) Ltd.

Silverman D,(2001). Interpreting Qualitative data: methods for analysis talk, text andinteraction,2nd edition, London, Sage

Sylvia, WS (2004). *Biostatistics and epidemiology. A primer for health and biomedical professional.* New York: Springer.

Takashakkori, A, & Teddlie ,C.(2002).*Handbook of mixed methods in the social and behavioural research.* Thousan Oaks, CA, Sage Publication.

WHO (1992). Health research methodology: A Guide for Training in Research Methods

World Health Organization (2000). Operational Guidelines for Ethics Committees That Review Biomedical Research, Geneva(Unit IV)

**Course Title: Teaching Methods of History**

Course No: Hist. Ed. 535 Nature of course: Theoretical

Level: M. Ed Credit hours: 3

Semester: Third Teaching Hours: 48

1. **Course Description**

This is a specialized course in history education which aims to provide the students with the knowledge and skills to help them to teach history effectively. It includes contents such as objectives, curriculum designing process and its evaluation, use of different methods of teaching history, construction and use of instructional plans, preparation and administration of different evaluation tools. Similarly it deals with importance of historical visits with planning, implementation, report writing and presentation.

1. **General Objectives**

The general objectives of this course are as fallows-

* To help the students develop the skills and competencies required for history teaching.
* To familiarize the students with the process of curriculum planning, designing and evaluating techniques.
* To help the students to develop skills in using different methods of teaching in class room.
* To enable the students to develop the skills of instructional planning, construction and use of different evaluation tools, prepare and use of different teaching aids.
* To enable the students in planning and organizing the visit of historical places, report writing and presentation.

1. **Specific Objectives and Contents**

|  |  |
| --- | --- |
| Specific Objectives | Contents |
| * Explain the concept of history and history education * Describe the aims, objectives and nature of history teaching * Point out the recent trends in teaching history | **Unit I: Introduction (5)**   * 1. Concept of history and history education   2. Aims and objectives of teaching history   3. Recent trends in teaching history |
| * Identify the basic principles of planning curriculum. * Points out the basic approaches for selecting subject matters in history. * State the techniques of organizing subject matters in history. * Highlight on the curriculum planning and designing process in T.U. * Point out criteria for evaluating history curriculum * Analyze the weakness of history curriculum of B.Ed. and M.Ed. course * Describe the history of history curriculum development in Nepal | **Unit II: Curriculum Planning and Practices in History Education (12)**  2.1. Basic principles of the planning curriculum  2.2. Different approaches for selecting subject matters  2.3. Principles for organizing subject matters  2.4 A glimpse on curriculum designing process in T.U.  2.5. Criteria for evaluating history curriculum  2.6. Overview of B.Ed. and M.Ed. history courses  2.7. A brief survey on the development of history curriculum in Nepal |
| * Explain the needs of teaching aids in teaching history * Classify the types of teaching aids and their use | **Unit III: Aids and Equipment in teaching History (6)**  3.1. Need of teaching aids in teaching history  3.2. Types of audio-visual aids and their use e.g. white board, graphs, charts, pictures, models, slides and fieldtrips |
| * Explain the need of various history teaching methods * Point out the context for the use of different methods * Mention the strength and weaknesses of different methods | **Unit IV: Methods of Teaching History (12)**  4.1. Need of appropriate and variety of methods  4.2. Teaching methods e.g. lecture, discussion, source, project, inquiry, field trip  4.3. Implication, strength and weakness |
| * Explain the need and importance of instructional plans * Identify the types instructional plans * Construct models of different instructional plans | **Unit V: Teaching Planning in History (5)**  5.1. Need and importance of instructional planning  5.2. Types of instructional plans- work, unit, lesson  5.3. Preparation and use of plans |
| * Point out the types of evaluation devices in history * Describe the context for adopting subjective and objective test items * Prepare model questions of both types * State the ways to determine the quality of test items | **Unit VI: Types of Evaluation Devices (8)**  6.1. Types of evaluation devices  6.2. Subjective and objective test and context for use  6.2. Construction of subjective and objective test items  6.4. Quality assessing techniques of test items |

1. **Instructional Techniques**
   1. **General techniques**

The theory classes depend on lectures, question answer, group discussion and group work in the class room.

* 1. **Specific Instructional Techniques**

|  |  |
| --- | --- |
| **Units** | **Activities and Instructional Techniques** |
| **Unit I : Introduction** | **Discussion, Question Answer, Reading assignment and Presentation** |
| **Unit II: Curriculum Planning and Practices in History** | **Library assignment , report presentation and Discussion** |
| **Unit III : Aids and Equipments in history Teaching** | **Individual and Group work Assignment, Demonstration and Discussion** |
| **Unit IV: methods of teaching** | **Active participatory approach rehearsal, Individual report presentation and discussion** |
| **Unit V: Teaching Planning in History** | **Discussion, Individual work assignment and presentationProject Work, Term paper** |
| **Unit VI: Evaluation Devices in teaching History** | **Individual and group work, class room presentation and discussion** |

1. **Evaluation**
   1. **Internal Evaluation 40%**

Internal evaluation will be conducted by course teacher based on following activities

1. Attendance 5 points
2. Participation in Learning activities 5 points
3. First assignment 10 points
4. Second assignment (Midterm exam) assessment 10 points
5. Third assignment/ assessment 10 points

Total 40 points

* 1. **External Evaluation (final examination) 60%**

Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester. The types and number of questions to be included in the final paper are as follows.

1. Objective type question (multiple choice 10x1 point) 10 points
2. Short answer question (6 questions x5 points) 30 points
3. Long answer questions (2 questions x 10 points) 20 points

Total 60 points

1. **Recommended Books and reading materials (Including relevant published articles in national and international journals)**

**Recommended Books**

Kochhar, S.K. (1981).*Teaching History*. Delhi: Sturling Publishing Pvt.Ltd.

**(Unit I-VI)**

Upadyaya, SRP. (2049). *Itihas Shikshan Bidhi*. Kathmandu: ratana Pustak Bhandar.

**(Unit I-VI)**

Ghate, VD (1991). *The Teaching History.* Teaching in India series 6th Edition.

**(Unit I-VI)**

**References**

Adhikari, K. K. (1992).  *Nepal historiography, problem and solutions.*  A paper presented in seminar organized by Central Department of History, T.U.

Chaffer, J. & Taylor L. (1975). *History and history teacher.* London: George Allan and Unwin.

Print, M. (1993).  *Curriculum development and design.* London: George Allan and Unwin.

Tyler, R.W. (1974). *Basic principles of curriculum and instruction.* London: open University publication.

Wagle, M. P. (1994). *Research methods in education and social sciences.* Kathmandu: M.K. Publisher.

Gyawali, D. (1997). *A handbook for research scholar.* Kirtipur: Kalpana Gyawali.

**Course Title: ......................**

Course No: Hist. Ed. 536 Nature of course: Theoretical

Level: M. Ed Credit hours: 3

Semester: Third Teaching Hours: 48

**This course is being Prepared**

**History of Modern Japan (1868-1945)**

Course No: Hist. Ed. 537

Nature of course: Theoretical

Level: M. Ed Credit hours: 3

Semester: Third Teaching Hours: 48

1. **Course Description**

This Course aims to acquaint the students with the major events in the Japanese History from the time of Meiji Restoration (1868) to the end of 2nd world war. This course intends to focus of Meji Restoration and Meiji reforms especially the constitution of 1889, Japanese foreign policy and her relation with China and Korea relating the two most important wars in the Japanese history along with the Anglo Japan Alliance, the millstone in Japanese history. The 1st and 2nd world wars and Japan's success and her surrender in 2nd world war.

1. **General Objectives**

The general objectives of this course are as follows:

* To make the students familiar with Tokugawa rule in Japan and Meiji Restoration (End of Isolation).
* To familiarize the student with Meiji Reforms and Constitution.
* To enable the students in analyzing the Japanese foreign policy and the wars with China and Russia.
* To provide the students with depth knowledge of Japanese participation in the world war I and II.
* To familiarize the students with the major events in Korean History.

1. **Specific Objectives and Contents**

|  |  |
| --- | --- |
| **Specific Objectives** | **Contents** |
| * Explain Tokugana Rule in Japan * Analyze the causes of end of Isolation | **Unit I: Background of Japanese History (5)**   * 1. Japan under Tokugawas   2. End of Isolation |
| * Explain Meiji Restoration * Discuss the Reforms in Education, economy, industry and army under Meiji Rule. * Critically Examine the Meiji Constitution of 1889. | **Unit II: Meiji Japan**  **( 8)**  2.1 Meiji Restoration  2.2 Reforms in Education, Economy, Industry and Army  2.3 Meiji Constitution 1889 |
| * Explain the relation between Japan and China * Explain the Japanese Interest in Korea * Analyze the causes of Sino Japan war 1894-95 * State the causes and effects of Anglo Japan Alliance 1902 * Critically analyze the causes and effects of Russo Japan war 1904-5 | **Unit III: Meiji Foreign Policy (8 )**   * 1. Japan and China   2. Japan and Korea   3. Sino Japan war 1894-95   4. Anglo Japan Alliance 1902   5. Russo Japan war 1904-5 |
| * Discuss the steps taken Japan to fulfill her ambition in China * Critically examine the causes of 21 Demands * Explain Siberian Intervention by Japan * Discuss the policy of New Order in Asia by Japan after I world war * Discuss the Japanese success in the II world war * Analyze critically why American intervention was necessary in Japan * Access the works of Gen. Douglas Mac Author and end of U.S. military rule in Japan | **Unit IV: Japan and World war I and II (12 )**  4.1 Japanese ambition in China and 21 Demands    4.2 Siberian Intervention  4.3 Japanese Policy of New  Order in Asia after I world war  4.4 Japanese success in the II world war  4.5 American Intervention and Administration of Gen. Douglas Mac Author  4.6 End of U.S. Military Rule in Japan |
| * Explain the origin of Korea as a nation * Discuss the Japanese aggressive policy in Korea * Analyze critically the division of Korea * Explain the Peoples Democracy in North Korea * Introduce the constitutional government of South Korea * Identify the causes of the war between South and North Korea | **Unit V: Korea in the Far Eastern History (15 )**  5.1 Origin of Korea as a nation  5.2 Japanese rule in Korea  5.3 Division of Korea in 1948  5.4 Peoples Democracy in North Korea  5.5 Constitutional Government in South Koria  5.6 War between North and South Korea |

Not: The figures within parenthesis indicate the approximate teaching hour affected respective unit.

1. **Instructional Techniques**
   1. **General techniques**

The theory classes depend on lectures, question answer, group discussion and group work in the class room.

* 1. **Specific Instructional Techniques**

|  |  |
| --- | --- |
| **Units** | **Activities and Instructional Techniques** |
| Unit I: Background of Japanese History | Field visit and group discussion |
| Unit II: Meiji Japan | Seminar, individual report writing, Group discussion and presentation |
| Unit III : Meiji Foreign Policy | Group report, Seminar |
| Unit IV: Japan and World war I and II | Case study, book review |
| Unit V: Korea in the Far Eastern History | Project Work, Term paper |

1. **Evaluation**
   1. **Internal Evaluation 40%**

Internal evaluation will be conducted by course teacher based on following activities

1. Attendance 5 points
2. Participation in Learning activities 5 points
3. First assignment 10 points
4. Second assignment (Midterm exam) assessment 10 points
5. Third assignment/ assessment 10 points

Total 40 points

* 1. **External Evaluation (final examination) 60%**

Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester. The types and number of questions to be included in the final paper are as follows.

1. Objective type question (multiple choice 10x1 point) 10 points
2. Short answer question (6 questions x5 points) 30 points
3. Long answer questions (2 questions x 10 points) 20 points

Total 60 points

1. **Recommended Books and reading materials (Including relevant published articles in national and international journals)**

**Recommended Books**

Clyde, H.P. & Beers F.B. (1971). *The Far East: A History of Western Impact and Eastern Response 1830-1970.* New Jersey: Printice Hall Inc-Englewood Cliff.

**(Unit I and V)**

Fairbank, J.K., *Reischaure, E.O. & Craig, A.M. (1972).* East Asia Tradition and Transformation. Modern Asia Edition.

**(Unit I-V)**

Kumar, S. & Jain S. (1976). *Far East and Modern Times.* Delhi: S. Chand and Company.

**(Unit I-V)**

Reischarer, E.O (1978). *Japan the Story of a Nation*. Tokyo: Chaels E. Tuttle Company.

**(Unit I-V)**

Vinacke, H.M.(1978). *A history of Far East in modern Times.* New Delhi: Kalyani Publisher.

**(Unit V)**

**References**

Butow, R.J.C. (1954). *Japan's Decision to Surrender*. Standford University Press.

Dower, J.W. (1967). *Empire and Aftermath: Yoshida Shigeru and Japanese Experience 1878-1954.* Cambridge: Council on East Asian Studies, Harward Univesrsity Press.

Hall, J.W. (1974). *Japan from Pre History to Modern Times.* Berkeley: University of California

Jean, M. & Bergere, M. (1986). *China from the Opium war to 1911 Revolution.* Translated from the French by Anne Destennay. Delhi:Khosla Publishing House.

Jones, F.C. (1972). *Japan's New Order in East Asia: Its rise and Fsll 1937-1945.* London: Oxford University Press.

Nakane, C. (1972). *Japanese Society.* Berkeley: University of California Press.

Course title: **Economic History of Modern Nepal (1769-1991)**

Course No: 538 Nature of course: Theory

Level: M. Ed Credit hours: 3 Credit Hours

Semester: Third Teaching Hours: 48 hours

1. **Course Description**

This is a specialization course on Economic History of Modern Nepal (1769-1991). This course is designed to make students able to describe the economic history of Modern Nepal. The course emphasizes the wide range of economic activities done during 1769-1990. It gives the emphasis on the historical economic activities and this course is both theory (final exam) and practices (assessment paper, presentation, group work, report writing, term paper based on secondary data or review of literature and document, home assignment, etc) in nature.

1. **General Objectives**

* To enable the students in analyzing the features of land tenure system.
* To make the students familiar with the pattern of agriculture.
* To acquaint the students with forest and water resources of Nepal.
* To impart the knowledge about the causes of the growth and development of industry.
* To familiarize the students with the diversification of internal and external trade.

**3. Course Outlines**

|  |  |  |
| --- | --- | --- |
| **Specific Objectives** | **Content** | **Period** |
| * Describe the background of land system. * Compare the nature and features of Raikar, Birta, Guthi and Kipat. * Explain the Birta eradication act 2016 (causes and effect) * Explain the contribution of labour force in land system. | **Unit - I : Land Tenure System**  1.1 Background of land tenure system.  1.2 Nature and features of Raikar, Birta, Guthi and Kipat.  1.3 Birta eradication act 2016 (causes and effect)  1.4 Contribution of labour force in land system. | (7) |
| * State the importance and patterns of agriculture. * Explain the land reforms act 2021 and its implication * Discuss the different types of farming system. * Explain the crops grown in mountain hill, valley and terai. * Describe the livestock resources of Nepal. * Describe the diary framing system of modern Nepal. | **Unit - II : Pattern of Agriculture**  2.1 Importance of agriculture.  2.2 Land reforms act 2021 and its implication  2.3 Types of farming system.  2.4 Crops in the mountain, hill, valley and Terai.  2.5 Livestock  2.6 Diary framing | (11) |
| * Explain the importance of forest and water resources. * Point out the economic value of forest. * Discuss the use of forest products. * Discuss the hydropower building evaluate the benefits of water resources. * Describe the various methods of irrigation in Nepal. | **Unit-III : Forest and Water Resources**  3.1 Forest- economic value and use of forest product  3.2 Benefit of water resources  3.3 Hydropower  3.4 Irrigation | (10) |
| * Explain the growth of cottage and small scale industries. * Explain the role of micro cottage and small industries. * Discuss the development of agriculture based industries. * Describe the economic value of forest based industries. | **Unit- IV : Growth and Development of Industry**  4.1 Cottage and small scale industries.  4.2 Role of micro cottage and small industries  4.2 Agriculture based industries.  4.3 Forest based industries. | (9) |
| * Explore the diversification of internal and external trade. * Describe the pattern of internal trade of Nepal. * Analyze the economic importance of trade relation with India. * Explain the trade relation with Tibet and China. * Describe the trade relation with other countries. | **Unit V : Diversification of Internal and External Trade**  5.1 Internal trade.  5.2 Trade with India.  5.3 Trade with Tibet and China.  5.4 Trade relation with SAARC countries | (11) |

1. **Instructional Techniques**
   1. General techniques
2. **The theory classes depend on lectures, and question answer, group discussion and group presentation work and oral test in the class room.**
   1. Specific Instructional Techniques

|  |  |
| --- | --- |
| Units | Activities/work and Instructional Techniques |
| Unit I : Land Tenure System | Lecture/Group discussion |
| Unit II: Pattern of Agriculture | Home assignment and group presentation |
| Unit III : Forest and Water Resources | Individual report writing group discussion |
| Unit IV: Growth and Development of Industry | Term paper and presentation |
| Unit V: Diversification of Internal and External Trade | Group discussion and paper present |

1. **Evaluation**
   1. Internal Evaluation 30%

Internal evaluation will be conducted by course teacher based on following activities

1. Attendance 5 points
2. Participation in Learning activities 5 points
3. First assignment/ midterm exam 10 points
4. Second assignment/assessment (one or two) 10 points
5. Third assignment/assessment 10 points

Total 40 points

* 1. **External Evaluation (final examination) 60%**

Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester (proposed)

1. Objective type question (multiple choice 10 x1 point) 10 points
2. Short answer question (6 questions x5 points) 30 points
3. Long answer questions (2 questions x 10 points) 20 points

Total 60 points

**Recommended Books and reading materials (Including relevant published articles in national and international journals)**

Regmi, M.C. (1978). *A study of Nepal economic history (Reprint).* New Delhi : Manjushri Publishing House. **(For Units I-V)**

Regmi, M.C. (1984). *The state of economic surplus : Production Trade and resource Mobilization Early 19th century Nepal*. Varonashi : Nath Publishing House. **(For Units I-V)**

Regmi, M.C. (1988). *An economic history of Nepal (1846-1901).* Varonashi: Nath Publishing House. **(For Units I-V)**

Sen, Johar (1977). *Indo-Nepal trade in nineteenth century.* Calcutta : Fifwa K.L.M. **(for Unit V)**

Thapa, K.B. (1995). *Main aspects of socio-economic and administrative history of Modern Nepal*. Kathmandu : Ratna Pustak Bhandar. (**For** **Units I-V)**

Upadhya, S.P. (1990). *Indo-Nepal trade relations*. Jaipur : Nirala Publication **(for Unit V)**

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**References**

Haimmendofr. C.V. Furer (1975). *Himalayan trades : Life in high and Nepal.* London: Hohn Hurray Ltd.

Kirkpatrik, W. (1971). *An account of the kingdom of Nepal (Reprint)*. New Delhi: Manjushree Publishing House.

Regmi, M.C. ( ). *Thatched huts and stucco palaces, pesant and land lords in 19th century Nepal*. New Delhi : Vikash Publishing House.

Regmi, M.C. (1976). *Land ownership in Nepal*. Berkeley : University of California.

Regmi, M.C. (1978). *Land tenure and taxation system in Nepal (Vol. 4).* Kathmandu : Ratna Pustak Bhandar.

Seddon, P. et. al. (ed), (1981). *Pesant and workers in Nepal (Reprint)*. New Delhi : Viskash Publishing House.

Upetry, P.R. (1985). *Nepal-Tibet relation 1850-1930*. Kathmandu : Puga nara.

Upetry, P.R. (2053 B.S.). *A brief social economic and diplomatic history of Nepal*. Kathmandu : Sindhu Prakashan.

Vidya, T.R. (1992). *Nepal a study of socio-economic and political changes*. New Delhi : Anmol Publications.

Course Title: **Visual Programming**

Course No. : ICT Ed 535 Nature of course: Theoretical + Practical

Level: M.Ed. Credit Hour: 3 (2+1)

Semester: Third Teaching Hour: 80(32+48)

1. **Course Description**

This course provides skills to develop modern software programmes with graphical user interface using the language C# with ASP.net. The course covers most of the C# language. Student will build window-based and web-based forms, adding controls and setting properties for these controls.

1. **General Objective of the Course**:

* To enable students to create user controls in a Windows Forms application using Visual Programming Platform.
* To provide students knowledge and skills required for validating user input in a Windows Forms application
* To enable students to bind Windows Forms applications to various data sources by using Microsoft ADO.NET
* To enhance students capacity for creating an ASP.NET Web application project by using Visual Studio .NET.

1. **Course Outlines:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Specific Objectives** | **Contents** | **Teaching Hours** | |
| To explain the Microsoft .NET Framework and ASP.NET  To identify the .net IDE and .net working environment | **Unit I:Overview of .Net and C#**   * 1. .NET framework   2. CLR and FCL   3. Primitive Types and Namespaces   4. Statements and Expressions   5. Operators   6. Visual Studio IDE | | **2** |
| To recognized the basic types and inbuilt collection of c# platform | **Unit II: Types and Collection**   * 1. Classes and Structs   2. Members and Interfaces   3. Enums, Arrays and List<T>   4. List and Sequence Interfaces   5. Implementing Lists and Sequences   6. Dictionaries   7. Sets, Queues and Stacks   8. Linked Lists, Concurrent Collections   9. Tuples, Events properties and Methods   10. Generic Types | | **4** |
| Develop the basic application with use of control structure  Implement the error control mode using exception handling concept | **Unit III: C# - Flow Control and Exceptions**   * 1. Branching   2. Switching   3. Looping   4. Throwing Exceptions   5. Built-in Exceptions   6. Handling Exceptions   7. Chaining Catch Blocks   8. Finally | | **4** |
| Design and development of inheritance techniques use of class and its visibility mode | **Unit IV: Inheritance**   * 1. Inheritance and Conversions   2. Interface Inheritance   3. Generics, System. Object   4. Accessibility and Inheritance   5. Virtual Methods   6. Sealed Methods and Classes   7. Accessing Base Members   8. Inheritance and Construction   9. Special Base Types | | **6** |
| Develop the application use of events and methods  Apply the MDI and SDI in window based applications | **Unit V: Delegates, Lambdas, and Events**   * 1. Delegate Types   2. Inline Methods   3. Events   4. Delegates Versus Interfaces   5. Menus and Context Menus   6. MenuStrip, ToolbarStrip.   7. Graphics and GDI   8. SDI and MDI Applications   9. Dialogbox (Modal and Modeless)   10. Form Inheritance   11. Developing Custom, Composite | | **6** |
| Implement the LINQ in apps development process | **Unit VI: LINQ**   * 1. Query Expressions   2. Deferred Evaluation   3. LINQ, Generics, and IQueryable<T>   4. Standard LINQ Operators   5. Sequence Generation   6. Other LINQ Implementations | | **5** |
| Apply the file handling concept in C# | **Unit VII: Files and Streams**   * 1. The Stream Class   2. Windows and IRandomAccessStream   3. Text-Oriented Types   4. Files and Directories   5. Serialization | | **8** |
| Apply and use multithreading in C# | **Unit VIII: Multithreading**   * 1. Threads   2. Synchronization   3. Tasks   4. Other Asynchronous Patterns   5. Cancellation   6. Parallelism | | **5** |
| Test and check XAML framework | **Unit IX: XAML**   * 1. XAML-Based Frameworks   2. XAML Basics   3. Layout   4. Controls   5. Text   6. Data Binding   7. Graphics   8. Styles | | **3** |
| Develop the database application using ADO.net  Understands the integration concept of database in C# | **Unit X: ADO.NET and Windows Presentation Foundation(WPF)**   * 1. Connected Architecture   2. Disconnected Architecture   3. Working with Transaction   4. Windows Application using WPF   5. Data Binding   6. Data Template   7. Styles   8. Commands | | **10** |
| Configure and deploy an ASP.NET Web application. | **Unit XI: ASP.NET**   * 1. Web Application using ASP.NET   2. ASP.NET Architecture   3. Control-based Programming   4. User Interface Elements   5. Deployment   6. Web Sites, Applications, and Virtual Directories in IIS   7. ASP.NET Diagnostics and Health Monitoring | | **8** |
| Secure an ASP.NET Web application by using a variety of technologies.  Use validation controls to validate user input  Add functionality to server controls that are on an ASP.NET Web Form. | **Unit XII: ASP.NET Working With Data and Security**   * 1. Data Binding   2. State Management   3. Validation   4. Caching   5. IIS URL Authorization   6. Forms authentication   7. Role-based authorization   8. Trimming site maps with roles   9. Config file encryption | | **10** |
| Implement the AJAX concept to server site data handling in C#  Apply the MVC framework to application development process | **Unit XIII: ASP.NET AJAX and MVC**   * 1. ASP.NET Ajax Introduction   2. ASP.NET Ajax Server Controls   3. ASP.NET Ajax Server Data   4. ASP.NET Ajax Client-side Library   5. ASP.NET Ajax Control Toolkit   6. ASP.NET MVC   7. Web Application using MVC Pattern   8. Razor View and controller   9. Model | | **5** |
| Understand the interoperability concept of C#  Use of window components for platform independency | **Unit XIV: Interoperability**   * 1. Calling Native Code   2. Platform Invoke   3. COM   4. Windows Runtime   5. Unsafe Code   6. C++/CLI and the Component Extensions | | **2** |

1. **Instructional Techniques**

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

**5.1 General Techniques**

* Providing the reading materials to the students to familiarize the units.
* Lecture, question-answer, discussion, brainstorming, practical, and buzz session.

**5.2 Specific Instructional Techniques**

|  |  |  |
| --- | --- | --- |
| **Unit** | **Activity and instructional techniques** | **Teaching Hours (48)** |
| **V** | Develop the window form application and web based application with integration database |  |

**Note: *Specific Instructional Techniques may or may not require for each of the units mentioned in course outline.***

1. **Evaluation**
   1. **Evaluation (Internal Assessment and External Assessment):**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Nature of course** | **Internal Assessment** | **External Practical Exam/Viva** | **Semester Examination** | **Total Marks** |
| Theory | 40% | 20% | 40% | 100% |

***Note****: Students must pass separately in internal assessment, external practical exam / viva and or semester examination.*

* 1. **Evaluation for Part I ( Theory)**
     1. **Internal Evaluation 40%**

Internal evaluation will be conducted by course teacher based on following activities:

1. Attendance 5 points
2. Participation in learning activities 5 points
3. First assessment ( written assignment) 10 points
4. Second assessment ( Term examination ) 10 points
5. Third assessment ( Internal Practical Exam/Case Study) 10 points

|  |
| --- |
| Total 40 points |

**6.2.2 External Evaluation (Final Examination) 40%**

|  |
| --- |
| Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester.   1. Objective type question (Multiple choice 10questionsx1mark) 10 marks 2. Short answer questions (6 questions x 5 marks) 30 marks |
| Total 40 marks |

* 1. **Evaluation for part II (practical) 20%**

|  |  |  |
| --- | --- | --- |
| Nature of the course | Semester final examination by External Examiner | Total percent |
| Practical | 100% |  |

**6.3.1 Practical Examination Evaluation Scheme**

1. External assessment …………………………100%
2. Record book ………………………. 20%
3. Laboratory work exam/Case………..40%
4. VIVA………………………………..40%
5. **Recommended books and reading materials (including relevant published articles in national and international journals)**

Albahari, J., Albahari, B., & Drayton, P. (2012). *C# 5.0 in a nutshell* (5th ed). Beijing ; Sebastopol: O’Reilly.

Esposito, D. (2014). *Programming Microsoft ASP.NET MVC* (Third edition). Sebastopol, California: O’Reilly Media, Inc.

Ian Griffiths (2012), Programming C# 5.0, O'Reilly Media, Inc.

Evjen, B., Hanselman, S., & Rader, D. (2010). *Professional ASP.NET 4 in C# and VB*. Indianapolis, IN: Wiley Pub.

Sharp, J. (2013). Microsoft Visual C# 2013 step by step.

Stellman, A., & Greene, J. (2013). *Head first C#* (Third edition). Beijing: O’Reilly.

Course Title: **Learning Management System**

Course No. : ICT Ed 536 Nature of course: Theoretical + Practical

Level: M.Ed. Credit Hour: 3 (2+1)

Semester: Third Teaching Hour: 80(32+48)

* + - 1. **Course Description**

This course is aimed at Design and Develop Learning Management System software packages built to support the administrative functions and learning objectives of course delivery whether in online and face-to-face. The course will introduce software platforms that are commonly used in eLearning, distance education and online training. Instructional design models applied to using these tools in corporate training and performance development, developing lessons in schools and creating courses in higher education are presented and discussed and are implemented in hands-on projects

* + - 1. **General Objectives:**
* Enable student to integrate instructional design models to eLearning, distance education and online training
* Provide students knowledge required for comparing and contrasting synchronous and asynchronous learning
* Make students able to use basic functions of an LMS, LCMS or IMMS (integrated multimedia management system)
* Enhance capacity of students so that they can utilize different tools within the design & delivery of online training, eLearning and distance courses
* Enable students to evaluate different types of communication among students in online, eLearning, & distance courses within different software platforms
* Make students able to select an appropriate platform for a particular learning, training or performance development system
* Orient students about the benefits and drawbacks of different learning/content management systems and other distance learning platforms

1. **Specific Objectives and Contents**

|  |  |  |
| --- | --- | --- |
| **Specific Objectives** | **Contents** | **Hrs** |
| Describe the concept of modern digital learning concept | **Unit 1: Introduction to Digital Learning**   * 1. e-Learning, virtual learning and online learning   2. Synchronous and Asynchronous Learning   3. CBT, WBT, CAI, CMI   4. m-Learning   5. Adult Learning   6. Learner-led e-learning   7. Facilitated e-learning   8. Instructor-led e-learning   9. Embedded e-learning | 6 |
| Working with e-Learning 2.0 tools to learning | **Unit 2: E-learning 2.0**   * 1. NEW GENERATION OF WWW: WEB 2.0   2. Blogging   3. Collaboration   4. Digital Research Tools   5. Digital Storytelling   6. Live Chat   7. Podcasts and Video Podcasts   8. Social Networking   9. Virtual Reality Environments   10. Wikis | 4 |
| List out the Digital learning infrastructure  Search the latest mode of e-Learning infrastructure | **Unit 3: Infrastructure of Digital Learning**   * 1. Arrangement of infrastructure   2. Computer Network   3. Cloud Computing   4. Service agreement policy | 4 |
| Create a virtual Learning environment using web based webinar and VC | **Unit 4: Video Conference and Webinar**   * 1. Concept of Video conference   2. Tele-presence   3. Webinar   4. Tools for Webinar and Video conferencing | 6 |
| Integrate the instructional design principle in courseware design | **Unit 5: Instructional Design**   * 1. Merrill's First Principles of Instruction   2. ADDIE Model   3. Dick and Carey Model   4. Kemp's Instructional Design Model   5. Gagné's Nine Events of Instruction   6. Bloom's Learning Taxonomy | 8 |
| Compare the FOSS and proprietary LMS | **Unit 6: Open Source in LMS**   * 1. History of the Free and Open Source Movement   2. FOSS Philosophy   3. Principles of Open Source and Learning   4. Constructivism and Open Source   5. Developing a community of open educators   6. Opens sources software   7. Importance of open source LMS | 10 |
| Set up open sources base LMS | **Unit 7: Configuration for LMS system environment**   * 1. Configuration Web Servers   2. Configuration of Database Server   3. Configuration of mail server | 12 |

|  |  |  |
| --- | --- | --- |
| Configuration open sources LMS environment | **Unit 8: configuration and Customization of open sources LMS software**   * 1. Installation and Managing a LMS site   2. Authentication and Managing account   3. Roles and permissions   4. Security in LMS site   5. Performance and Backup   6. Server settings   7. Managing a course in LMS   8. Managing content in LMS | 14 |
| Define student evaluation system in e-Learning  List out the LMS standards with indicators | **Unit 9: Evaluation and collaboration in LMSand Standards**   * 1. Evaluation methods   2. Pedagogical evaluation scheme   3. Collaboration with open tools   4. Standards: SCORM, SCORM components, AICC, IMS, IEEE, ARIADNE | 10 |
| Design learning policy | **Unit 10: e-learning Policy**   * 1. Importance   2. Types of policy   3. Open standards for policy | 4 |

1. **Instructional Techniques**

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

**5.1 General Techniques**

* Providing the reading materials to the students to familiarize the units.
* Lecture, question-answer, discussion, brainstorming, practical, and buzz session.

**5.2 Specific Instructional Techniques**

|  |  |  |
| --- | --- | --- |
| **Unit** | **Activity and instructional techniques** | **Teaching Hours** |
| **V** | Configure the latest MOODLE LMS open sources software |  |

**Note: *Specific Instructional Techniques may or may not require for each of the units mentioned in course outline.***

1. **Evaluation**
   1. **Evaluation (Internal Assessment and External Assessment):**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Nature of course** | **Internal Assessment** | **External Practical Exam/Viva** | **Semester Examination** | **Total Marks** |
| Theory | 40% | 20% | 40% | 100% |

***Note****: Students must pass separately in internal assessment, external practical exam / viva and or semester examination.*

* 1. **Evaluation for Part I ( Theory)**
     1. **Internal Evaluation 40%**

Internal evaluation will be conducted by course teacher based on following activities:

1. Attendance 5 points
2. Participation in learning activities 5 points
3. First assessment ( written assignment) 10 points
4. Second assessment ( Term examination ) 10 points
5. Third assessment ( Internal Practical Exam/Case Study) 10 points

|  |
| --- |
| Total 40 points |

**6.2.2 External Evaluation (Final Examination) 40%**

|  |
| --- |
| Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester.   1. Objective type question (Multiple choice 10questionsx1mark) 10 marks 2. Subjective questions (6 questions x 5 marks) 30 marks |
| Total 40 marks |

* 1. **Evaluation for part II (practical) 20%**

|  |  |  |
| --- | --- | --- |
| Nature of the course | Semester final examination by External Examiner | Total percent |
| Practical | 100% |  |

**6.3.1 Practical Examination Evaluation Scheme**

1. External assessment …………………………100%
2. Record book ………………………. 20%
3. Laboratory work exam/Case………..40%
4. VIVA………………………………..40%
5. **Recommended books and reading materials (including relevant published articles in national and international journals)**

Holmes, B., & Gardner, J. (2006). *E-learning: concepts and practice*. SAGE Publications.

Morrison, D. (2003). *E-learning strategies: how to get implementation and delivery right first time*. New York: Wiley.

Barrington, R. (2014). *Moodle Gradebook*. Birmingham: Packt Publishing.

Driscoll, M., &Carliner, S. (2005). *Advanced web-based training strategies: unlocking instructionally sound online learning*. Pfeiffer.

1. **Reference materials**

Conole, G. (2013). *Designing for learning in an open world*. New York , Springer.

*Marc J Rosenberg (2000), “E-Learning: Strategies for Delivering Knowledge in the Digital Age”, McGraw-Hill Education,*

Horton, W. K. (2000). *Designing Web-based training: how to teach anyone anything anywhere anytime*. New York: Wiley.

*http://moodle.com/*

Course Title: **Software Project Management**

Course No. : ICT Ed 537

Nature of course: Theoretical + Practical

Level: M.Ed. Credit Hour: 3 (1+2)

Semester: Third Teaching Hour: 80(16+64)

1. **Course Description**

This course is meant for the students who major ICTE in M.Ed. from Faculty of Education Tribhuvan University. This course, Software Project Management(SPM) introduces a number of topics such as Introduction of software Project Management, Project Planning , Software Effort Estimation, Project Risk Management, Human Factors and Leadership Team Organization, and Major Project (Real world project Development). This is a practical course. Students are expected to develop the real life problem solving software project. After accomplishing this course, students will be able to apply software project management techniques.

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1. **Objectives**

The overall general objectives of this course are as follows:

1. To provide students basic knowledge of software project management principles
2. To enable students to differentiate software projects with other kinds of projects
3. To orient students about selecting an appropriate project development methodology
4. To enable students to identify project risks, monitor and track project deadlines
5. To equip students with skills required for team and conflict management.
6. To familiarize students about the software project management principles in real life scenarios
7. To make students able to evaluate independently a particular topic of research interest and critically analyse the issues
8. **Course Outlines:**

|  |  |  |
| --- | --- | --- |
| **Specific Objectives** | **Contents** | **Hrs** |
| * To define the scope of software project management * To distinguish between software and others types of development projects * To understand some problems and concerns of software project managers * To define the stages of a software project * To identify the stakeholder of a project and their objectives and ways of defining the success in the meeting of these objectives | **Unit I: Introduction of software Project Management**   * 1. Projects and Project Characteristics   2. Project Constraints   3. Problems with Software Projects   4. Software Project Failures & Major Reasons   5. Software Project Management   6. Project Management Framework Project   7. Stakeholders   8. Project Organisation Types   9. Project Charter. | **6** |

|  |  |  |
| --- | --- | --- |
| * To produce an activity plan for the project * To estimate the overall duration of the project * To create a critical path and a precedence network for a project | **Unit II: Project Planning**   * 1. Definition Planning   2. Planning Tasks   3. Work Breakdown Structure (WBS),   4. Activity Planning   5. Activity Sequencing   6. Time Scheduling   7. Gantt Chart   8. PERT/CPM   9. SQA and Test Plan   10. Resource Plan   11. Communication Plan   12. Project Monitoring and Control   13. Earned Value Analysis | **6** |
| * To avoid the dangers of unrealistic estimates * To understand the range of estimating methods that can be used * To estimate projects using a bottom-up approach * To count the function points and object points for a system * To understand the COCOMO approach to developing efforts methods. | **Unit III: Software Effort Estimation**   * 1. Software Effort Estimation   2. Need for Software Estimation   3. Software Estimation Process   4. Software Estimation Techniques   5. Expert Judgment based Estimation   6. LOC, Function Point and Object point Analysis   7. COCOMO cost estimation method | **6** |
| * To identify the factors putting a project risk * To categories and prioritize action for risk elimination and containment * To quantify the likely effects of risk on project time-scales | **Unit IV:** Project Risk Management   * 1. Risk Identification,   2. Top 10 Software Project Risks   3. Risk Analysis and Prioritization   4. Risk Response Planning   5. Risk Resolution   6. Risk Tracking and Control | **5** |
| * To identify some of the factors that influence people’s behavior in a project environment * To improve group working * To use the most appropriate leadership styles * To take steps to reduce unnecessary stress and threats to health and safety | **Unit V: Human Factors and Leadership Team Organization**   * 1. Motivation   2. Communication,   3. Handling Difficult People   4. Leadership and health safety   5. Conflict resolution | **7** |
| * To develop the live project with real problems | **Major Project** | **50** |

1. **Instructional Techniques**

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

**5.1 General Techniques**

* Providing the reading materials to the students to familiarize the units.
* Lecture, question-answer, discussion, brainstorming, practical, and buzz session.

**5.2 Specific Instructional Techniques**

|  |  |  |
| --- | --- | --- |
| **Unit** | **Activity and instructional techniques** | **Teaching Hours (50)** |
| **V** | Develop Live project with use latest programming tools and evaluated by external  Provide the supervisor to individual based project by college |  |

**Note: *Specific Instructional Techniques may or may not require for each of the units mentioned in course outline.***

1. **Evaluation**
   1. **Evaluation (Internal Assessment and External Assessment):**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Nature of course** | **Internal Assessment** | **External Practical Exam/Viva** | **Semester Examination** | **Total Marks** |
| Theory | 40% | 40% | 20% | 100% |

***Note****: Students must pass separately in internal assessment, external practical exam / viva and or semester examination.*

* 1. **Evaluation for Part I ( Theory)**
     1. **Internal Evaluation 40%**

Internal evaluation will be conducted by course teacher based on following activities:

1. Attendance 5 points
2. Participation in learning activities 5 points
3. First assessment ( written assignment) 10 points
4. Second assessment ( Term examination ) 10 points
5. Third assessment ( Internal Practical Exam/Case Study) 10 points

|  |
| --- |
| Total 40 points |

**6.2.2 External Evaluation (Final Examination) 20%**

|  |
| --- |
| Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester.   1. Objective type question (Multiple choice 10questionsx1mark) 10 marks 2. Short answer questions (2 questions x 5 marks) 10 marks |
| Total 40 marks |

* 1. **Evaluation for part II (practical) 40%**

|  |  |  |
| --- | --- | --- |
| Nature of the course | Semester final examination by External Examiner | Total percent |
| Practical | 100% |  |

**6.3.1 Practical Examination Evaluation Scheme**

1. External assessment …………………………100%
2. Synopsis ………………………. 10%
3. Final Live project Report ………..20%
4. Final product Demo …………….40%
5. VIVA………………………………..30%
6. **Recommended books and reading materials (including relevant published articles in national and international journals)**

Bob Hughes and Mike Cotterell: Software Project, Management latest edition, McGraw-Hill,

Bruegge and Allen H. Dutoit (2010) Object Oriented Software Engineering – using UML, Third Edition, Prentice Hall,

**Course Title :** **ICT Education Theories and Practices**

**Nature of the course: Theory**

**Course No. ICT.Ed. 538 Credit hours:** 3

**Level: M.Ed. Teaching Hour 48**

**Semester : Third**

1. **Course Description**

This course is meant for the students who major ICTE in M.Ed form Faculty of Education Tribhuvan University. It introduces historical and philosophical development of ICT education and the use of ICT in education in different dimensions from its origin to its development in 21st century. The students will be acquainted with the changing face of higher education in the 21st century with the introduction of ICT in education. Several issues emerging from the use of ICT in education in the field of pedagogy, learning management, learning theories, curriculum making, professional development, assessment and evaluation, and overall form of higher education as appeared in the world are included in the course. Students are expected to learn the contents working on problem base inquiry approach. This is a theoretical course however with full of projects to be completed.

1. **General Objectives**

* Orient the students to relevant theories of ICT education
* Understand and analyze ICT education status in developed and developing countries.
* Empower the students to contribute in incorporating ICT into different subjects curriculum development
* Provide theoretical basis for analyzing the issues, challenges and seeking way forward in curriculum development, e-pedagogy, assessment and evaluation.
* Exposure on skills of ICT in designing teaching lessons in different subjects.
* Enhance competencies on planning professional development activities for ICT professionals
* Learn research base knowledge regarding ICTs based education

1. **Content Elaboration**

|  |  |
| --- | --- |
| **Objectives** | **Content** |
| * Sketch the historical development of ICT and ICT Education * Explain the theories of ICT education in relation to general education theories * Critically examine the present status of ICT use in school and higher education * Discuss on the philosophy of ICT education in its epistemology, ontology and methodology of learing. | **Unit I. ICT Education Philosophies and related theories 8 pds**  Historical Development  Philosophy of ICT Education: epistemology, ontology and methodology in learning  ICT education theories from the perspective of different schools of psychology : behaviourism, cognitivism and humanism, Constructivism, Connectivism, and community of practice, |
| * Contrast the Nepalese education and other countries education in reference to planning and use of ICT for access, quality, and relevance. * Develop a contrasting picture of ICT use status, issues and challenge in Nepalese higher and school education | **Unit II: ICT Education Practices in Different Countries 8 pds**  Present Status  ICT for Education of 21st Century  ICT in Nepalese Education:  ICT Master Plan 2013,  ICT in schools and universities  Blending e-learning in conventional system  Open universities with online learning  Online Technical and vocational education  Access to e-database and e-learning  Issues and challenges of ICT base education management |
| * Analyse different research methods used in ICT education and e-learning researches * Critically examine the ideology of digital deschooling * Evaluate the value of e-learning/online learning to the conventional learning system for the knowledge society * Argue on the possibility of inclusive education through ICT based learning management * Draw findings of different researches in ICT and e-learning as lesson learning for planning of ICT base education | **Unit III. Research in e-learning and ICT Education: Some readings 11 pds**  Quantitative vs qualitative research in e-learning and ICT education  Areas of research in e-learning and ICT Education  Digital technology and learning  ICT and access to education  ICT and technical and vocational education  ICT and integration to different subjects teaching and learning  ICT and development  Experimental Ethnographic Simulation  Survey in doing research in e-learning and ICT Education  Some readings of researches in ICT education  Technology and the reconstitution of schools and schooling  Reconsidering the ideology of Digital Deschooling  Teaching in the knowledge society: Between technology and competence  Digital Divide: Students' use of the internet and emerging forms of social inequalities  e\_learning and teachers' professional development |
| * Differentiate pedagogy and andragogy * Explain the differences in e-pedagogy and conventional pedagogy in reference to children and adult learning * Prepare model lessons/modules blending e-pedagogy and conventional pedagogy * Design programme for e-mentoring in school and university learning managment | **Unit IV. Pedagogy and learning with ICT 6 pds**  Introduction to adult pedagogy(andragogy)  e-pedagogy and conventional pedagogy  blending e-pedagogy in conventional pedagogy  e-learning and problem base learning: possibility and challenges of integration  Use of e-learning in open and distance learning  ICT enhanced learning  E-mentoring in school and higher education  Learning environment and technologies |
| * Examine on teaching different subject susing ICTs * Draw selected issues in using ICTs in teaching different subjects and suggest the mitigation measures. | **Unit V. Issues in teaching using ICT 6 pds**  Issues in design and technology teaching  Issues in language teaching  Issues in mathematics and science teaching  Issues in social studies teaching  Quality issues in (higher) education  Ways forward for addressing the issues |
| * Explain the components of ICT education professional development. * Illustrate the professional competencies of ICT education teachers and ways of developing the competencies * Analyse the profession development of ICT education professional based on the current theories and practiced models in teacher development/training * Prepare course of teachers' professional development using e-approaches, community of practice | **Unit VI. Professional Development in ICT Education 6 pds**  E-learning and teachers professional development  Some models of ICT education Professional development  ICT professional training and education  Course preparation and implementation  Copy rights and code of conduct for using e-resources |

1. **Instructional Strategy**

**4.1.1 General Instructional Techniques**

In general instruction shall be made on the basis of lectures, group assignment and project presentation by the students in classroom. The instruction will be made using all possible ICT devices and technology.

**4.1.2 Specific Instructional Techniques**

The students have to go through the reading text given by the course teacher in detail based on the guidelines and project works assigned r. The course teacher will provide projects to the individual students and the students have to complete the tasks and share to other friends using web 2. technology. The interaction between students will be recorded and assessment scores will be provided. Some of the activities will be

1. Assignment of writing essays on different themes and issues (individual contribution) and sharing with the friends using moodle platform for comments and suggestion and finalization of the paper for presentation.
2. Online discussion with the students in different topics scheduled by the course tutor.
3. Designing lessons/modules using ICTs, blended learning, problem base learning using e-pedagog.(group work).
4. Readings and reflecting on different concepts/principles/theoreies/models through micro lecture sessions in the class by the students.
5. Discussion and sharing ideas in different topics as created by the community of learners and community of practice.
6. Some open-book type tests given to the students to complete in a restricted timeframe as designed by the tutor/professor and make presentation in plenary planned by the course teacher.
7. **Evaluation Scheme**

**5.1.1 Internal Evaluation 40%**

Internal evaluation will be conducted by the course teacher based on the following activities.

1. Attendance 5%
2. Participation in learning activities 5%
3. First assignment/mid-term exam 10%
4. Second assignment/assessment 10%
5. Third assignment/assessment 10%

**Total 40 Points**

**5.1.2 External Examination (Final examination) 60%**

Examination Division of the Dean office, Faculty of Education will conduct final examination at the end of the semester

1. Objective questions (multiple choice 10 x1) 10 points

2. Short answer question (6 question x 5 points) 30 points

3. Long answer questions (2 questions x 10 points) 20 points

**Total**  **60 points**

**Recommended Books**

Athanassios, J. (2012) .Research on e-learning and ICT in Education. New York: Springer

Somekh, B .(2007) .Pedagogy and Learning with ICT. New York: Routledge

Capel, S . ,Davidsion, J., Arthur,J., & Moss, J.( 2001). Issues in Teaching Using ICT: Routledge

Quality Issues in ICT-base Higher Education. Routledge

**Course Title: Teaching Undergraduate Mathematics**

**Course No: Math.Ed. 535**

**Nature of the Course: Theory**

**Level: M.Ed. Credit Hours: 3**

**Semester: Third Teaching Hours: 48**

1. **Course Introduction**

This course is designed for Master’s in mathematics education. It is expected that this course shall sharpen students in content knowledge for teaching in secondary and undergraduate level and provide knowledge in pedagogies. Basically, abstract algebra, analysis and geometry are considered as the foundation for learning other advance mathematics. This course is focused especially on these foundation course of mathematics to provide meaningful content learning and pedagogical skills and competencies necessary to run the courses in higher secondary and undergraduate level. Competent mathematics teachers are those who are able to reduce the learning contents into organized and reduced form of abstraction to make the student able to understand the abstraction. Therefore, this course intends to impart the students the mathematics that is particularly necessary to the teachers who are teaching at undergraduate level as well as at secondary level. This course is an enrichment course to the teachers to make them fit into dealing contents of schools mathematics and undergraduate mathematics meaningfully. The contents for this enrichment course will be the simplified and made meaningful for the purpose of teaching. Besides the content enrichment it provides undergraduate mathematics teaching instructional models to the students – an appropriate pedagogy for actionable learning. This course makes students able to design lessons for undergraduate courses using different instructional strategies.

1. **Course Objectives**

* Enrich the prospective teachers on the fundamental mathematical contents for teaching at schools and undergraduate level.
* Introduce different instructional strategies used in teaching undergraduate mathematics.
* Enhance competencies in using problem base learning/ project base learning like relevant teaching models suitable for schools and undergraduate level mathematics teaching.
* Boost the capacity of designing lessons for undergraduate courses using instructional theories and ICTs.

1. **Content Elaboration and Instructional Strategies**

|  |  |
| --- | --- |
| **Contents** | **Objectives** |
| * Explain the philosophy of undergraduate mathematics education * Differentiate children learning and adult learning behaviours in mathematics learning * Explain the APOS Theory of learning mathematics * Demarcate the differences between concepts in other field of knowledge and mathematics * Analyse the relevance of different instructional strategies for undergraduate mathematics teaching | **Unit I: Philosophy and theories of mathematics learning 6pds**   * 1. Philosophy of mathematics and mathematics education   2. Learning theories: behaviourist, congnitive, constructivist   3. Mathematical concept and its development   4. Different instructional strategies for undergraduate mathematics |
| * Expose the system of mathematical reasoning as mathematicians do for generating mathematics. * Explain the ways of writing proofs of a theorem and solving mathematical problem * Analyse the mathematical writing using language of logic, operators, signifiers, qualifiers etc. * Teach writing language of mathematics – use of qualifier, quantifier and connecting ideas.   Use different models of theorem proving for facilitating students in reading mathematics. | **Unit II. Mathematical reasoning and Proof** **10 pds**   1. Mathematical reasoning and conceptualization in undergraduate mathematics 2. Ways of mathematical reasoning and conceptualization 3. Research findings about mathematical reasoning and Conceptualization by undergraduate students 4. Fundamentals for Mathematical proofs and proving techniques for the undergraduate students: logic, operator, quantifier, qualifier etc. |
| * Sketch the development history of algebra and analysis for the purpose of teaching. * Examine the undergraduate students' possible encountered problems in learning abstract mathematics – analysis, abstract algebra, group theory, linear algebra etc. * Present write up as in the fundamentals of analysis and algebra. | **Unit III. Survey on mathematical proofs writing and problem solving** 10 pds   1. Historical development of algebra and analysis as abstract form of mathematics. 2. Structure of proof in analysis and algebra 3. Techniques of problem solving and the methods of writing mathematics 4. Reading of some selected contents of analysis, linear algebra and abstract algebra to analyse the method of mathematics writing |
| * Review by contrasting different instructional strategies. * to use problem base learning in teaching mathematics at secondary and undergraduate level. * get experience on designing lessons based on PBL and use the designed lesson in classroom teaching as action research project and make reflection. * Reflect on instructional practices at colleges based on research studies. * Critically examine the relevance of different instructional strategies in undergraduate mathematics teaching. Use open courseware and ICTs in teaching undergraduate mathematics | **Unit IV. Problem-based learning for mathematics learning 8 pds**   1. Review of different instructional strategies used in mathematics teaching at undergraduate level 2. Historical basis of PBL and its practices 3. Rationale of PBL introduction in undergraduate mathematics teaching 4. Designing and use of problem base learning(PBL) in undergraduate mathematics teaching 5. Models of PBL and some skeptics regarding PBL 6. Use of computer, ICTs, software and open courseware in teaching undergraduate mathematics |
| * Use ideas that are very relevant to reducing abstraction in course of teaching the mentioned contents at secondary schools and undergraduate level. * Utilize the fundamentals and basics of mathematics for developing a theorem and solving a problem in teaching and guiding the students solving problem. * Reconstruct the fundamentals of mathematics through extensive journey over the contents of mathematics that are usually taught in at secondary schools and undergraduate level. * Examine and analyse the missing links in teaching mathematics courses in the designated level. | **Unit V. Readings for the content enrichment of the following using both ordinary text and ICT generated text. 5 pds**   1. Intuition and proof b. Basic of number theory c. theory of equation d. measurement area and volume e. building real number and complex number f. Function and modeling g. geometrical transformation h. data analysis and probability i. Trigonometry j. Non-Euclidean Geometry |
| * Present the mathematics into the form of reducing abstraction in course of teaching algebra, analysis, number theory, topology etc. * Present and fit the missing link between different mathematics in course of teaching some courses in the designated level. | **Unit VI. Selected readings for the content enrichment of Algebra 4 pds**   1. Structures of modern algebra and their teaching 2. The learning problems and measures to address modern algebra learning 3. Prepare some typical lessons for teaching |
| * Present the mathematics into the form of reducing abstraction in course of teaching algebra, analysis, number theory, topology etc. * Present and fit the missing link between different mathematics in course of teaching some courses in the designated level. | **Unit VII: Selected readings for the Geometry and Analysis 5pds**   1. Fundamentals of Real and complex analysis 2. Historical approach in real analysis 3. Analysis from real to complex 4. Four Pillars of Geometry   Different systems of geometry |

1. **General Instructional Strategy**

This is a course expects active participation of the students through using the other media more and conventional approach of lecture and discussion. The given contents will be divided into different learning units and delivered to the students in a planned way. A course plan is made including contents, their respective teaching learning activities for teacher and students, time frame for conducting the lessons, assignments, projects and feedback mechanism.

Problem solving, observation of the undergraduate class, critical overview and preparing report and presentation, presentation sessions, discussion will be the instructional strategies.

1. **Specific Instructional Strategy**

The students have to go through the text given in the course and some additional texts provided by the course teacher in detail based on the guidelines and project works assigned by the course tutor. The course tutor will provide projects to the individual students and the students have to complete the task and share to other friends. The interaction between students will be recorded and assessment scores will be provided. Some examples of the assignment and project themes are given here:

**Instructional Strategy Unit I, II**

1. Learning difficulty of undergraduate students in abstract algebra and possible pedagogical suggestion(Group project)
2. Writing mathematical proofs – challenges for the young learners.(Essay/term paper)
3. Different methods of writing proofs and the language of mathematics for writing.( Essay)

**Instructional Strategy Unit III**

1. Assignment of writing essays on different instructional strategies (individual contribution) and sharing with the friends using moodle platform for comments and suggestion and finalization of the paper.
2. Online discussion with the students in different instructional strategies and PBL.
3. Designing lessons on PBL and use them in classroom teaching and prepare a report reflecting the practice.(group work)

**Instructional Strategies Unit IV**

1. Readings and reflecting is the major activities with assignments for each content(different group will do work on different topics and inter groups sharing in seminar).
2. Sharing of the assignments to the community of learners.
3. Some open-book type tests given to the students to complete in a restricted timeframe as designed by the tutor/professor.

**Instructional Strategy Unit V - VII**

1. Readings and reflecting is the major activities with assignments for each content.
2. Writing of papers in different mathematical problem solving and the methods of solving.
3. Sharing of the assignments to the community of learners (on line, seminar, and presentation).
4. Some open-book type tests given to the students to complete in a restricted timeframe as designed by the tutor.
5. Preparation of teaching, learning and training modules under the guidance of instructor or main professor

Note: Unit V – VII are used for teaching preparation of the students. The students have to go through the text suggested for these units and prepare teaching, learning, and training modules in groups and use in peer teaching.

1. **Evaluation Scheme**

Both assessment and evaluation are used in the programme. Significant weightage is given to internal in semester activities. The course tutor has to make a detailed plan of assessment of the students. Based upon the assignments, projects, and activities the students participates and gain excellence on them. Based on these productions the internal assessment score will be provided. Thus the evaluation scheme is as follows:

In-semester assessment: 40%

End-semester exame : 60%

**6.1 Internal Evaluation 40%**

Internal evaluation will be conducted by the course teacher based on the following activities.

1. Attendance 5%
2. Participation in learning activities 5%
3. First assignment/mid-term exam 10%
4. Second assignment/assessment 10%
5. Third assignment/assessment 10%

**Total 40 Points**

**6.2 External Examination (Final examination) 60%**

Examination Division of the Dean office, Faculty of Education will conduct final examination at the end of the semester

1. Objective questions (multiple choice 10 x1) 10 points

2. Short answer question (6 question x 5 points) 30 points

3. Long answer questions (2 questions x 10 points) 20 points

**Total**  **60 points**

1. **Recommended Books**

Elena Nardi(2008).Amongst Mathematicians: Teaching and Learning Mathematics at University Level. Springer (Unit I and Unit II full reading)

Barbara J.Duch, Susan E.Groh, and Deborah E. Allen (eds)(2001). The power of problem-based learning. Springer Verlag.(Unit 1, Unit 4, Unit 5, Unit 19)

Alan Sultan and Alice F. Artzt (2011).The mathematics that every secondary school mathematics teacher needs to know. Routledge.

John Still Well(2010). Four Pillars of Geometry. Springer

….. (2010)Complete Mathematics, Teach Yourself.

Barbara J.Duch, Susan E.Groh, and Deborah E. Allen (eds)(2001). The power of problem-based learning. Springer Verlag.(Unit 1, Unit 4, Unit 5, Unit 19)

Ulrich Daepp & Pamela Gorkin( 2011). Reading, writing and proving: A closer look at mathematics. Springer

Sthal, S. (1999). Real Analysis: A historical approach. John Wiley & Sons, InC. New York.

Axler, S., Ribet,K.A.(2008). Undergraduate texts in mathematics: Readings in mathematics. Springer.

Erdman, J.M.(2011). Companion to Real Analysis. Portland State University.

Course Title: **Studies in Mathematics Education**

Course Number: Math Ed. 536 Nature of Course:Theoretical

Level: M. Ed. Chrs: 3

Semester: IV Total Period: 48

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**1. Course Description**

This course aims at giving exposure to students about some of the books written in mathematics education that are used all over the world extensively. It also aims to let students pick up global issue which is locally important, write an essay and give seminar related to components of mathematics education, like nature of mathematics, pedagogies for mathematics, teacher development, assessment strategies and research agenda.

**2. General Objectives**

The general objectives of this course are as follows:

* To make the students knowledgeable about the strength of books written on Mathematics Education and enable them to appraise them.
* To provide students with in-depth exposures to different curriculum and their materials around the globe.
* To enable the students to present their opinion on the issues of mathematics education.
* To make the students able in preparing and presenting analytical write-ups related to the aspects of mathematics education.
* To enable the students to prepare for and participate actively in the seminar of mathematics education.

**3. Specific Objectives and Contents:**

|  |  |
| --- | --- |
| Specific Objectives | Contents |
| * Explain different views on nature of mathematics and math education * Address different issues related to mathematical knowledge. * Illustrate the concept construction and nature of mathematical knowledge. * Explain the dialogical nature of mathematics. * Compare and xcontrast among the cultural nature of mathematics and different world views. | Unit 1: Nature of Mathematics and Mathematics Education **(9)**  1.1 Views on the nature of mathematics  1.2 Views on the nature of math education  1.3 Issues related to mathematical knowledge  1.4 Concept, construction and nature of mathematical knowledge  1.5 Dialogical nature of mathematics  1.6 Different world views: Newtonian, Einsteinium, Biomedical, Organic, and Chaotic |
| * Explain the different approaches to math curricula material and development in universities of Nepal. * Give critical appraisal of different math curriculum all around the globe. * Compare the components of different modules and lesson plans which are in practice material exercised. * Describe the statues of material used in mathematics teaching. | Unit 2: Curriculum Studies **(9)**  2.1 Studies of IX to Bachelor’s math curricula materials of selected universities of Nepal  2.2 Studies of grade VIII to bachelor mathematics curriculum of SAARC, USA, UK, Japan.  2.3 Components of lesson plan/modules  2.4 Status of materials used in mathematics teaching |
| * Explain the major shift in mathematics education research focusing the rule of cultural diversity. * Justify why social turn gained more attention in research work mathematics education research. * Make critical appraisal how individual experience, reflection can become a knowledge focusing on ethnography: unite ethnography and self study. * State mathematics literacy as a research issue. | Unit 3: Research in Mathematics Education  **(9)**  3.1 Role of cultural diversity in mathematics education research  3.2 Strong social turn in mathematics education research  3.3 Ethnography, self-study, auto-ethnography  3.4 Mathematics literacy as a research issue |
| * Present the review of the assigned books. * Give critical appraisal of the assigned books. | Unit 4: Review and Appraisal of Selected Books **(9)**  4.1 Critical issues in mathematics education  4.2 Issues in mathematics teaching  4.3 What is mathematics really?  4.4 18 unconventional essays on the nature of mathematics  4.5 New mathematics education research |
| * Prepare and present analytical write-up related to the different aspects of mathematics education. * Conduct a seminar on the assigned issue of mathematics Education. | Unit 5: Analytical Write-up and Organization Seminar (12)  5.1 Book Review  5.2 Long Essays  5.3 Seminar |

1. **General Techniques**

Understanding of any concept can be judged only when students demonstrate through reading, writing and advocating students’ viewpoint. So, these general and specific techniques in each of unit are given below.

**4.1 General Instructional Techniques**

The general instructional techniques will be intensive and extensive reading, discussion, lectures, projects, seminars, and analytical writings.

**4.2 Specific Instructional Techniques**

|  |  |
| --- | --- |
| Unit | Specific Activities and Distractinal Techniques. |
| I | Internet browsing followed by discus. |
| II | Bringing curriculum of different countries and compare and contrast among their key ingredients. |
| III | Internet browsing for the sample of different researches on social and cultural aspects of mathematics. |
| IV | Intensive and extensive reading of different seminal textbook written on the issues of mathematics education. |
| V | 1. Book Review (1000 words approx 4 pages): The following key features must be included: 2. General information (Author, date, title, publisher, place of publication) 3. Summary of key sections of the book 4. Summary of key issues presented in each sections/chapter of the book 5. Information about the Potential reader of the book 6. Long Essays (4000 words approx 16 pages): Students are expected to select an issue of global/local in nature in mathematics education and address it with sufficient facts figures and arguments in their own style. Conventional as well as unconventional way of writing is desired. 7. Seminar: (1500 words approx 6 pages): Brainstorming session is required in order to students’ exposure to select a good and burning issue in mathematics education. For example: Should we prepare world citizen through our mathematics education course? |

**5 Evaluation**

**5.1 Internal Evaluation 40%**

Internal evaluation will be conducted by course teacher based on following activities

1. Attendance 5 Points
2. Participation in learning activities 5 Points
3. First assignment/ midterm exam 10 Points
4. Second assignment/assessment 10 Points
5. Third assessment 10 Points

Total 40 Points

**5.2 External Examination (Final examination) 60%**

Examination Division of the Dean’s office will conduct final examination at the end of the semester

1. Objective questions (multiple choice items 10 × 1) 10 points

2. Short answer question (6 questions × 5 points) 30 points

3. Long answer questions (2 questions × 10 points) 20 points

Total **60 points**

**6. Recommended Books and References**

**Recommended Books**

Doll, W. E. (1993). *A post-modern perspective on curriculum.* New York: Teachers College Press. (Unit II)

Ernest, P., Greer, B. & Shreeraman, B. (Ed). (2009). Critical issues in mathematics education. Charlottte, NC: Information age publishing. (Unit V)

Gates, P. (2001). *Issues in mathematics teaching.* London and NY: Routledge and Falmer (Unit I, IV)

Hersh, R. (Ed) (1997) *What is mathematics really?* NY: Oxford University Press. (Unit I, IV)

Hersh, R. (Ed.) (2006). *18 unconventional essays on the nature of mathematics.* NY: Springer. (Unit I)

Maaz, J. & Schloeglmann, W. (Ed) (2006). *New mathematics education research and practice*. Rotterdam, The Netherlands: Sense (Unit III)

**References**

Bachman, D. (2007). *Advance Calculus Demystified: A self-teaching guide.* New York: Mcgrow Hill. (Unit II)

*Baumslag*, B. (2000). *Fundamentals of teaching mathematics at University level*: Imperial College press. (Unit II)

Handa, Y. ( ). *What does understanding mathematics mean for teachers? Relationship as a metaphor for knowing.* Routledge (Unit I)

Nardi, E. & Iannone, P. ( ). : *How to prove it: A brief guide for teaching proof to year 1 mathematics graduates.* Norwich, UK: (Unit II)

PISA (2010). *Mathematics teaching and learning strategies in PISA*: OECD (Unit II)

Robert, A. W. (1996). *Calculus: The dynamics of change.* Mathematical Association of America (Unit II)

Upadhyay, H. P. (2013). A dialogue: mathematics as an umbrella concept unifying all disciplines. Kathmandu: *Council of mathematics Education*. (Unit V)

Course Title: **Differential Geometry**

Nature of the Course: Theoretical

Course No.: Math Ed. 537 Chrs: 3

Level : M. Ed Teaching hours:48

Semester: 3rd

1. **Course Description**

An analytical geometry is a great breakthrough in the advancement of synthetic geometry occurred through the work of Descartes and Fermat and later to differential geometry where application of calculus and vector are heavily used to study shapes and surfaces. The study of curvature for space curves and fundamental forms for surface are the complex and broad in scope in representing local and global geometry.

1. **General Objectives**

The aim of the course is to provide students with an introduction to a number of important aspects of modern differential geometry. The course will begin by looking at curves in space using function of several variable and end with surface.

On successful completion of the course the students should be able to:

• let the students understand the concept of a space curve and surface  
• let students to apply basic results of calculus on space curve and surface  
• let student to interpret the fundamental forms of surface

• let the students to calculate and explore the connection of curvature and torsion

• let students to investigate intrinsic and extrinsic properties of surface

1. **Specific Objective of the content**

|  |  |
| --- | --- |
| **Specific Objective** | **Content** |
| **Part I:** Local and global geometry of space curves | |
| * Define, recognize and express space curves using calculus. * Identify class of space curve and use them in proving theorems. * Define and derive tangent to space curve. * Describe meaning of order of contact. * Define osculating plane and prove related theorems. * Explain and identify fundamental planes and fundamental vectors. * Define and describe curvature and torsion. * State and prove Serret-Frenet formula. * Define helix and prove related properties. * State prove and describe fundamental theorem of space curve. * Define Osculating circle and osculating sphere and prove related properties * Define evolutes and involutes and deduce their curvature and torsion * Define Bertrand curves and deduce their properties | **Unit 1: Curves in Space (15 Hrs)**   * 1. Explicit and implicit representation of space curve   2. Class of space curve   3. Tangent to the space curve      1. Unit vector along the tangent to the space curve      2. Equation of tangent line on a space curve   4. Order of contact between curve and surface   5. Osculating plane      1. Equation of osculating plane   6. Normal lines      1. Principal normal and binormal      2. Equation of principal normal and binormal   7. Normal plane and rectifying plane      1. Equation normal plane and rectifying plane   8. Fundamental vectors and fundamental planes   9. Spin vector along fundamental vectors   10. Curvature, torsion and screw curvature       1. Curvature       2. Expression of curvature       3. Torsion       4. Expression of torsion       5. Screw-curvature       6. Expression of screw-curvature       7. Serret-Frenet Formula   11. Cylindrical helix       1. Characteristic property of helix       2. Circular helix       3. Expression for circular helix   12. Intrinsic equation       1. Fundamental theorem for space curve       2. Existence theorem       3. Uniqueness theorem   13. Osculating circle and osculating sphere       1. The center of osculating circle       2. Properties of locus of center of osculating circle       3. Center of osculating sphere       4. Properties of the locus of center of osculating sphere   14. Behavior of a curve in the neighborhood of a point   15. Evolutes and involutes       1. Involute of a given curve       2. Curvature and torsion of involute       3. Evolute of a given curve       4. Curvature and torsion of evolute   16. Bertrand curves and their properties       1. Properties of bertrand curves |
| **Part II:** Local and global geometry of surfaces | |
| * Define, recognize and express surface using calculus * Identify class of surface and use then in proving theorems * Identify nature of point on surface * Define proper parameter transformation and its use * Define and deduce equation of tangent plane and normal to the surface with example * Define family of surface and describe Characteristic curve, Characteristic point, Envelope, Edge of regression and their properties * Define ruled surface and discuss its kind * Describe developable associated with space curves and prove related theorems | **Unit 2: Surface , Envelopes, Developable and Ruled Surface(10Hrs)**   * 1. Implicit and explicit representation of surface   2. Class of surface   3. Regular (ordinary) point and singularities on a surface   4. Types of singularity   5. Transformation and its geometric significance      1. Proper transformation   6. Parametric curves   7. Tangent plane and normal to the surface      1. Equation of tangent plane to the surface      * + 1. Equation of tangent plane to the surface      * + 1. Equation of normal line to the surface     2. Equation of normal to the surface   1. Family of surface      1. Characteristic curve      2. Envelope and its property      3. Characteristic point      4. Edge of regression and its property   2. The ruled surface      1. Equation of ruled surface   3. Developable surface      1. Equation of developable surface   4. Developable associated with space curves |
| * Define fundamental forms of surface geometrically and prove related properties * State and verify relation of E,F, G, H * State and prove Weingarten equations * Define and describe direction coefficients and related results * Define Family of curves and Orthogonal trajectories * Explain double family of curves and its orthogonal condition | **Unit 3: Fundamental forms of the Surface(7Hrs)**   * 1. First fundamental form of surface      1. Geometrical interpretation of first fundamental form      2. Properties of first fundamental form      3. Relation among E,F, G, H   2. Second fundamental form      1. Geometrical interpretation of second   fundamental form   * 1. Fundamental coefficients of surface      1. Monge's form of the surface      2. General surface of revolution      3. The conoidal surface      4. Saddle surface      5. The right helicoid surface   2. Weingarten equations   3. Direction coefficients and related results      1. Relation between and ()      2. Angle between two directions on the surface      3. Direction coefficients of parametric curves   4. Family of curves      1. Differential equation of family of curves   5. Orthogonal trajectories      1. Differential equation of orthogonal   trajectories   * 1. Double family of curves   2. Condition for orthogonality of double family |
| * Explain intrinsic and non-intrinsic properties on surface with examples * Deduce normal curvature in terms of fundamental coefficients * State and prove Meusnier’s theorem * Deduce equation of principal direction and use it to prove related theorems * Deduce equation of principal curvature and their related relations * Define minimal surface and developable surface and prove related theorems * Explain curvature and prove related properties * State and prove Euler’s theorem | **Unit 4: Local non-intrinsic properties of surface(8Hrs)**   * 1. Local non-intrinsic property of surface   2. Oblique section and normal section of the surface      1. Normal curvature      2. Principal curvature      3. Principal section      4. Principal direction   3. Expression of normal curvature in terms of fundamental coefficients   4. Meusnier’s theorem   5. Differential equation of principal direction   6. Differential equation of principal curvature      1. First curvature      2. Second curvature      3. Mean curvature      4. Minimal surface      5. Developable surface   7. Line of curvature and its properties      1. Differential equation of line of curvature      2. An important property      3. Line of curvature along parametric curves      4. Rodrigue’s formula      5. Monge’s theorem      6. Euler’s theorem      7. Jochimsthal’s theorem |
| * Define and describe conjugate direction and its properties * Define asymptotic lines and prove related theorems * State and prove Euler’s theorem * Define The fundamental equation of surface and compute Christoffel coefficients * State and prove Gauss characteristic equation and Mainardi-codazzi equation * Define Parallel surface and prove related theorems * Define isometry and prove related theorems | **Unit 5: Conjugate directions, asymptotic lines fundamental equations of surface theory and parallel surfaces(8Hrs)**   * 1. Conjugate direction and its properties      1. Equation of conjugate directions      2. Condition to be conjugate direction      3. Principal directions and orthogonal conjugate   2. Asymptotic lines and related theorems      1. Asymptotic lines      2. Differential equation of asymptotic lines      3. Condition for asymptotic lines to be orthogonal   3. The fundamental equation of surface theory      1. Christoffel coefficients      2. Gauss characteristic equation      3. Mainardi-codazzi equation   4. Parallel surface and related theorems      1. Equation of parallel surface      2. Fundamental coefficients of parallel surface      3. Gaussian curvature and mean curvature for the parallel surface when line of curvatures are taken along parametric curves      4. Bonnet’s theorem on parallel surface   5. Isometry |

# Instructional Techniques

# General Instructional Techniques

Following instructional techniques will be adopted.

* Lecturers
* Discussion
* Question Answer

# Specific Instructional Techniques

|  |  |
| --- | --- |
| **Unit** | **Activity and Instructional Techniques** |
| 1 | Experiences will be shared between groups with a seminar |
| 2 | The Demonstration method will be involve both giving task to students and  showing their task |
| 3 | Project assignment on some theorems |
| 4 | Group discussion with sharing |
| 5 | Guided Discussion |

# Evaluation

# Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on the following activities:

1. Attendance 5 points
2. Participation in learning activities 5 points
3. First assignment/Assessment 10 points
4. Second assignment/Assessment 10 points
5. Third assignment/Assessment 10 points

Total 40 points

# External Evaluation (Final Examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of the semester as follows:

1. Objective Type Question (Multiple Choice ) 10 points
2. Short Answer Question (6 Question 5 points ) 30 points
3. Long Answer Question (2 Question 10 points ) 20 points

Total 60 points

1. **Recommended Material**

**Recommended Books**

1. Gupta, P. P., Mallik, G. S &Pundir, S. K., (2011). *Differential geometry*. Meerut: Meerut PragatiPrakashan.
2. Koirala S. P, & Dhakal B. P. (2068) Differential Geometry. Sunlight Publication, Kirtipur, Nepal

**Reference Books**

1. Carmo, M. P. (1976) Differential Geometry of Curves and Surfaces. Englewood Cliffs, NJ: Prentice-Hall
2. Lal, B., (1969). *The three dimensional differential geometry*. Delhi: Atma Ram and Sons.
3. Lipschutz, M. M., (2005). *Theory and problems of differential geometry- Schuam’s outline series*. Delhi: Tata McGraw-Hill Publishing Company Ltd.
4. Wilmore, T. J., (2006). *An introduction todifferential geometry*. Delhi: Oxford University Press.

Course title: **Measure Theory and Topology**

Course Number: Math.Ed. 538

Nature of the course: **Theoretical**

Level: MT Ed Chrs: 3

**Semester** : ThirdTeaching Hour: 48

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**Course Description**

This course is designed to provide students with the sound knowledge of measure theory and topology. The topics on measure theory deal with the theory of measure and integration in the simple setting of Euclidean and abstract space. As a preliminary step, students study the Lebesgue measure and outer measure, measurable functions, Lebesgue integral,  classes and integration in Euclidean and abstract spaces. The topics in topology deal with the definition of metric spaces as topologies, generalized topological spaces and their properties.

**Course Objectives**

The general objectives of this course are as follows:

* Make students understand the basic concept of the Euclidean space .
* Acquaint students with knowledge of the outer measure, Lebesgue measue and measurable functions with their properties.
* Develop the understanding of students with Lebesgue integrals.
* Let the students understand the proof and the properties of space.
* Familiarize the students with the abstract treatments of Lebesgue measure and integration
* Have the students understand the concept of Euclidean space, metric space and topological space
* Let the students extend the metric space to more general concept of topological space
* Acquaint the students with the properties of a distance function and explore the fundamental and the useful aspects of metrics.
* Enable the students to prove the theorem related to connectedness and compactness in topological spaces.

**Course Requirements**

In order to take this course, students must have

* access to a computer
* continuous internet access
* ability to download and save files
* be competent in English language
* read the prescribed text books of levels lower than this course

**Specific Objectives and Contents**

|  |  |
| --- | --- |
| **Specific Objectives** | **Contents** |
| * To define the points and sets in * To prove the properties of outer measure * To prove the properties of Lebesgue measure * To prove the Caratheodory theorm | **Unit 1: Lebesgue Measure and Outer Measure (6 hours)**   * 1. Points and sets in   2. Lebesgue outer measure   3. Cantor set   4. Lebesgue measurable sets   5. Two properties of Lebesgue measure   6. Caratheodory theorem |
| * To prove the properties of the measurable functions * To understand and prove Egorov’s theorem * To prove the results related to convergence in measure | **Unit 2: Lebesgue Measurable Functions**  **(6 hours)**  2.1 Lebesgue measurable function and its properties  2.2 Semi continuous function and its properties  2.3 Egorov’s theorem  2.4 Convergence in measure and its properties |
| * To understand and prove the properties of Lebesgue integral * To establish the relation between Riemann and Lebesgue integrals | **Unit 3: Lebesgue Integrals (6 hours)**  3.1 Integral of non-negative functions  3.2 Properties of the integral  3.3 Integral of arbitrary measurable functions  3.4 Relation between Riemann and Lebesgue integrals |
| * To explain spaces * To prove different inequalities in space * To explain classes * To prove the properties of classes * To prove the fundamental properties of Hilbert space | **Unit 4: Classes (5 hours)**  4.1 classes  4.2 Holder’s and Minkowski’s inequalities  4.3  classes  4.4 Banach and metric space properties  4.5space  4.6 Orthogonality  4.7 Riesz-Fischer theorem  4.8 Hilbert space |
| * To state the properties of additive set function and measure * To prove the results related to measure space * To prove the results related to absolute continuity, singular set function and measure. * To prove Egorov’s theorem | **Unit 5: Abstract Integration (5 hours)**  5.1 Additive set function, measures and their properties   * 1. Measure space   2. Measurable function on measure space and its properties   3. Egorov’s theorem   Absolutely continuous and singular set functions |
| * To define metric in terms of distance function * To define open and closed sets on a general metric space   To determine the fundamental and useful aspects of metric spaces | **Unit 6: Metric spaces (5 hours)**   * 1. Definition and examples of metric spaces   2. Open sets and closed sets in metric spaces   3. Interior, closure and boundaries   4. Continuous functions   5. Equivalence of metric spaces   6. Complete metric spaces |
| * To define topological space and its interior, closure and boundary * To define the basis and sub-basis and extension to topological space * To determine topologically equivalence spaces with the help of continuous functions   To establish subspaces | **Unit 7: Topological Spaces (6 hours)**   * 1. Definition and some examples of topological spaces   2. Interior, closure and boundary   3. Basis and sub-basis   4. Continuity and topological equivalences   5. Subspaces |
| * To determine the properties of connected and disconnectedness * To prove theorems on connectedness and draw their applications * To establish the properties of locally connected and locally path connected spaces | **Unit 8: Connectedness (5 hours)**   * 1. Connected and disconnected spaces   2. Theorems on connectedness   3. Connected subsets of the real line   4. Applications of connectedness   5. Path connected spaces   6. Locally connected and locally path connected spaces |
| * To define compactness and establish it as a topological property * To use continuity in the compact spaces   To derive the properties of compactness | **Unit 9: Compactness (4 hours)**   * 1. Compact spaces and subspaces   2. Compactness and continuity   3. Properties related to compactness   4. One point compactification |

**Recommended Books and References**

**Recommended Books**

Wheeden, R. I. & Zygmund, A. (1977). *Measure and integral*. New York

Croom, F. H. (1998). *Principle of topology*. Orlando, Flogida

**References**

Jain, P. K. & Gupta, V. P. (1986). *Lebesgue measure and integration*. New Delhi

Cohn, D. L. (1993). *Measure theory*. Barkhauser. Boston.

Monkers, J. R. (1998). *Topology*. New Delhi: Prentice Hall of India.

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| --- | --- |
| ljlzi6 pb\b]Zo | kf7Øljifo |
| * efiff lzIf0fsf] kl/ro lbg * efiff lzIf0fsf cfwf/e"t l;b\wfGtx?sf] JofVof ug{ * zf:qLo efiff, :yfgLo jf /fi6«efiff / ljb]zL efiffsf ;fk]Iftfdf g]kfnL lzIf0fsf] e"ldsf :ki6 kfg{ * klxnf], bf];|f] / ljb]zL efiffsf ¿kdf g]kfnL lzIf0fsf] cfjZostf / :j¿k jf ¿k/]vf atfpg * P]ltxfl;s b[li6n] g]kfnL lzIf0f ultljlwsf] ;j]{If0f u/L jt{dfg l:yltsf] cfsng ug{ . | PsfO Ps M efiff lzIf0fsf l;b\wfGt / g]kfnL lzIf0fsf ljljw :j¿k -!)\_  !=! efiff lzIf0fsf] kl/ro  !=@ efiff lzIf0fsf cfwf/e"t l;b\wfGt  !=# zf:qLo efiff, :yfgLo÷/fi6«efiff / ljb]zL efiffsf ;fk]Iftfdf g]kfnL lzIf0f  !=$ klxnf], bf];|f] / ljb]zL efiffsf ¿kdf g]kfnL lzIf0fsf] cfjZostf / :j¿k  !=% g]kfnL lzIf0f k/Dk/f / jt{dfg l:ylt   * lj=;+= @)@\* clu / kl5sf ljljw ultljlw Pjd\ k|of;x? * g]kfnL lzIf0fsf] jt{dfg cj:yf |
| * lzIf0f k|of]hg, >j0f k|sf/ / lzIf0f sfo{snfkx?sf] ¿k/]vf ;lxt >j0f snf lzIf0fsf] kl/ro lbg * kl/ro / k|of]hg ;lxt jSt[Tj snf lzIf0fsf sfo{snfkx?sf] ¿k/]vf atfpg * k7g snfsf ;Gbe{df o;sf k|sf/, jfrg snf, df}g k7g snf / b|'t k7g snf lzIf0fsf cfjZos tTTj Pjd\ k|lqmofut kIfx? phfu/ ug{ * pRrf/0f lzIf0fsf] kl/ro lbO{ o;sf lzIf0f tl/sf / lzIf0f qmd pNn]v ug{ * n]vg snf lzIf0fsf k|sf/, k|of]hg, ;fdfGo sfo{snfk tyf ;Dab\w l;k ljsf;sf k|f/lDes / pTt/jtL{ sfo{snfkx?sf] j0f{g ug{ * kl/ro, k|of]hg, k|d'v q'l6If]q / sfo{snfk ;lxt j0f{ ljGof; lzIf0fsf] kl/ro lbg * g]kfnL eflifs l;k k|jw{gdf ;xof]u k'¥ofpg] k|d'v ;xsfo{snfkx?sf] k|lqmofut kl/ro lbg . | PsfO b'O{ M ljljw efiffsnf l;k lzIf0f k|ljlw -\*\_  @=! >j0f snf lzIf0f M kl/ro, k|of]hg, k|sf/ / lzIf0f sfo{snfk  @=@ jSt[Tj snf lzIf0f M kl/ro, k|of]hg / lzIf0f sfo{snfk  @=# k7g snf lzIf0f M kl/ro, ;:j/ k7g / df}g k7g  @=#=! jfrg snf lzIf0f   * jfrg snfsf cfjZos tTTj * jfrgsf ;Ldf, bf]if / sdhf]/Lx? * jfrgsf sdhf]/L ;'wf/sf pkfox?   @=#=@ df}g k7g snf lzIf0f   * + - k|s[lt     - kf7sdf x'g' kg]{ u'0f     - kmfObf     - lzIf0f sfo{snfk   @=#=# k7g af]w lzIf0f  ▪ k|of]hg  ▪ df}g k7gsf] pkof]u   * ;fduL 5gf]6 * lzIf0f sfo{snfk * lzIf0f qmd * af]w k|Zgsf ljz]iftf   @=#=$ b|'t k7g snf lzIf0f M kl/ro, ;fdu|L 5gf]6 / sfo{snfk  @=$ pRrf/0f lzIf0f M kl/ro, tl/sf / lzIf0f qmd  @=% n]vg snf lzIf0f   * kl/ro / k|sf/ * lzIf0f k|of]hg * sfo{snfk M oflGqs, lgb]{lzt tyf :jtGq jf l;h{gfTds * n]vg snf ljsf;sf k|f/lDes sfo{snfk * n]vg snf ljsf;sf pTt/jtL{ sfo{snfk   @=^ j0f{ ljGof; lzIf0f M kl/ro, k|of]hg, k|d'v q'l6If]q / sfo{snfk  @=& g]kfnL lzIf0fsf ;xsfo{snfk   * lxHh] k|ltof]lutf * jfb ljjfb k|ltof]lutf * clegofTds sfo{snfk * ;flxlTos k|ltof]lutf * ljbØfno klqsf k|sfzg * ;flxlTos uf]i7L tyf ;df/f]x |
| * + zAbfy{ / zAb e08f/ lzIf0fsf cfjZostf÷ k|of]hg, zAbfy{ lzIf0f ljlw / zAb e08f/ ljsf;sf pkfox? ;'emfpg   + pvfg 6'Ssf lzIf0fsf dxTTj / k|of]hg tyf k|d'v sfo{snfkx?sf] lrgf/L u/fpg   + jfSo /rgf lzIf0fsf k|of]hg / k|d'v sfo{snfkx?sf] ¿k/]vf atfpg   + txut b[i6n] Jofs/0f lzIf0fsf] cf}lrTo lgwf{/0f u/L g]kfnL Jofs/0f lzIf0fsf ;d:of / ;dfwfg tyf Jofs/0f lzIf0fsf k|rlnt ljlwx?sf] pkof]lutf cf}FNofpg | PsfO ltg M zAbfy{, zAb e08f/, jfSo /rgf tyf Jofs/0f lzIf0f -\*\_  #=! zAbfy{ tyf zAb e08f/ lzIf0f   * cfjZostf÷k|of]hg * zAbfy{ lzIf0fsf ljlwx? * zAb e08f/ ljsf;sf pkfox?   #=@ pvfg 6'Ssf lzIf0f   * dxTTj / k|of]hg * k|d'v sfo{snfkx?   #=# jfSo /rgf lzIf0f   * kl/ro / k|of]hg * k|d'v sfo{snfkx?   #=$ Jofs/0f lzIf0f  #=$=! cfwf/e"t lzIff, dfWolds lzIff / pRr lzIffdf Jofs/0f lzIf0fsf] cf}lrTo  #=$=@ g]kfnL Jofs/0f lzIf0fsf ;d:of / ;dfwfgsf pkfo  #=$=# Jofs/0f lzIf0fsf k|rlnt ljlw / ltgsf pkof]lutf   * lgudg ljlw * cfudg ljlw * efiff ;+;u{ jf k|ToIf efiff ljlw * efiff kf7Ø k':ts ljlw   ▪ sfo{d"ns ljlw |
| * g]kfnL lzIf0fsf ;Gbe{df sIff Joj:yfsf] dxTTj, sIff sf]7fsf] ;hfj6, n3' jf ;d / a[xt\ jf ljifd sIffdf g]kfnL lzIf0fsf ;d:of / ;'ljwf tyf ltgsf] sIff Joj:yf, eflifs k5f}6] ;d"xsf] klxrfg / ;Dab\w efiff lzIf0f sfo{snfkx?sf] ¿k/]vf atfpg * lg/fs/0ffTds lzIf0fsf] kl/ro ;lxt o;sf lzIf0f k|of]hg, q'l6 klxrfg k|lqmof, lzIf0f k|lqmof / lzIf0f qmd lgwf{/0f ug{ . | PsfO rf/ M sIff Joj:yf / lg/fs/0ffTds lzIf0f -^\_  $=! g]kfnL lzIf0f / sIff Joj:yf  $=!=! efiff lzIf0fdf sIff Joj:yfsf] dxTTj  $=!=@ efiff sIffsf]7fsf] ;hfj6  $=!=# n3' jf ;d tyf a[xt\ jf ljifd sIffdf g]kfnL lzIf0f M ;d:of / ;'ljwf   * ;d:of   – cg'zf;g ;DaGwL  – lnlvt sfo{sf] z'b\wfz'b\lw ;DaGwL  – ?lr ;DaGwL  – l;sfO k|efjsfl/tf ;DaGwL  – kf7Ø ;fdu|L ;DaGwL  – j}olSts Wofg ;DaGwL  – ljbØfyL{ ;xeflutf ;DaGwL  • ;'ljwf  – cg'ej / 1fgsf] Jofkstf  – leGg dflg;x?sf] ;Dks{  – ;xof]u / ;xlzIf0fsf] cj;/  – l;h{gfTdstf, gjLgtf / k];fut ljsf;sf] cj;/  $=!=$ n3' jf ;d / a[xt\ jf ljifd sIff Joj:yfkg M ljbØfyL{ juL{s/0fsf] cfwf/ / cfjZostf  $=!=% eflifs k5f}6] ;d"xsf] klxrfg / efiff lzIf0f sfo{snfk  $=@ lg/fs/0ffTds lzIf0f   * kl/ro * lzIf0f k|of]hg * eflifs q'l6sf] klxrfg k|lqmof * lg/fs/0ffTds lzIf0fsf pkfox?   ▪ lg/fs/0ffTds lzIf0fsf r/0fx? |
| * + g]kfnL efiff lzIf0fsf ;Gbe{df k|of]u ug{ ;lsg] ljljw lzIf0f ;fdu|Lx?sf] k|sf/ut kl/ro lbg   + g]kfnL lzIf0fdf pkof]u ug{ ;lsg] ljljw eflifs v]n, efiff k|of]u zfnf, sfo{qmdab\w l;sfO / sDKo'6/ h:tf gjLg lzIf0f k|ljlwx?sf] pkof]u ;Gbe{, ;DefJotf / pkof]lutfsf] n]vfhf]vf ug{ . | PsfO kfFr M lzIf0f ;fdu|L / ljljw lzIf0f k|ljlwx? -!)\_  %=! g]kfnL lzIf0fdf k|of]u ug{ ;lsg] lzIf0f ;fdu|Lsf ;fdfGo k|sf/   * df}lvs ;fdu|L * b[Zo ;fdu|L * >Jo ;fdu|L * >Job[Zo ;fdu|L * :kz{ ;fdu|L   %=@ g]kfnL lzIf0fdf pkof]u ug{ ;lsg] gjLg lzIf0f k|ljlwsf] kl/ro  %=@=! ljljw eflifs v]n   * l8«n * zAbhfn * sf]7] kb * cGtfIf/L * lr6\7f * k|f/lDes cIf/ lrgf/Lsf v]nx?   %=@=@ efiff k|of]u zfnf   * kl/ro / kl/efiff * pkof]lutf * k|sf/   %=@=# sfo{qmdab\w l;sfO   * kl/ro / k|sf/ * sfo{qmd lgdf{0fsf tl/sf * kf7Ø k':ts * pkof]lutf / ;Ldf   %=@=$ sDKo'6/ -;';fª\Vo\_ k|ljlw M kl/ro / pkof]lutf |
| * cWofkg of]hgfsf] kl/ro / k|of]hg atfpg * cWofkg of]hgfsf k|sf/ / 9fFrf pNn]v ug{ * ljleGg lzIf0fLo k|of]hgn] sfo{ of]hgf, PsfO of]hgf, b}lgs kf7 of]hgf, n3' kf7 of]hgf, b}lgs cWofkg of]hgf / n3' b}lgs cWofkg of]hgf lgdf{0f ug{ * n3' b}lgs cWofkg of]hgf lgdf{0f u/L n3' cWofkg cEof;df ;l/s x'g . | PsfO 5 M efiff lzIf0f / cWofkg of]hgf -^\_  ^=! cWofkg of]hgfsf] kl/ro / k|of]hg  ^=@ cWofkg of]hgfsf k|sf/ / 9fFrf   * + - sfo{ of]hgf     - PsfO of]hgf     - b}lgs kf7 of]hgf / n3' kf7 of]hgf     - b}lgs cWofkg of]hgf / n3' b}lgs cWofkg of]hgf   ^=# ljleGg k|of]hgn] sfo{ of]hgf, PsfO of]hgf, b}lgs kf7 of]hgf, n3' kf7 of]hgf / b}lgs cWofkg of]hgf lgdf{0f cEof;  ^=$ n3' b}lgs cWofkg of]hgf lgdf{0f / n3' cWofkg cEof; |

**$= lzIf0f k|ljlw**

o; kf7\of+zsf] cWoog cWofkgsf qmddf k|of]u x'g] lzIf0f k|ljlwnfO{ b'O{ efudf juL{s/0f ul/Psf] 5 . clwsf+z kf7\oj:t'x¿ cWofkg ug{ k|of]u ul/g] lzIf0f k|ljlw ;fwf/0f lzIf0f k|ljlwdf /flvPsf 5g\ eg] s'g} lglZrt PsfOcGtu{tsf kf7\oj:t' cWofkg ug{ k|of]u ul/g] lzIf0f k|ljlwnfO{ ljlzi6 lzIf0f k|ljlw cGtu{t /flvPsf] 5 .

**$=! ;fwf/0f lzIf0fk|ljlw**

k|To]s PsfOdf cfjZostfcg';f/ JofVofg, k|Zgf]Q/, 5nkmn tyf k|:t'tLs/0f ljlwsf] pkof]u ul/g] 5 . PsfOsf] k|s[ltcg'¿k kf7\ok':ts, ;xfos k':ts, ;Gbe{ k':ts, kf7kq, tflnsf / cf/]vx¿sf] pkof]u ul/g] 5 .

**$=@ ljlzi6 lzIf0fk|ljlw**

* PsfO Psdf ;}4flGts ;fdu|Lsf] ljZn]if0fsf nflu JofVofg / 5nkmn ljlwsf] pkof]u ul/g] 5 .
* PsfO b'O{df JofVofg, 5nkmn / k|:t'tLs/0f ljlwsf] pkof]u ul/g] 5 .
* PsfO ltgdf JofVofg, 5nkmn / k|:t'tLs/0f ljlw cjnDag ul/g] 5 ;fy} cfjZostf cg';f/ cf/]v tyf tflnsfsf] pkof]u ul/g] 5 .
* PsfO rf/df JolQmut / ;fd"lxs ¿kdf sfo{kq n]vg / k|:t'lt ug{ nufOg] 5 .

**%= d"Nofª\sg k|lqmof**

o; kf7\of+zsf] d"Nofª\sg k|lqmof b'O{ k|s[ltsf] x'g]5 M

-!\_ cfGtl/s d"Nofª\sg

-@\_ afXo d"Nofª\sg

**-!\_ cfGtl/s d"Nofª\sg**

cfGtl/s d"Nofª\sgsf nflu $)Ü cª\sef/ 5'6\ofOPsf] 5 . pQm d"Nofª\sgsf nflu lglb{i6 k|fof]lus sfo{cGtu{t /xL ljifo lzIfsn] lgDg cfwf/x¿ cjnDag ug{'kg{] 5 M

-s\_ pkl:ylt – % cª\s

-v\_ lzIf0f l;sfOdf ;xeflutf – % cª\s

-u\_ klxnf] cfGtl/s k/LIff – !) cª\s

-3\_ bf];|f] cfGtl/s k/LIff – !) cª\s

-ª\_ t];|f] cfGtl/s k/LIff – !) cª\s

klxnf] cfGtl/s k/LIffsf nflu ljifo lzIfsn] lgDglnlvt sfo{x¿ ug{ nufpg] 5g\M

cWoogkq n]vg, k':ts ;dLIff, n]v k'g/fjnf]sg, s'g} ljifo zLif{s s]lGb|t cWoog kq tof/L, cfGtl/s k/LIff, PsfO k/LIff, 1fg÷k|ltef k/LIf0f cflb .

bf];|f] cfGtl/s k/LIffsf nflu ljifo lzIfsn] lgDglnlvt sfo{x¿ ug{ nufpg] 5g\ M

kl/of]hgf sfo{, cj:yf÷36gf cWoog, uf]i7L, If]qsfo{, JolQmut jf ;d"xut k|ltj]bg n]vg, låtLo ;|f]t ;fdu|Ldf cfwfl/t cWoogkq n]vg, k"jf{Woog, k'g/fjnf]sg / clen]vLs/0f cflb .

t];|f] cfGtl/s k/LIffsf nflu cfGtl/s ;'wf/ k/LIffsf ?kdf ^) k"0ff{ª\ssf] k/LIff lnO{ To;nfO{ !) cª\sdf ?kfGt/ ul/g]5 .

pko{'Qm klxnf], bf];|f], t];|f] cfGtl/s k/LIff dWo] b'O{j6f lnlvt k/LIffdf ljBfyL{x? clgjfo{ ?kdf ;dfj]z x'g'kg{] 5 .

**@= afXo d"Nofª\sg**

afXo d"Nofª\sgsf nflu ^)Ü cª\sef/ 5'6\ofOPsf] 5 . pQm d"Nofª\sgsf nflu lq=lj= lzIffzf:q ;ª\sfo, 8Lgsf] sfof{noåf/f ;qfGtdf k/LIff lnOg] 5 . ;f] k/LIffdf ;f]lwg] k|Zgsf] k|s[lt, 9fFrf / To;sf] cª\sef/ lgDgfg';f/ x'g] 5 M

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **k|Zgsf] k|s[lt** | **;f]lwg] k|Zg ;ª\Vof** | **pQ/ lbg'kg{] k|Zg ;ª\Vof** | **k|ltk|Zg 5'6\ofOPsf] cª\s** | **k"0ff{ª\s** |
| ;d"x …sÚ M ax'j}slNks k|Zg | 10 | 10 | 1 | 10 |
| ;d"x …vÚ M 5f]6f] pQ/ cfpg] k|Zg\* | 6 | 6 | 5 | 30 |
| ;d"x …uÚ M nfdf] pQ/ cfpg] k|Zg | 2 | 2 | 10 | 20 |

*;k|;ª\u JofVof ug{ lbOg] k|Zgdf ;|f]t ;Gbe{ ;dfj]z ul/g] 5 .*

**pkl:ylt / sIff ;xeflutf**

-s\_ ;]d]:6/ k|0ffnLdf \*) k|ltzt pkl:ylt clgjfo{ x'g]5 . () k|ltzt;Dd pkl:ylt x'g] ljBfyL{nfO{ $ cª\s / () eGbf dfly pkl:yt x'g] ljBfyL{nfO{ % cª\s k|bfg ul/g]5 .

-v\_ sIff ;xeflutfsf] % cª\s dWo] ;DalGwt ljifo lzIfsn] ljBfyL{sf]]] sIff sfo{snfksf] d"Nofª\sg u/L cª\s k|bfg ug{]5g\ .

%= l;kmfl/; ul/Psf k':ts tyf ;Gbe{ ;fdu|Lx?

**kf7\ok':ts**

zdf{, s]bf/ k|;fb / dfwj k|;fb kf}8]n -@)^(\_, *g]kfnL efiff / ;flxTo lzIf0f,*  sf7df8f}F M ljbØfyL{ k':ts e08f/ -;a} PsfOsf nflu\_ .

**;Gbe{ ;fdu|L**

clwsf/L, x]dfª\u /fh -@)^&\_, *g]kfnL efiff lzIf0f,*  sf7df8f}F M ljbØfyL{ k':ts e08f/ .

=========================== -@)^&\_, *efiff lzIf0f M s]xL kl/k|]Io tyf kb\wlt,*  sf7df8f}F M ljbØfyL{ k':ts e08f/ .

clwsf/L, x]dfª\u /fh / s]bf/ k|;fb zdf{ -@)%^\_, *k|f/lDes g]kfnL lzIf0f*, sf7df8f}F M ljbØfyL{ k':ts e08f/ .

Pn]g, h]=aL= / P;= lk6 s8{/ -;g\ !(&\*\_, *Pl8ga/f sf];{ Og cKnfO8 lnª\lUjl:6S;* ef]No'd #–$, nG8g M cS;kmf]8{ o'lgel;{6L k|]; .

PN;, lyof] efg / cGo -;g\ !(\*$\_, *cKnfO8 lnª\lUjl:6S; PG8 nlg{ª PG8 l6lrª km/]g Nofª\Uj]h*, nG8g M P8jf8{ cfgf]{N8 .

8'n], a6{ S|of;g -;g\ !(\*@\_, *Nofª\Uj]h*, Go'of]s{ M cS;kmf]8{ o'lgel;{6L k|]; .

9sfn, zflGt k|;fb -@)^@\_, *g]kfnL efiff lzIf0f M kl/ro / k|of]u*, sf7df8f}F M dg sfdgf a'S; PG8 :6];g/L .

9'ª\u]n, ef]h/fh / b'uf{ k|;fb bfxfn -@)^&\_, *g]kfnL efiff lzIf0f*, sf7df8f}F M Pd=s]= klAn;;{ PG8 l8l:6«Ao'6;{ .

g'gg, 8]le8 -;g\ !((\*\_, *Nofª\Uj]h l6lrª d]yf]8f]nf]hL,* Go'of]s{ M k|]lG6; xn .

g]kfn /fli6«o lzIff cfof]u -;g\ !(%%\_, *g]kfndf lzIff*, sf7df8f}F M sn]h ckm Ph's];g .

kf08]o, /fd zsn -;g\ !(&^\_, *lxGbL lzIf0f*, cfu/f M ljgf]b k':ts e08f/ .

k]gL, cf/= -;g\ !((^\_, *c sf];{ Og Nofª\Uj]h l6lrª*, SoflDa|h M SoflDa|h o'lgel;{6L k|]; .

kf}8]n, dfwj k|;fb -@)&)\_, *efiff kf7Øqmd, kf7Ø k':ts tyf lzIf0f kb\wlt*, sf7df8f}F M ljbØfyL{ k':ts e08f/ .

dª\un, ->LdtL\_ pdf -;g\ @))#\_, *lxGbL lzIf0f*, gO{ lbNnL M cfs{ a's l8kf] .

/a6{, Nof8f] -;g\ !(^$\_, *Nofª\Uj]h l6lrª M c ;fOlG6lkms ofk|f]r,* Go'of]s{ M Dofu|lxn .

/fli6«o efiff gLlt ;'emfa cfof]u -@)%)\_, */fli6«o efiff gLlt ;'emfa cfof]usf] k|ltj]bg,*  sf7df8f}F M k|1f ejg .

l/r8{\; h]= PG8 6L= /f]h;{ -;g\ !(\*%\_, *ofk|f]r]h PG8 d]y8\; Og Nofª\Uj]h l6lrª,* SoflDa|h M SoflDa|h o'lgel;{6L k|]; .

================================ -;g\ !(()\_, *lb Nofª\Uj]h l6lrª Dofl6«S;,* SoflDa|h M SoflDa|h o'lgel;{6L k|]; .

nx/L, /hgLsfGt -;g\ !(^^\_, *lxGbL lzIf0f*, cfu/f M /fd k|;fb PG8 ;G; .

Nof8f], /a6{ -;g\ !(^$\_, *Nofª\Uj]h l6lrª M c ;fOlG6lkms Pk|f]r*, Go'of]s{ M Dofu|lxn .

ljlNsG;, 8L=P= -;g\ !(&@\_, *lnª\lUjl:6S; Og Nofª\Uj]h l6lrª*, nG8g M P8jf8{ cfgf]{N8 .

zdf{, s]bf/ k|;fb / dfwj k|;fb kf}8]n -@)^\*\_, *g]kfnL efiff lzIf0fsf ;Gbe{x?,* sf7df8f}F M ljbØfyL{ k':ts e08f/ .

zdf{, uf]kLgfy -;g\ !(\*)\_, *:s'n sl/s'nd Og g]kfn*, sf7df8f}F M x]d s'df/L zdf{ .

================== -@)$#\_, *g]kfndf lzIffsf] Oltxf;,* sf7df8f}F M x]d s'df/L zdf{ .

>Ljf:tj, /jLGb| gfy -;g\ !((^\_, *efiff lzIf0f,*  gO{ lbNnL M lb d}sldng sDkgL ckm OlG8of lnld6]8 .

:6g{, Pr=Pr= -;g\ !(\*#\_, *kmG8fd]G6n sG;]K6 ckm Nofª\Uj]h l6lrª*, cS;kmf]8{ M cS;kmf]8{ o'lgel;{6L k|]; .

================= -;g\ !((@\_, *O:o'h PG8 cK;G; Og Nofª\Uj]h l6lrª*, cS;kmf]8{ M cS;kmf]8{ o'lgel;{6L k|]; .

:6A;, dfOs]n -;g\ !(\*^\_, *Ph's];gn lnª\lUjl:6S;,* cS;kmf]8{ M cS;kmf]8{ o'lgel;{6L k|]; .

Åofln8], Pd=P=s]=/ cGo -;g\ !(^$\_, *lb lnª\lUjl:6s ;fOG;]h PG8 Nofª\Uj]h l6lrª*, nG8g M nªDofg .

Åo'h]h, cy{/ -;g\ !(\*(\_, *6]l:6ª km/ Nofª\Uj]h l6r/,* Go'of]s{ M SoflDa|h o'lgel;{6L k|]; .

**kf7\of+z zLif{s M eflifs ljwf lzIf0f** qm]=cf= M #

kf7\of+z ;+Vof M g]kf=lz= %#^ kf7\of+z k|s[lt M ;}4flGts

tx M Pd=P8= ;]d]:6/ M bf];|f] hDdf kf73G6L M $\*

**!= kf7Øf+z kl/ro**

k|:t't kf7Øf+z lzIffzf:q ;ª\sfo cGtu{t ;]d]:6/ k|0ffnLdf cfwfl/t ‘g]kfnL lzIff’ ljifo lnO{ :gftsf]Q/ -Pd=P8=\_ txdf ljlzi6Ls/0f ug{ rfxg] ljBfyL{x?sf nflu tof/ ul/Psf] xf] . o; kf7\of+zdf g]kfnL efiff lzIf0fsf ;Gbe{df eflifs l;k ljsf;sf b[li6n] ljwf lzIf0f tyf cf:jfbgsf b[li6n] ;flxlTos ljwf lzIf0f k|ljlw ;DaGwL ljljw kIfx?sf] ;}b\wflGts / k|fof]lus ;'em ljsf; ug]{ vfnsf eflifs ljwf / ;flxlTos ljwf lzIf0f;Fu ;DalGwt ;fdu|Lx? /flvPsf] 5 .

**@= ;fwf/0f pb\b]Zo**

o; kf7Øf+zsf] cWoog kl5 ljbØfyL{x? lgDg lnlvt ;fwf/0f pb\b]Zox? xfl;n ug{ ;Ifd x'g] 5g\ M

* eflifs l;k ljsf;sf b[li6n] eflifs ljwf lzIf0fsf ;fdfGo / ljlzi6 k|of]hg tyf k|lqmofx? atfpg
* eflifs l;k ljsf;sf b[li6n] ljljw eflifs ljwf lzIf0fsf ljlzi6 k|of]hg / k|lqmofx?sf] j0f{g ug{
* efiff lzIf0f / ;flxlTos ljwf lzIf0fdf /x]sf leGgtfx?sf] t'ngf ;lxt cf:jfbgsf b[li6n] ;flxlTos ljwf lzIf0fsf] cfjZostf, dxTTj / k|of]hg atfpg
* cf:jfbgLo b[li6n] ljljw ;flxlTos ljwf lzIf0fsf k|of]hg / k|lqmofx?sf] ljj]rgf ug{ .

**#= ljlzi6 pb\b]Zo / kf7Ø ljifo**

|  |  |
| --- | --- |
| v08 ‘s’ eflifs l;k ljsf;sf b[li6n] ljwf lzIf0f | |
| ljlzi6 pb\b]Zo | kf7Øljifo |
| * eflifs l;k lzIf0fdf ljwf lzIf0fsf] ;DaGw b]vfpg * eflifs l;k ljsf;sf b[li6n] ljwf lzIf0fsf ;fdfGo k|of]hgx? atfpg * eflifs l;k ljsf;sf b[li6n] ljwf lzIf0fsf ljlzi6 k|of]hgx? cf}FNofpg * eflifs l;k ljsf;sf b[li6n] ljwf lzIf0fsf ;fdfGo k|lqmofx? lgwf{/0f ug{ * eflifs l;k ljsf;sf b[li6n] ljwf lzIf0fsf ljlzi6 k|lqmofx? Oª\lut ug{ . | PsfO Ps M efiff lzIf0f / ljwf lzIf0f -!)\_  !=! eflifs l;k lzIf0f / ljwf lzIf0fsf] ;DaGw  !=@ eflifs l;k ljsf;sf b[li6n] ljwf lzIf0fsf ;fdfGo k|of]hg\*  !=# eflifs l;k ljsf;sf b[li6n] ljwf lzIf0fsf ljlzi6 k|of]hg  !=$ eflifs l;k ljsf;sf b[li6n] ljwf lzIf0fsf ;fdfGo k|lqmof  !=% eflifs l;k ljsf;sf b[li6n] ljwf lzIf0fsf ljlzi6 k|lqmof |
| * eflifs l;k ljsf;sf b[li6n] syf lzIf0fsf k|of]hg / k|lqmofx? cf}FNofpg * eflifs l;k ljsf;sf b[li6n] sljtf lzIf0fsf k|of]hg / k|lqmofx? lgwf{/0f ug{ * eflifs l;k ljsf;sf b[li6n] lgaGw lzIf0fsf k|of]hg / k|lqmofx? cfsng ug{ * eflifs l;k ljsf;sf b[li6n] ¿ks ljwfsf ljleGg pkljwf lzIf0fsf k|of]hg / k|lqmofx? k|:t't ug{ * eflifs l;k ljsf;sf b[li6n] hLjgL lzIf0fsf k|of]hg / k|lqmofx? :ki6 kfg{ * eflifs l;k ljsf;sf b[li6n] lr7L÷lgj]bg lzIf0fsf k|of]hg / k|lqmofx? pNn]v ug{ * eflifs l;k ljsf;sf b[li6n] b}lgsL lzIf0fsf k|of]hg / k|lqmofx?sf] ;"rL tof/ ug{ * eflifs l;k ljsf;sf b[li6n] ljljw efifftTTj lzIf0fsf k|of]hg / k|lqmofx? lgSof]{n ug{ . | PsfO b'O{ M eflifs l;k ljsf;sf b[li6n] ljljw ;flxlTos / ;flxTo]t/ ljwf lzIf0fsf ljlzi6 k|of]hg / k|lqmof -%\_  @=! syf lzIf0f M k|of]hg / k|lqmof\*  @=@ sljtf lzIf0f M k|of]hg / k|lqmof\*  @=# lgaGw lzIf0f M k|of]hg / k|lqmof\*  @=$ ¿ks lzIf0f\*  @=$=! ;+jfb lzIf0f M k|of]hg / k|lqmof\*  @=$=@ jfb ljjfb lzIf0f M k|of]hg / k|lqmof\*  @=$=# dgf]jfb lzIf0f M k|of]hg / k|lqmof\*  @=$=$ Psfª\sL lzIf0f M k|of]hg / k|lqmof\*  @=$=% jSt[tf lzIf0f M k|of]hg / k|lqmof\*  @=% hLjgL lzIf0f M k|of]hg / k|lqmof\*  @=^ lr7L÷lgj]bg lzIf0f M k|of]hg / k|lqmof\*  @=& b}lgsL lzIf0f M k|of]hg / k|lqmof\*  @=\* efifftTTj lzIf0f\*  @=\*=! j0f{ ljGof; / n]Vo lrÅg lzIf0f M k|of]hg / k|lqmof\*  @=\*=@ Jofs/0f lzIf0f M k|of]hg / k|lqmof\*  @=\*=# zAb e08f/ lzIf0f M k|of]hg / k|lqmof\* |
| * v08 ‘v’ ;flxlTos cf:jfbgsf ¿kdf ljwf lzIf0f | |
| * efiff lzIf0fsf ;Gbe{df ;flxlTos ljwf lzIf0fsf] kl/ro lbg * eflifs l;k lzIf0f / ;flxlTos ljwf lzIf0fdf leGgtf b]vfpg * eflifs l;k lzIf0fdf ;flxlTos ljwf lzIf0fsf] cfjZostf / dxTTj cf}FNofpg * cf:jfbgsf b[li6n] ;flxlTos ljwf lzIf0fsf k|of]hg :ki6 kfg{ . | PsfO ltg M efiff lzIf0f / ;flxlTos ljwf lzIf0f -!)\_  #=! ;flxTo lzIf0fsf ¿kdf ljwf lzIf0fsf] kl/ro  #=@ eflifs l;k lzIf0f / ;flxlTos ljwf lzIf0fdf leGgtf  #=# eflifs l;k lzIf0fdf ;flxlTos ljwf lzIf0fsf] cfjZostf / dxTTj  #=$ ;flxlTos cf:jfbgsf b[li6n] ljwf lzIf0fsf] k|of]hg |
| * ;flxlTos ljwfsf ¿kdf sljtf sfJosf] kl/ro, lzIf0f cfjZostf / k|of]hg, lzIf0f ljlw, lzIf0f qmd tyf ;xsfo{snfk :ki6 kfg{ * gf6s÷Psfª\sL ljwfsf] kl/ro ;lxt lzIf0f cfjZostf, k|of]hg, lzIf0f ljlw / lzIf0f qmdsf] j0f{g ug{ | PsfO rf/ M cf:jfbgLo b[li6n] ljljw ;flxlTos ljwf lzIf0fsf k|of]hg / k|lqmof -!#\_  $=! sljtf sfJo ljwf lzIf0f  $=!=! sljtf sfJosf] kl/ro  $=!=@ efiff kf7Øqmddf sljtf sfJosf] :yfg  $=!=# sljtf sfJo lzIf0fsf] cfjZostf / k|of]hg  $=!=$ sljtf sfJo lzIf0fsf ljleGg ljlw / k|lqmof  $=!=% sljtf sfJo lzIf0fsf] qmd  $=!=^ sljtf sfJok|lt ?lr pTkGg ug]{ ;xsfo{snfkx?  $=@ gf6s÷Psfª\sL ljwf lzIf0f  $=@=! gf6s÷Psfª\sLsf] kl/ro  $=@=@ gf6s÷Psfª\sL lzIf0fsf] cfjZostf / k|of]hg  $=@=# gf6s÷Psfª\sL lzIf0fsf ljlw / k|lqmof  $=@=$ gf6s÷Psfª\sL lzIf0fsf] qmd |
| * lgaGw ljwfsf] kl/ro, lzIf0f cfjZostf, k|of]hg, lzIf0f ljlw / lzIf0f qmdsf] aofg ug{ * syf÷pkGof; ljwfsf] lzIf0f cfjZostf / k|of]hg, lzIf0f ljlw Pjd\ lzIf0f qmdsf] ¿k/]vf atfpg * ;flxTo zf:q ljwfsf] kl/ro, lzIf0f cfjZostf / k|of]hg tyf lzIf0f ljlwx?sf] j:t'ut JofVof ug{ . | PsfO kfFr M lgaGw, syf÷pkGof; / ;flxTo zf:q ljwf lzIf0f M k|of]hg / k|lqmof -!)\_  %=! lgaGw ljwf lzIf0f  %=!=! lgaGwsf] kl/ro \*  %=!=@ lgaGw lzIf0fsf] cfjZostf / k|of]hg\*  %=!=# lgaGw lzIf0fsf ljlw / k|lqmof  %=!=$ lgaGw lzIf0fsf] qmd  %=@ syf÷pkGof; ljwf lzIf0f  %=@=! syf÷pkGof;sf] kl/ro \*  %=@=@ syf÷pkGof; lzIf0fsf] cfjZostf / k|of]hg  %=@=# syf÷pkGof; lzIf0fsf ljlw / k|lqmof  %=@=% syf÷pkGof; lzIf0fsf] qmd  %=# ;flxTo zf:q ljwf lzIf0f  %=#=! ;flxTo zf:qsf] kl/ro  %=#=@ ;flxTo zf:q lzIf0fsf] cfjZostf / k|of]hg  %=#=# ;flxTo zf:q lzIf0fsf ljlw / k|lqmof |

**$= lzIf0f k|ljlw**

o; kf7\of+zsf] cWoog cWofkgsf qmddf k|of]u x'g] lzIf0f k|ljlwnfO{ b'O{ efudf juL{s/0f ul/Psf] 5 . clwsf+z kf7\oj:t'x¿ cWofkg ug{ k|of]u ul/g] lzIf0f k|ljlw ;fwf/0f lzIf0f k|ljlwdf /flvPsf 5g\ eg] s'g} lglZrt PsfOcGtu{tsf kf7\oj:t' cWofkg ug{ k|of]u ul/g] lzIf0f k|ljlwnfO{ ljlzi6 lzIf0f k|ljlw cGtu{t /flvPsf] 5 .

**$=! ;fwf/0f lzIf0fk|ljlw**

k|To]s PsfOdf cfjZostfcg';f/ JofVofg, k|Zgf]Q/, 5nkmn tyf k|:t'tLs/0f ljlwsf] pkof]u ul/g] 5 . PsfOsf] k|s[ltcg'¿k kf7\ok':ts, ;xfos k':ts, ;Gbe{ k':ts, kf7kq, tflnsf / cf/]vx¿sf] pkof]u ul/g] 5 .

**$=@ ljlzi6 lzIf0fk|ljlw**

PsfO Psdf ;}4flGts ;fdu|Lsf] ljZn]if0fsf nflu JofVofg / 5nkmn ljlwsf] pkof]u ul/g] 5 .

PsfO b'O{df JofVofg, 5nkmn / k|:t'tLs/0f ljlwsf] pkof]u ul/g] 5 .

PsfO ltgdf JofVofg, 5nkmn / k|:t'tLs/0f ljlw cjnDag ul/g] 5 ;fy} cfjZostf cg';f/ cf/]v tyf tflnsfsf] pkof]u ul/g] 5 .

PsfO rf/df JolQmut / ;fd"lxs ¿kdf sfo{kq n]vg / k|:t'lt ug{ nufOg] 5 .

|  |  |
| --- | --- |
| PsfO Ps  eflifs l;k ljsf;sf b[li6n] ljwf lzIf0fsf ;fdfGo k|of]hg\* | **k|fof]lus sfo{snfk**  JolQmut sIff k|:t'lt |
| PsfO b'O{  syf lzIf0f M k|of]hg / k|lqmof\*  sljtf lzIf0f M k|of]hg / k|lqmof\*  lgaGw lzIf0f M k|of]hg / k|lqmof\*  ;+jfb lzIf0f M k|of]hg / k|lqmof\*  jfb ljjfb lzIf0f M k|of]hg / k|lqmof\*  dgf]jfb lzIf0f M k|of]hg / k|lqmof\*  Psfª\sL lzIf0f M k|of]hg / k|lqmof\*  jSt[tf lzIf0f M k|of]hg / k|lqmof\*  hLjgL lzIf0f M k|of]hg / k|lqmof\*  lr7L÷lgj]bg lzIf0f M k|of]hg / k|lqmof\*  b}lgsL lzIf0f M k|of]hg / k|lqmof\*  j0f{ ljGof; / n]Vo lrÅg lzIf0f M k|of]hg / k|lqmof\*  Jofs/0f lzIf0f M k|of]hg / k|lqmof\*  zAb e08f/ lzIf0f M k|of]hg / k|lqmof\* | JolQmut sIff k|:t'lt  cWoog kq n]vg  kl/of]hgf sfo{  JolQmut sIff k|:t'lt  JolQmut sIff k|:t'lt  JolQmut sIff k|:t'lt  ;fd"lxs cWoog kq n]vg  JolQmut sIff k|:t'lt  kl/of]hgf sfo{  JolQmut sIff k|:t'lt  JolQmut sIff k|:t'lt  ;fd"lxs kl/of]hgf sfo{  cWoog kq n]vg  JolQmut tyf ;fd"lxs sIff k|:t'lt |
| PsfO kfFr  lgaGwsf] kl/ro \*  lgaGw lzIf0fsf] cfjZostf / k|of]hg\*  lgaGw lzIf0fsf ljlw / k|lqmof  lgaGw lzIf0fsf] qmd  syf÷pkGof; ljwf lzIf0f  syf÷pkGof;sf] kl/ro \*  syf÷pkGof; lzIf0fsf] cfjZostf / k|of]hg  syf÷pkGof; lzIf0fsf ljlw / k|lqmof  syf÷pkGof; lzIf0fsf] qmd  ;flxTo zf:q ljwf lzIf0f  ;flxTo zf:qsf] kl/ro  ;flxTo zf:q lzIf0fsf] cfjZostf / k|of]hg  ;flxTo zf:q lzIf0fsf ljlw / k|lqmof | JolQmut sIff k|:t'lt  JolQmut sIff k|:t'lt  JolQmut sIff k|:t'lt  JolQmut sIff k|:t'lt  ;fd"lxs cWoog kq n]vg  ;fd"lxs cWoog kq n]vg  ;fd"lxs cWoogkq n]vg  ;fd"lxs cWoogkq n]vg  ;fd"lxs cWoogkq n]vg  JolQmut sIff k|:t'lt  JolQmut sIff k|:t'lt  JolQmut sIff k|:t'lt  JolQmut sIff k|:t'lt |

*k|fof]lus sfo{snfk cGtu{t dfly ljleGg PsfOsf pkzLif{sdf tf/f -\*\_ lrGx lbO{ ;+s]t ul/Psf ;fdu|Lsf ;fy;fy} kf7\oqmd leq ;dfj]z ePsf c? ;fdu|Lx?nfO{ klg lzIfsn] cfjZostfcg';f/ JolQmut tyf ;fd"lxs sIffsfo{ Pjd\ kl/of]hgf sfo{, uf]i7Lkq n]vg, k|:t'lt / l6Kk0fL h:tf sfo{snfkx? u/fpg' cfjZos 7flgPsf] 5 .*

**%= d"Nofª\sg k|lqmof**

o; kf7\of+zsf] d"Nofª\sg k|lqmof b'O{ k|s[ltsf] x'g]5 M

-!\_ cfGtl/s d"Nofª\sg

-@\_ afXo d"Nofª\sg

**-!\_ cfGtl/s d"Nofª\sg**

cfGtl/s d"Nofª\sgsf nflu $)Ü cª\sef/ 5'6\ofOPsf] 5 . pQm d"Nofª\sgsf nflu lglb{i6 k|fof]lus sfo{cGtu{t /xL ljifo lzIfsn] lgDg cfwf/x¿ cjnDag ug{'kg{] 5 M

-s\_ pkl:ylt – % cª\s

-v\_ lzIf0f l;sfOdf ;xeflutf – % cª\s

-u\_ klxnf] cfGtl/s k/LIff – !) cª\s

-3\_ bf];|f] cfGtl/s k/LIff – !) cª\s

-ª\_ t];|f] cfGtl/s k/LIff – !) cª\s

klxnf] cfGtl/s k/LIffsf nflu ljifo lzIfsn] lgDglnlvt sfo{x¿ ug{ nufpg] 5g\M

cWoogkq n]vg, k':ts ;dLIff, n]v k'g/fjnf]sg, s'g} ljifo zLif{s s]lGb|t cWoog kq tof/L, cfGtl/s k/LIff, PsfO k/LIff, 1fg÷k|ltef k/LIf0f cflb .

bf];|f] cfGtl/s k/LIffsf nflu ljifo lzIfsn] lgDglnlvt sfo{x¿ ug{ nufpg] 5g\ M

kl/of]hgf sfo{, cj:yf÷36gf cWoog, uf]i7L, If]qsfo{, JolQmut jf ;d"xut k|ltj]bg n]vg, låtLo ;|f]t ;fdu|Ldf cfwfl/t cWoogkq n]vg, k"jf{Woog, k'g/fjnf]sg / clen]vLs/0f cflb .

t];|f] cfGtl/s k/LIffsf nflu cfGtl/s ;'wf/ k/LIffsf ?kdf ^) k"0ff{ª\ssf] k/LIff lnO{ To;nfO{ !) cª\sdf ?kfGt/ ul/g]5 .

pko{'Qm klxnf], bf];|f], t];|f] cfGtl/s k/LIff dWo] b'O{j6f lnlvt k/LIffdf ljBfyL{x? clgjfo{ ?kdf ;dfj]z x'g'kg{] 5 .

**@= afXo d"Nofª\sg**

afXo d"Nofª\sgsf nflu ^)Ü cª\sef/ 5'6\ofOPsf] 5 . pQm d"Nofª\sgsf nflu lq=lj= lzIffzf:q ;ª\sfo, 8Lgsf] sfof{noåf/f ;qfGtdf k/LIff lnOg] 5 . ;f] k/LIffdf ;f]lwg] k|Zgsf] k|s[lt, 9fFrf / To;sf] cª\sef/ lgDgfg';f/ x'g] 5 M

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **k|Zgsf] k|s[lt** | **;f]lwg] k|Zg ;ª\Vof** | **pQ/ lbg'kg{] k|Zg ;ª\Vof** | **k|ltk|Zg 5'6\ofOPsf] cª\s** | **k"0ff{ª\s** |
| ;d"x …sÚ M ax'j}slNks k|Zg | 10 | 10 | 1 | 10 |
| ;d"x …vÚ M 5f]6f] pQ/ cfpg] k|Zg\* | 6 | 6 | 5 | 30 |
| ;d"x …uÚ M nfdf] pQ/ cfpg] k|Zg | 2 | 2 | 10 | 20 |

*\* ;k|;ª\u JofVof ug{ lbOg] k|Zgdf ;|f]t ;Gbe{ ;dfj]z ul/g] 5 .*

**pkl:ylt / sIff ;xeflutf**

-s\_ ;]d]:6/ k|0ffnLdf \*) k|ltzt pkl:ylt clgjfo{ x'g]5 . () k|ltzt;Dd pkl:ylt x'g] ljBfyL{nfO{ $ cª\s / () eGbf dfly pkl:yt x'g] ljBfyL{nfO{ % cª\s k|bfg ul/g]5 .

-v\_ sIff ;xeflutfsf] % cª\s dWo] ;DalGwt ljifo lzIfsn] ljBfyL{sf]]] sIff sfo{snfksf] d"Nofª\sg u/L cª\s k|bfg ug{]5g\ .

**^=l;kmfl/; ul/Psf ;Gbe{ ;fdu|Lx?**

* clwsf/L, x]dfª\ /fh -@)^&\_, *g]kfnL efiff lzIf0f*, sf7df8f}F M ljbØfyL{ k':ts e08f/ .
* clwsf/L, x]dfª\u /fh / s]bf/ k|;fb zdf{ -@)%^\_, *k|f/lDes g]kfnL lzIf0f*, sf7df8f}F M ljbØfyL{ k':ts e08f/
* 9sfn, zflGt k|;fb -@)^@\_, *g]kfnL efiff lzIf0f M kl/ro / k|of]u*, sf7df8f}F M dg sfdgf a'S; PG8 :6];g/L .
* 9'ª\u]n, ef]h/fh / b'uf{ k|;fb bfxfn -@)^&\_, *g]kfnL efiff lzIf0f*, sf7df8f}F M Pd=s]= klAn;;{ PG8 l8l:6«Ao'6;{ .
* g'gg, 8]le8 -;g\ !((\*\_, *Nofª\Uj]h l6lrª d]yf]8f]nf]hL,* Go'of]s{ M k|]lG6; xn .
* kf08]o, /fd zsn -;g\ !(&^\_, *lxGbL lzIf0f*, cfu/f M ljgf]b k':ts e08f/ .
* /fli6«o efiff gLlt ;'emfa cfof]u -@)%)\_, */fli6«o efiff gLlt ;'emfa cfof]usf] k|ltj]bg,*  sf7df8f}F M k|1f ejg .
* l/r8{\;, h]= PG8 6L= /f]h;{ -;g\ !(\*%\_, *ofk|f]r]h PG8 d]y8\; Og Nofª\Uj]h l6lrª,* SoflDa|h M SoflDa|h o'lgel;{6L k|]; .
* l/r8{\;, h]= PG8 6L= /f]h;{ -;g\ !(()\_, *lb Nofª\Uj]h l6lrª Dofl6«S;,* SoflDa|h M SoflDa|h o'lgel;{6L k|]; .
* /a6{, Nof8f] -;g\ !(^$\_, *Nofª\Uj]h l6lrª M c ;fOlG6lkms ofk|f]r,* Go'of]s{ M Dofu|lxn .
* nfh/, lulnog -;g\ !((#\_, *ln6/]r/ PG8 Nofª\Uj]h l6lrª,* SoflDa|h M SoflDa|h o'lgel;{6L k|]; .
* nfld5fg], ofbjk|sfz -@)&)\_, *g]kfnL efiff lzIf0f,* sf7df8f}+ M ljBfyL{ k':ts e08f/ .
* >Ljf:tj, /jLGb| gfy -;g\ !((^\_, *efiff lzIf0f,*  gO{ lbNnL M lb d}sldng sDkgL ckm OlG8of lnld6]8 .
* Åo'h]h, cy{/ -;g\ !(\*(\_, *6]l:6ª km/ Nofª\Uj]h l6r/,* Go'of]s{ M SoflDa|h o'lgel;{6L k|]; .
* zdf{, s]bf/ k|;fb / dfwj k|;fb kf}8]n -@)^&\_, *g]kfnL efiff / ;flxTo lzIf0f*, sf7df8f}F M ljbØfyL{ k':ts e08f/ .
* zdf{, s]bf/ k|;fb / dfwj k|;fb kf}8]n -@)^\*\_, *g]kfnL efiff lzIf0fsf ;Gbe{x?*, sf7df8f}F M ljbØfyL{ k':ts e08f/ .

efifflj1fgsf k|d'v l;4fGt

kf7\of+z zLif{s M qm]=cf= M #

kf7\of+z ;ª\Vof M g]kf=lz= %#& k"0ff{ª\s M

kf7\of+z k|s[lt M ;}4flGts pQL0ff{ª\s M

tx M Pd= P8= k|ltxKtf kf73G6L M

;]d]:6/ M t];|f] hDdf kf73G6L M

**!= kf7\of+z kl/ro**

k|:t't kf7\of+z lqe'jg ljZjljBfno, lzIffzf:q ;ª\sfocGtu{t ;]d]:6/ k|0ffnLdf cfwfl/t b'O{ a;]{ :gftsf]Q/ -Pd= P8=\_ txdf cWoog ug]{ ljBfyL{x¿sf nflu tof/ kfl/Psf] xf] . o; kf7\of+zaf6 k"j{ / klZrdsf] k|d'v eflifs lrGtg / To;sf pknlAw, ;+/rgfTds efifflj1fg, ¿kfy{k/s Jofs/0f, Joj:yfks/ Jofs/0f, ¿kfGt/0f Jofs/0f / sf/s Jofs/0fsf] k[i7e"ld, cfwf/e"t dfGotf, eflifs ljZn]if0fsf k|lqmof / k4lt Pjd\ ltgsf pknlAw;Fu ljBfyL{x¿nfO{ kl/lrt u/fpg] ck]If /flvPsf] 5 .

**@= ;fwf/0f p2]Zo**

o; kf7\of+zsf ;fwf/0f p2]Zo lgDglnlvt 5g\ M

* eflifs lrGtgsf] k"jL{o tyf kfZrfTo k/Dk/fsf] hfgsf/L k|fKt ug]{,
* ;+/rgfjfbL Jos/0fsf ljleGg df]8, d"ne"t cjwf/0ff / eflifs ljZn]if0f;Fu cjut x'g],
* ¿kfy{k/s Jofs/0fsf] k[i7e"ld, cfwf/e"t dfGotf / eflifs ljZn]if0f;Fu kl/lrt x'g],
* Joj:yfks Jofs/0fsf] k[i7e"ld, d"ne"t wf/0f Pjd\ eflifs ljZn]if0f k|lqmofaf/] hfgsf/L lng],
* ¿kfGt/0f Jofs/0fsf] k[i7e"ld, r/0fljefhg, cfwf/e"t dfGotf, eflifs ljZn]if0fsf k|sf/ / k|lqmof Pjd\ ltgsf pknlAwsf] rrf{ ug]{ /
* sf/s Jofs/0fsf] k[i7e"ld, cfwf/e"t cjwf/0ff, eflifs ljZn]if0f k|lqmof / pknlAw k|:t't ug]{ .

**#= ljlzi6 p2]Zo tyf kf7\oljifo**

|  |  |
| --- | --- |
| **ljlzi6 p2]Zo** | **kf7\oljifo** |
| * eflifs lrGtsf] k"jL{o k/Dk/fsf] rrf{ ug{ * k"jL{o k/Dk/fdf j}lbs / nf}lss eflifs lrGtgsf] ¿k/]vf k|:t't ug{ * kfl0flg o'u Pjd\ To;sf k"j{jtL{ / pQ/jtL{ k/Dk/fsf] aofg ug{ * eflifs lrGtgsf] kfZrfTo k/Dk/fsf] j0f{g ug{ * kfZrfTo k/Dk/fdf lu|;]nL, /f]dnL Pjd\ k/Dk/fut cª\u|]hL Jofs/0fsf] eflifs lrGtg k|:t't ug{ * P]ltxfl;s / t'ngfTds eflifs cWoogsf] pknlAw j0f{g ug{ * k/Dk/fut eflifs lrGtgsf pknlAw / ;Ldf lgwf{/0f ug{ | **PsfO Ps M eflifs lrGtgsf] k"jL{o / kfZrfTo k/Dk/f -\*\_**  !=! eflifs lrGtgsf] k"jL{o k/Dk/f  !=!=! eflifs lrGtgsf] k"jL{o k/Dk/f  !=!=@ nf}lss ;+:s[tdf eflifs lrGtg  • kfl0flg k"j{o'u  • kfl0flg o'u  • kfl0flg pQ/ o'u  !=!=# kfl0flg Jofs/0fdf kb / kbfy{  !=@ eflifs lrGtgsf] kfZrfTo k/Dk/f  !=@=! eflifs lrGtgsf] lu|;]nL k/Dk/f  !=@=@ eflifs lrGtgsf] /f]d]nL k/Dk/f  !=@=# cª\u|]hLsf] k/Dk/fut eflifs lrGtg  !=# P]ltxfl;s / t'ngfTds eflifs cWoogsf] pknlAw  !=$ k/Dk/fut k"jL{o / kfZrfTo eflifs lrGtgsf pknlAw / ;Ldf |
| * ;+/rgfTds efifflj1fgsf] kl/ro lbg * ;+/rgfTds efifflj1fgsf] ljsf; / k|d'v df]8 / ltgsf pknlAwx¿sf] rrf{ ug{ * o'/f]k]nL ;+/rgfjfbsf lglb{i6 ;Dk|bfo / ltgsf pknlAwsf] j0f{g ug{ * cd]l/sfnL ;+/rgfjfbsf] kl/ro lbO{ ljsf;qmd atfpg * ;+/rgfjfbsf cfwf/e"t dfGotfsf] j0f{g ug{ * j0f{, ¿k / jfSo ljZn]if0fsf ;+/rgfjfbL k4lt pNn]v ug{ * ;+/rgfjfb / efifflzIf0fsf] ;DaGw cf}+Nofpg * ;+/rgfjfbsf pknlAw / ;Ldf lgwf{/0f ug{ | **PsfO b'O{ M ;+/rgfTds efifflj1fg -\*\_**  @=! ;+/rgfTds efifflj1fgsf] kl/ro  @=@ ;+/rgfTds efifflj1fgsf] ljsf; / df]8  @=# o'/f]k]nL ;+/rgfjfbsf] kl/ro  @=#=! h]g]ef ;Dk|bfo / o;sf pknlAw  @=#=@ k|fu ;Dk|bfo / o;sf pknlAw  @=#=#= sf]k]gx]ug ;Dk|bfo / o;sf pknlAw  @=$ cd]l/sfnL ;+/rgfjfbsf] kl/ro / ljsf;  @=% ;+/rgfjfbsf cfwf/e"t dfGotf  @=^ eflifs ljZn]if0fsf] ;+/rgfjfbL k4lt  @=^=! j0f{  @=^=@ ¿k  @=^=# jfSo  @=& ;+/rgfjfb / efifflzIf0f  @=\* ;+/rgfjfbsf pknlAw / ;Ldf |
| * ¿kfy{k/s Jofs/0fsf] kl/ro lbg * ¿kfy{k/s Jofs/0fsf cfwf/e"t dfGotf atfpg * ¿kfly{dsf] kl/ro / kl/efiff pNn]v ug{ * ¿kfly{dnfO{ Jofs/l0fs ;f]kfgqmddf lrgfpg * ¿kfy{k/s k4ltdf cfwfl/t eO{ eflifs ljZn]if0f ug{ * ¿kfy{k/s / efifflzIf0fsf] ;DaGw :ki6 kfg{ / * ¿kfy{k/s Jofs/0fsf pknlAw / ;Ldf lgwf{/0f ug{ | **PsfO ltg M ¿kfy{k/s Jofs/0f -\*\_**  #=! ¿kfy{k/s Jofs/0fsf] kl/ro  #=@ ¿kfy{k/s Jofs/0fsf cfwf/e"t dfGotf  #=# ¿kfly{dsf] kl/ro / kl/efiff  #=$ Jofs/l0fs ;f]kfgqmd / ¿kfly{d  #=% ¿kfy{k/s k4ltdf eflifs ljZn]if0f  #=^ ¿kfy{k/s / efifflj1fg  #=& ¿kfy{k/s Jofs/0fsf pknlAw / ;Ldf |
| * Joj:yfk/s Jofs/0fsf] kl/ro lbg * Joj:yfk/s Jofs/0fsf k|d'v dfGotfx¿sf] j0f{g ug{ * Joj:yfks/ Jofs/0f / cy{sf] ;DaGw cf}+Nofpg * Joj:yfk/s k4ltdf eflifs ljZn]if0f ug{ * Joj:yfk/s Jos/0f / efifflzIf0fsf] ;DaGw k|:6 ug{ * Joj:yfk/s Jofs/0fsf pknlAw / ;Ldf lgwf{/0f ug{ | **PsfO rf/ M Joj:yfk/s Jofs/0f -\*\_**  $=! Joj:yfk/s Jofs/0fsf] kl/ro  $=@ Joj:yfk/s Jofs/0fsf k|d'v dfGotf  $=@=! efiffsf k|fylds sfo{d"ns tx  $=@=@ efiffsf dfk tyf sf]l6x¿  $=@=# efiffsf dfgx¿  $=@=# efiffsf sfo{d"ns 36sx¿  $=# Joj:yfk/s Jofs/0f / cy{  $=$ Joj:yfk/s k4ltdf eflifs ljZn]if0f  $=% Joj:yfk/s Jos/0f / efifflzIf0f  $=^ Joj:yfk/s Jofs/0fsf pknlAw / ;Ldf |
| * ¿kfGt/0f Jofs/0fsf] k[i7e"ld / kl/ro lbg * ¿kfGt/0f Jofs/0fsf] ljsf;qmdsf] rrf{ ug{ * ¿kfGt/0f Jofs/0fsf cfwf/e"t dfGotfsf] j0f{g ug{ * ¿kfGt/0fsf k|sf/ / k|lqmofnfO{ lrgfpg * ¿kfGt/0f Jofs/0f / efifflzIf0fsf] ;DaGw cf}+Nofpg * ¿kfGt/0f Jofs/0fsf zlQm / ;Ldf lgwf{/0f ug{ | **PsfO kfFr M ¿kfGt/0f Jofs/0f -\*\_**  %=! ¿kfGt/0f Jofs/0fsf] k[i7e"ld / kl/ro  %=@ ¿kfGt/0f Jofs/0fsf] ljsf;qmd  %=@=! Snfl;sn l;4fGt  %=@=@ dfgs l;4fGt  %=@=# pQ/jtL{ l;4fGt  %=# ¿kfGt/0f Jofs/0fsf cfwf/e"t dfGotf  %=$ ¿kfGt/0fsf k|sf/ / k|lqmof  %=% ¿kfGt/0f Jofs/0f / efifflzIf0f  %=^ ¿kfGt/0f Jofs/0fsf pknlAw / ;Ldf |
| * sf/s Jofs/0fsf] kl/ro lbg * sf/s Jofs/0fsf k|d'v dfGotf cf}+Nofpg * sf/ssf] lgwf{/0f ug{ * kfl0flg / lkmNdf]/sf sf/sLo b[li6sf]0fsf] t'ngf ug{ * rD:sL / lkmNdf]/sf sf/sLo dfGotf pNn]v ug{ * sf/s Jofs/0fsf] eflifs ljZn]if0f k4lt cf}+Nofpg * sf/s Jofs/0fsf pknlAw / ;Ldf 7Dofpg | PsfO 5 M sf/s Jofs/0f -\*\_  ^=! sf/s Jofs/0fsf] kl/ro  ^=@ sf/s Jofs/0fsf k|d'v dfGotf  ^=# sf/ssf] lgwf{/0f ug{  ^=$ kfl0flg / lkmNdf]/sf sf/sLo b[li6sf]0fsf] t'ngf  ^=% rD:sL / lkmNdf]/sf sf/sLo dfGotf  ^=^ sf/s Jofs/0fsf] eflifs ljZn]if0f k4lt  ^=& sf/s Jofs/0f / efifflzIf0f  ^=\* sf/s Jofs/0fsf pknlAw / ;Ldf |

**$= lzIf0f ljlw M** k|To]s PsfOdf cfjZostfcg';f/ ;fwf/0f / ljlzi6 lzIf0f k|ljlw pkof]udf NofOg]5 .

**$=! ;fwf/0f lzIf0f k|ljlw M** PsfOsf] k|s[ltcg'¿k kf7\ok':ts, ;xfos k':ts, ;Gbe{ k':ts, kf7kq, tflnd / cf/]vsf cfwf/df JofVofg, k|Zgf]Q/, 5nkmn / lzIfs k|:t'tLs/0f ljlw cFuflng]5 .

**$=@ ljlzi6 lzIf0f k|ljlw M** k|To]s PsfOdf PsfOsf] k|s[ltcg'¿k u[xsfo{, ;d"xsfo{, cfjlws sfo{, uf]i7Lkq tof/ u/L k|:t'tLs/0f ug]{ ljlw pkof]u ul/g]5 .

**%= d"Nofª\sg k|lqmof**

o; kf7\of+zsf] d"Nofª\sg k|lqmof b'O{ k|s[ltsf] x'g]5 M

-!\_ cfGtl/s d"Nofª\sg

-@\_ afXo d"Nofª\sg

**-!\_ cfGtl/s d"Nofª\sg**

cfGtl/s d"Nofª\sgsf nflu $)Ü cª\sef/ 5'6\ofOPsf] 5 . pQm d"Nofª\sgsf nflu lglb{i6 k|fof]lus sfo{cGtu{t /xL ljifo lzIfsn] lgDg cfwf/x¿ cjnDag ug{'kg{] 5 M

-s\_ pkl:ylt – % cª\s

-v\_ lzIf0f l;sfOdf ;xeflutf – % cª\s

-u\_ klxnf] cfGtl/s k/LIff – !) cª\s

-3\_ bf];|f] cfGtl/s k/LIff – !) cª\s

-ª\_ t];|f] cfGtl/s k/LIff – !) cª\s

klxnf] cfGtl/s k/LIffsf nflu ljifo lzIfsn] lgDglnlvt sfo{x¿ ug{ nufpg] 5g\M

cWoogkq n]vg, k':ts ;dLIff, n]v k'g/fjnf]sg, s'g} ljifo zLif{s s]lGb|t cWoog kq tof/L, cfGtl/s k/LIff, PsfO k/LIff, 1fg÷k|ltef k/LIf0f cflb .

bf];|f] cfGtl/s k/LIffsf nflu ljifo lzIfsn] lgDglnlvt sfo{x¿ ug{ nufpg] 5g\ M

kl/of]hgf sfo{, cj:yf÷36gf cWoog, uf]i7L, If]qsfo{, JolQmut jf ;d"xut k|ltj]bg n]vg, låtLo ;|f]t ;fdu|Ldf cfwfl/t cWoogkq n]vg, k"jf{Woog, k'g/fjnf]sg / clen]vLs/0f cflb .

t];|f] cfGtl/s k/LIffsf nflu cfGtl/s ;'wf/ k/LIffsf ?kdf ^) k"0ff{ª\ssf] k/LIff lnO{ To;nfO{ !) cª\sdf ?kfGt/ ul/g]5 .

pko{'Qm klxnf], bf];|f], t];|f] cfGtl/s k/LIff dWo] b'O{j6f lnlvt k/LIffdf ljBfyL{x? clgjfo{ ?kdf ;dfj]z x'g'kg{] 5 .

**@= afXo d"Nofª\sg**

afXo d"Nofª\sgsf nflu ^)Ü cª\sef/ 5'6\ofOPsf] 5 . pQm d"Nofª\sgsf nflu lq=lj= lzIffzf:q ;ª\sfo, 8Lgsf] sfof{noåf/f ;qfGtdf k/LIff lnOg] 5 . ;f] k/LIffdf ;f]lwg] k|Zgsf] k|s[lt, 9fFrf / To;sf] cª\sef/ lgDgfg';f/ x'g] 5 M

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **k|Zgsf] k|s[lt** | **;f]lwg] k|Zg ;ª\Vof** | **pQ/ lbg'kg{] k|Zg ;ª\Vof** | **k|ltk|Zg 5'6\ofOPsf] cª\s** | **k"0ff{ª\s** |
| ;d"x …sÚ M ax'j}slNks k|Zg | 10 | 10 | 1 | 10 |
| ;d"x …vÚ M 5f]6f] pQ/ cfpg] k|Zg\* | 6 | 6 | 5 | 30 |
| ;d"x …uÚ M nfdf] pQ/ cfpg] k|Zg | 2 | 2 | 10 | 20 |

*\* ;k|;ª\u JofVof ug{ lbOg] k|Zgdf ;|f]t ;Gbe{ ;dfj]z ul/g] 5 .*

**pkl:ylt / sIff ;xeflutf**

-s\_ ;]d]:6/ k|0ffnLdf \*) k|ltzt pkl:ylt clgjfo{ x'g]5 . () k|ltzt;Dd pkl:ylt x'g] ljBfyL{nfO{ $ cª\s / () eGbf dfly pkl:yt x'g] ljBfyL{nfO{ % cª\s k|bfg ul/g]5 .

-v\_ sIff ;xeflutfsf] % cª\s dWo] ;DalGwt ljifo lzIfsn] ljBfyL{sf]]] sIff sfo{snfksf] d"Nofª\sg u/L cª\s k|bfg ug{]5g\ .

^= **kf7\ok':ts M**

* Gof}kfg], 6ª\sk|;fb, e08f/L, kf/;dl0f / Gof}kfg], bLks k|;fb -@)^\*\_, efifflj1fgsf k|d'v l;4fGt, sf7df8f}+ M ljBfyL{ k':ts e08f/ .
* aGw', r"8fdl0f -@)^$\_, efifflj1fgsf ;Dk|bfo, sf7df8f}+ M Pstf a'S; .

**;xfos ;fdu|L**

* clwsf/L, x]dfË/fh -@)%)\_, g]kfnL sf/s Jofs/0f, sf7df8f}+ M g]=/f=k|=k|= .
* uf}td, b]jLk|;fb -@)%#\_, sf/s, Jos/0f / g]kfnL efiffsf sf/sx¿, sf7df8f}+ M n]vs :jod\ .
* uf}td, b]jLk|;fb -@)%&\_, g]kfnL ¿kfGt/0f Jofs/0f, sf7df8f}+ M n]vs :jod\ .
* uf}td, b]jLk|;fb -@)%&\_, dfgs l;4fGt, lj:tfl/t dfgs l;4fGt / g]kfnL jfSo Joj:yf, sf7df8f}+ M n]vs :jod\ .
* ltjf/L, ef]nfgfy -;g\ !(\*%\_, cfw'lgs efifflj1fg, lbNnL M lnlk k|sfzg .
* Gof}kfg], 6ª\sk|;fb -@)%!\_, efifflj1fgsf] ¿k/]vf, w/fg M g]kfn a's l8kf] .
* Gof}kfg], 6ª\sk|;fb / uf}td, bLks -@)^(\_, k"jL{o eflifs lrGtg k/Dk/f, sf7df8f}+ M sGsfO{ Ph's];g klAns];g PG8 l/;r{ .
* kf]v/]n, afns[i0f ;+= -@)$)\_, kRrL; jif{sf eflifs rrf{, sf7df8f}+ M g]=/f=k|=k|= .
* a]/L, Pd -;g\ !(&&\_, Pg OG6«f]8S;g 5' l;:6]lds u|fd/, nG8g M Dofsldng .
* /]8kmf]8{, P= -;g\ !(\*\*\_, 6«fG;kmd]{;gn u|fd/, nG8g M SoflDa|h o'lgel;{6L k|]; .
* lnr, Hof]kmL -;g\ !(\*#\_, lk|lG;kn ckm k|fUDofl6S;, nG8g M nª\Dofg .
* xs, Pr=Pr= -;g\ !((%\_, lk|lG;kn ckm lx:6f]l/sn lnlª\Ujl:6S;\, Go'of]s{ M ¿6 n]/n .
* xf]/f]S;, hL= -;g\ !(\*&\_, h]g]l/l6e u|fd/, nG8g M nª\Dofg .

**kf7\of+z zLif{s M eflifs cg';Gwfg ljlw qm]=cf= M #**

**kf7\of+z ;ª\Vof M g]kf=lz= %#\* k"0ff{ª\s M**

**kf7\of+z k|s[lt M ;}4flGts pQL0ff{ª\s M**

**tx M Pd= P8= k|ltxKtf kf73G6L M**

**;]d]:6/ M t];|f] k|ltkf7 kf73G6L M**

**hDdf kf73G6L M**

**!= kf7\of+z kl/ro**

of] kf7\of+z lzIffzf:q :gftsf]Q/ -Pd= P8\_ sfo{qmdcGtu{t ;]d]:6/ k|0ffnLdf cfwfl/t g]kfnL lzIff ljifodf ljlzi6Ls/0f ug{ rfxg] ljBfyL{x¿sf nflu tof/ kfl/Psf] xf] . o; kf7\of+zdf eflifs cg';Gwfg ;Da4 ;}4flGts / Jofjxfl/s kIfsf] cWoog u/fpg] ck]Iff /flvPsf] 5 .

**@= ;fwf/0f p2]Zo**

o; kf7\of+zsf ;fwf/0f p2]Zo lgDgfg';f/ /x]sf 5g\ M

* eflifs cg';Gwfgsf] ;}4flGts kl/ro k|bfg ug{'
* eflifs cg';Gwfg;Fu ;Da4 ljljw kIf;Fu kl/lrt u/fpg'
* eflifs cg';Gwfgsf ax'kIfLo ljifoIf]qx¿ klxNofpg ;Sg] l;ksf] ljsf; ug{'
* eflifs cg';Gwfgsf ;fdfGo tyf ljlzi6 ljlwx¿sf] kl/ro lbO{ cg';Gwfgdf ltgsf] k|of]u Ifdtfsf] ljsf; ug{'
* tYo ;ª\sngsf nflu gd'gf 5gf]6, pks/0f lgdf{0f / ltgsf] dfgsLs/0f ug]{ l;k clej[l4 ug{'
* cg';Gwfgsf nflu ;fdfGotM ;fª\lVosLsf] k|of]usf] 1fg / l;ksf] ljsf; ug{'
* eflifs cg';Gwfgsf] k|of]hgsf nflu cg';Gwfg k|:tfj tyf k|ltj]bg n]vg sfo{df ;Ifd t'Nofpg' .

**#= ljlzi6 p2]Zo tyf kf7\oljifo**

|  |  |
| --- | --- |
| **ljlzi6 p2]Zo** | **kf7\oljifo** |
| * eflifs cg';Gwfgsf] kl/ro lbg * eflifs cg';Gwfgsf] :j¿k / k|sf/ k|:6\ofpg * eflifs cg';Gwfgsf] kl/efiff atfpg * eflifs cg';Gwfgsf k|of]hg / p2]Zo atfpg * eflifs cg';Gwfgsf k|sf/x? atfpg, * eflifs cg';Gwfgsf] ljz]iftfx¿ pNn]v ug{ | **PsfO Ps M eflifs cg';Gwfgsf] ;fdfGo kl/ro lbg]**  !=! eflifs cg';Gwfgsf] kl/ro  !=@ eflifs cg';Gwfgsf] :j¿k ÷ k|s[lt  !=# eflifs cg';Gwfgsf] kl/efiff  !=$ eflifs cg';Gwfgsf] k|of]hg / p2]Zo  !=% eflifs cg';Gwfgsf k|sf/x¿  !=^ eflifs cg';Gwfgsf] ljz]iftfx¿ |
| * g]kfndf efiff;DaGwL cg';Gwfgsf] l:ylt atfpg, * g]kfnL efiff cg';Gwfgsf] kl/ro * /fli6«o efiffx?;Fu ;Dj4 cg';Gwfgsf] l:ylt klxNofpg, * g]kfnL efifflzIf0f ;DaGwL cg';Gwfgsf] l:ylt klxNofpg * cg';Gw]o ;d:of klxrfgsf nflu g]kfnL efiff, /fli6«o efiff tyf efiff lzIf0f;Fu ;Da4 If]qx?sf] klxrfg * g]kfnL efiff kf7\oqmd ;DaGwL cg';Gwfgsf] l:ylt klxNofpg * g]kfnL efiffkf7\ok':ts ;DagwL cg';Gwfg;DaGwL l:ylt klxNofpg * g]kfnL efiffkf7\ok':ts ;DaGwL ljljw kIfsf] cg';Gwfg ug{ | **PsfO b'O{ M g]kfnL efiff / efiff lzIf0f;DaGwL cg';Gwfgsf] l:ylt**  @=! g]kfndf efiff;DaGwL cg';Gwfg / To;sf] l:ylt  @=!=! g]kfnL efiff cg';Gwfgsf] kl/ro  @=!=@ g]kfnL efiff;DaGwL cg';Gwfgsf] l:ylt / d'Nofª\sg  @=@ /fli6«o efiffx?;Fu ;Da4 cg';Gwfg / To;sf] l:ylt  @=# g]kfnL efifflzIf0f;DaGwL cg';Gwfg / To;sf] l:ylt  @=#=! g]kfnL efifflzIf0f;DaGwL cg';Gwfgsf] kl/ro  @=#=@ g]kfnL efifflzIf0f ;DaGwL cg';Gwfgsf] l:ylt / d"Nofª\sg  @=$ cg';Gw]o ;d:of klxrfgsf nflu g]kfnL efiff, /fli6«o efiff tyf efifflzIf0f;Fu ;Da4 If]qx¿sf] klxrfg  @=$=! g]kfnL efiff / g]kfnsf efiffx¿sf] cWoog -kl/ro, :j¿k / Jolt/]sL ljZn]if0f\_  @=$=@ g]kfnL efiff / :yfgLo e]bx¿sf] cWoog  @=$=# g]kfnsf ljleGg efiffefifLx¿df kfOg] q'l6x¿sf] klxrfg  @=% g]kfnL efiff kf7\oqmd ;DaGwL cg';Gwfg / To;sf] l:ylt  @=%=! kf7\oqmd lgdf{0fsf] ;}4flGts tyf Jofjxfl/s kIfsf] cWoog  @=%=@ txut tyf sIffut g]kfnLefiff kf7\oqmdsf] kl/ro, l:ylt / d"Nofª\sg  @=%=# txut tyf sIffut efiff kf7\oqmdsf] t'ngfTds cWoog  @=^ g]kfnL efiff kf7\ok':ts;DaGwL cg';Gwfg / To;sf] l:ylt  @=^=! sIffut tyf txut g]kfnL efiff kf7\ok':tssf] ljljw kIfx?sf] cWoogM   * afXo / cfGtl/s kIf * k7gLotf * af]wuDotf * kf7\oqmd cg'?ktf * gd'gf cEof;   @=^=@ zAbe08f/sf] cWoog  @=^=# pd]/ ;d"x tyf txut ¿kdf cfwf/e"t zAbe08f/sf] lgwf{/0f  @=^=$ Jofs/0f tyf ;flxTo lzIf0fsf] cWoog  @=^=% eflifs Ifdtf  @=^=^ eflifs pknlAw tyf d"Nofª\sg  @=^=& ;d:of klxrfgsf nflu ;xof]uL ;fdu|L  @=^=\* lzIf0f ljlw / lqmofsnfk  @=^=( dft[efiffsf kf7\ok':ts tyf kf7\o;fdu|Lsf] cWoog |
| * cg';Gwfg ljlwx¿sf] ;}4flGts kl/ro lbO{ cg';Gwfg sfo{df pkof]u ug{ * j0f{gfTds ljlwsf] kl/ro lbO{ To;df cfwfl/t cg';Gwfg sfo{ ug{ * ;j]{If0f ljlw / If]qLo cWoog ljlwsf] kl/ro, ltgsf k|sf/, u'0f ÷ ljz]iftf / r/0f atfO cg';Gwfg sfo{ ug{ * efiff k|of]uzfnf, t'ngfTds / lqmofTds cg';Gwfgsf] kl/ro, ljz]iftf / r/0f klxrfg u/L cg';Gwfgdf pkof]u ug{ . | **PsfO ltg M eflifs cg';Gwfgsf ;fdfGo ljlwx¿**  #=! j0f{gfTds ljlw  #=!=! kl/ro  #=!=@ ljz]iftf  #=!=# r/0f / k|lqmof  #=@ ;j]{If0f ljlw  #=@=! kl/ro  #=@=@ k|sf/  #=@=# ljz]iftf  #=@=$ r/0f / k|lqmof  #=@=% ;j]{If0f ljlwsf ;jn / b'j{n kIfx¿  #=# If]qLo cWoog ljlw  #=#=! kl/ro  #=#=@ k|sf/  #=#=# ljz]iftf  #=#=$ r/0f / k|lqmof  #=#=% If]qLo cWoog ljlwsf ;jn / b'j{n kIfx¿  #=$ k|of]ufTds ljlw  #=$=! kl/ro  #=$=@ k|sf/  #=$=# ljz]iftf  #=$=$ r/0f / k|lqmof  #=% efiff k|of]uzfnf ljlw  #=%=! kl/ro  #=%=@ r/0f / k|lqmof  #=%=# ljz]iftf  #=^ t'ngfTds ljlw  #=^=! kl/ro  #=^=@ r/0f  #=^=# ljz]iftf  #=& lqmofTds cg';Gwfg ljlw  #=&=! kl/ro  #=&=@ r/0f  #=&=# ljz]iftf |
| * eflifs cg';Gwfgdf k|o'Qm ljlwx¿sf] ;}4flGts kl/ro lbO{ pkof]u ug{ * cGtM k|]IffTds ljlwsf] kl/ro lbO{ :j¿k atfpg * hflteflifs cWoog ljlwsf] kl/ro lbO{ To;sf] pkof]u ug{ * ;d:of cWoog ljlwsf] dfWodaf6 ;d:of klxrfg u/L cg';Gwfg ug{ * 36gfj[Q clen]vsf cfwf/df cg';Gwfg ug{ | **PsfO rf/ M eflifs cg';Gwfgsf ljz]if ljlwx¿**  $=! cGtM k|]IffTds ljlw  $=!=! ;xrfo{  $=!=@ jfSo ;d:of  $=!=# b}lgsL cWoog  $=!=$ kZrfjnf]sg  $=!=% ;:j/ ;f]r  $=@= hflteflifs cWoog ljlw  $=@=! hflteflifs cWoog ljlwsf] kl/ro  $=@=@ hflteflifs cWoog ljlwsf ljz]iftfx¿  $=@=# hflteflifs cWoogsf k|o'Qm cWoog ljlw ÷ k4ltx¿  • j0f{gfTds  • P]ltxfl;s  • t'ngfTds  $=@=$ ljBfnosf sIffdf hflteflifs cj:yf  $=# ;d:of cWoog -j}olSts tyf ;+:yf cflb\_ ljlw  $=#=! ljz]iftf  $=#=@ r/0f tyf k|lqmof |
| * cg';Gwfgdf tYofª\ssf] dxŒj atfpg * tYofª\s ;ª\sngdf ;|f]tx¿sf] klxrfg ug{ * hg;ª\Vof / gd'gf 5gf]6sf] kl/ro lbO{ ltgsf] cfjZostf atfpg * gd'gf 5gf]6sf] k|sf/ atfpg * kl/df0ffTds tyf u'0ffTds cg';Gwfgsf ;Gbe{df gd'gf * tYofª\s ;ª\sngsf nflu k|ZgfjnL, cGtjf{tf{, dtfjnL, ?h';"rLsf] kl/ro lbO{ ltgsf] 9fFrf tof/ ug{ * tYofª\s ;ª\sngsf pks/0f÷;fwgx?sf] kl/ro lbg, * tYofª\s ;ª\sngdf cfjZos pks/0fsf] dfgsLs/0f ug{ . | **PsfO kfFr M tYofª\s ;ª\sng / pks/0f**  %=! cg';Gwfg tYo ÷ tYofª\s  %=@ tYofª\s ;ª\sngsf ;|f]tx¿  %=@=! k|fylds ;|f]t  %=!=@ låtLo ;|f]t  %=# hg;ª\Vof tyf gd'gf 5gf]6  %=#=! hg;ª\Vof  %=#=@ gd'gf 5gf]6  %=#=# gd'gf 5gf]6sf] cfjZostf  %=#=$ gd'gf 5gf]6, cfsf/  %=#=% u'0ffTds cg';Gwfgdf gd'gf 5gf]6  %=#=^ kl/df0ffTds cg';Gwfgdf gd'gf 5gf]6  %=#=& gd'gf 5gf]6sf] k|sf/  • ;DefjgfTds gd'gf 5gf]6 / o;sf k|sf/x¿  • c;DefjgfTds gd'gf 5gf]6 / o;sf k|sf/x?  %=#=& gd'gf 5gf]6sf] ;Ldf  %=$ tYofª\s ;ª\sngsf pks/0f÷;fwg  %=$=! k|ZgfjnL  • kl/ro  • k|sf/  • k|of]u  %=$=@ cGtjf{tf{  • kl/ro  • k|sf/  • k|of]u  %=$=# dtfjnL  • kl/ro  • k|of]u  %=$=$ ?h';"rL  • kl/ro  • k|of]u  %=$=% cjnf]sg  • kl/ro  • k|sf/  %=$=^ 36gfj[Q clen]v  • kl/ro  • k|of]u  %=$=& /]l6ª :s]n  • kl/ro  • k|of]u  %=$=\* pks/0fsf] dfgsLs/0f |
| * eflifs cg';Gwfgdf ;fª\lVosLsf] kl/ro lbg * tYo÷tYofª\ssf] k|:t'tLs/0fdf tflnsLs/0fsf] kl/ro lbO{ k|of]u ug{ * tYofª\ssf] n]vflrqfTds k|:t'tLs/0fdf cf/]v, cfn]vsf] k|of]u ug{ * rnsf] kl/ro lbO{ To;sf] k|sf/ atfpg * tYo÷tYofª\ssf] ljZn]if0fsf nflu cfjZostfcg';f/ k|ltzt, cf};t, dWodfg / 6L–6]:6sf] pkof]u u/L tYofª\s ljZn]if0f ug{ | PsfO 5 M eflifs cg';Gwfgdf ;fª\lVosLsf] k|of]u  ^=! ;fª\lVosLsf] kl/ro  ^=@ ;fª\lVosLsf sfo{x¿  ^=# eflifs cg';Gwfgdf ;fª\lVosLsf] dxŒj  ^=$ tYo÷tYofª\ssf] k|:t'tLs/0f  ^=$=! tflnsLs/0f  • kl/ro  • ljz]iftf  • k|of]u  ^=$=@ tYofª\ssf] n]vflrqfTds k|:t'tLs/0f  • cf/]v  • cfn]v  • cf/]v / cfn]vsf] t'ngf  ^=% rn  ^=%=! kl/ro  ^=%=@ k|sf/  ^=^ k|ltzt u0fgf  ^=& cf};t lgwf{/0f  ^=\* dWodfg  ^=( 6L–6]:6 |
| * cg';Gwfg÷zf]w k|:tfjsf] kl/ro lbg * cg';Gwfg k|:tfjsf] cfjZostf atfpg * cg';Gwfg÷zf]w k|:tfjsf 9fFrf tyf cª\ux¿sf] kl/ro lbg * gd'gf cg';Gwfg k|:tfj tof/ kfg{ | PsfO ;ft M zf]w k|:tfjsf 9fFrf tyf cª\ux¿  &=! cg';Gwfg k|:tfj ÷ zf]wk|:tfj  &=!=! z}lIfs cg';Gwfg sfo{sf] df}lns p2]Zo  &=!=@ zf]w ;d:of ÷ zf]w zLif{s 5gf]6sf] ;|f]t  &=!=# zf]w ;d:of / zf]w zLif{ssf] 5gf]6  &=@ zf]w k|:tfjsf cª\ux¿  zf]w zLif{s, k|of]hg, ;d:of, p2]Zo, kl/sNkgf, k"j{sfo{sf] ;dLIff, cg';Gwfg ljlw, cWoogsf] ;Ldf, cWoogsf] k|of]u, ;Gbe{s[lt ;"rL |
| * cg';Gwfg k|ltj]bgsf cª\ux¿sf] kl/ro lbO{ :j¿k atfpg * cg';Gwfgsf] cflbefu, dWoefu / cGToefudf cGtlg{lxt s'/fx¿ klxrfg u/L cg';Gwfg k|ltj]bg tof/ kfg{ | PsfO cf7 M cg';Gwfg k|ltj]bg M :j¿k ÷ cª\ux¿  \*=! cg';Gwfg ÷ zf]w k|ltj]bg n]vgsf r/0fx¿ ÷ k|lqmofx¿  \*=@ cg';Gwfg ÷ zf]w k|ltj]bgsf cª\ux¿  \*=@=! cflbefu ÷ k"j{efu  • d'vk[i7  • zf]w lgb]{zssf] l;kmfl/;  • :jLs[ltkq ÷ cg'df]bgkq  • s[Q1tf1fkg  • zf]w;f/  • ljifo;"rL  • tflnsf, lrq, gS;f;"rL  • lrXg ;"rL  • ;ª\lIfKt ¿ksf] ;"rL  • kfl/eflifs tyf k|fljlws kbfjnL  \*=@=@ dWoefu ÷ d"nefu  • cWofo / zLif{ssf] 9fFrf  • cg'R5]b ljefhg / ljGof;  • p4/0f  • ;Gbef{ª\sg ÷ ;Gbe{ ;ª\s]t  – n]vs k[i7 k4ltdf ;Gbe{ ;ª\s]t  – n]vs ldlt k4ltdf ;Gbe{ ;ª\s]t  • kfbl6Kk0fL  – kl/ro  – k|sf/  – k|of]u  • ;Gbe{;"rL  – ;Gbe{;"rLdf ;dfj]z ug'{kg]{ s'/fx¿  – ;Gbe{;"rLsf] cg'qmddf Wofg lbg'kg]{ s'/fx¿  – ;Gbef{ª\sg / ;Gbe{;"rLdf km/s  – ;Gbe{;"rLsf tof/ kfg]{ d'Vo k4ltx¿ M PlkP k4lt, PdPnP k4lt  \*=@=# cGTo efu ÷ pQ/ efu  • kl/lzi6  • cg'qmdl0fsf  • kfl/eflifs tyf cGo zAbfjnL  • JolQmj[Q |
| * cg';Gwfgdf k|o'Qm efiff k|of]u;DaGwL 1fg / bIftf k|fKt ug{ * k|ltj]bg 6ª\sgdf Wofg lbg'kg]{ lgodx¿sf] kfngf ub}{ 6ª\lst k|ltj]bg tof/ kfg{ * pko'Qm tyf lgwf{l/t k|fjwfgsf cfwf/df cfj/0f k[i7 / uftfaGbL lgdf{0f ug{ . | PsfO gf} M cg';Gwfgdf k|o'Qm efiff / k|ltj]bg 6ª\sg  (=! cg';Gwfgdf k|o'Qm efiff  (=!=! jfSoljG;f;  (=!=@ cfb/fyL{sf] k|of]u  (=!=# jfSosf] k|of]u  ] (=!=$ j0f{ljGof;  (=!=% ;ª\lIfKt ¿k  (=!=^ ;Dkfbg, kl/dfh{g / ;+zf]wg  (=@ k|ltj]bg 6ª\sg / tof/L  (=@=! zAb ljefhg  (=@=@ cGt/fng  (=@=# k[i7fª\sg  (=@=$ 6ª\lst k|ltj]bg ;+zf]wg  (=@=^ uftfaGbL |

**$= lzIf0f k|ljlw**

o; kf7\of+zsf] cWoog cWofkgsf qmddf k|of]u x'g] lzIf0f k|ljlwnfO{ b'O{ efudf juL{s/0f ul/Psf] 5 . clwsf+z kf7\oj:t'x¿ cWofkg ug{ k|of]u ul/g] lzIf0f k|ljlw ;fwf/0f lzIf0f k|ljlwdf /flvPsf 5g\ eg] s'g} lglZrt PsfOcGtu{tsf kf7\oj:t' cWofkg ug{ k|of]u ul/g] lzIf0f k|ljlwnfO{ ljlzi6 lzIf0f k|ljlw cGtu{t /flvPsf] 5 .

**$=! ;fwf/0f lzIf0fk|ljlw**

k|To]s PsfOdf cfjZostfcg';f/ JofVofg, k|Zgf]Q/, 5nkmn tyf k|:t'tLs/0f ljlwsf] pkof]u ul/g] 5 . PsfOsf] k|s[ltcg'¿k kf7\ok':ts, ;xfos k':ts, ;Gbe{ k':ts, kf7kq, tflnsf / cf/]vx¿sf] pkof]u ul/g] 5 .

**$=@ ljlzi6 lzIf0fk|ljlw**

* PsfO Psdf ;}4flGts ;fdu|Lsf] ljZn]if0fsf nflu JofVofg / 5nkmn ljlwsf] pkof]u ul/g] 5 .
* PsfO b'O{df JofVofg, 5nkmn / k|:t'tLs/0f ljlwsf] pkof]u ul/g] 5 .
* PsfO ltgdf JofVofg, 5nkmn / k|:t'tLs/0f ljlw cjnDag ul/g] 5 ;fy} cfjZostf cg';f/ cf/]v tyf tflnsfsf] pkof]u ul/g] 5 .
* PsfO rf/df JolQmut / ;fd"lxs ¿kdf sfo{kq n]vg / k|:t'lt ug{ nufOg] 5 .

**l;kmfl/; ul/Psf kf7\ok':ts tyf ;Gbe{ ;fdu|L**

**kf7\ok':ts**

* aGw', r"8fdl0f -@)^%\_, cg';Gwfg tyf k|ltj]bg n]vf, sf7df8f}+ M /Tgk':ts e08f/ .
* e08f/L, kf/;dl0f / /fdgfy cf]emf -@)^\*\_, eflifs cg';Gwfg ljlw, sf7df8f}+ M lkgfsn klAns];g .

**;xfos ;fdu|L**

* kf}8]n, /fh]Gb| k|;fb, l;Pg kl08t -@)^\*\_, cfw'lgs cg';Gwfg k4lt, sf7df8f}+ M lxdlzv/ k|sfzg .
* kf}8]n, /fh]Gb|k|;fb -@)^\*\_, g]kfnL lzIff M ;d;fdlos ;Gbe{, sf7df8f}+ M lxdlzv/ k|sfzg .
* e6\6/fO{, /fdk|;fb -@)^%\_, eflifs cg';Gwfg ljlw, sf7df8f}+ M z'esfdgf k|sfzg .
* e08f/L / cGo -@)^\*\_, eflifs cg';Gwfg ljlw, sf7df8f}+ M lkgfsn klAns];g .

**Course Title: Project Meet in Physical Education and Games**

Course No.: P.Ed. 535 Nature of course: Practical

Level: M.Ed. Credit hour: 3

Semester: 3rd Teaching hour: 96

**1. Course Description:**

This course is designed to provide students with coaching and officiating experiences in athletics and selected specialised game. It also intends to provide practical knowledge of organising conference in physical education and games.

**2. General Objectives**

* Provide students with practical experiences in coaching and officiating athletics and games.
* Make students able to conduct conference on physical education and games.

**3. Specific Objectives and Contents**

|  |  |
| --- | --- |
| **Specific Objectives** | **Contents** |
| * + Demonstrate the advanced skills during coaching in their respective games of specialisation. | **Unit I A one week coaching camp in games (15)**  1.1 Preparation of time table for one week.  1.2 Contact school students to run the coaching camp.  1.3 Conduct the coaching camp. |
| * + Discuss the system of play and modern strategies of the specialised games.   + Prepare coaching programmes for different skills of their specialised games. | **Unit II Teaching and coaching experiences in students games and sports (45)**   * 1. Preparation of schedule in any one game and any three events of athletics (18 lessons x 2)   2. Selection of schools for coaching   3. Conduct coaching |
| * + Conduct tournaments and athletic meet   + Officiate the specialised game and different athletic events. | **Unit III Project Meet (9)**  3.1 Preliminary preparation  3.2 Announcement of meet and tournament  3.3 Conducting meet and tournament followed by opening and closing ceremony |
| * + Prepare detailed progress report in their specialised games. | **Unit IV Preparation of the project meet report (9)**  4.1 Introduction /preliminary works  4.2 Objectives  4.3 Participating teams and schedule  4.4 Programme and results  4.5 Conclusions and recommendation  4.6 References |
| * + Prepare a conference on current issues of physical education and games.   + Conduct the conference on current issues of physical education and games.   + Prepare the report of the conference. | **Unit V Conference on physical Education and Games (18)**  5.1 Identification of the theme of the conference  5.2 Preparation of papers for the conference  5.3 Announcement of the conference (Venue, date and time)  5.4 Conduct conference (Management of moderator and presenter)  5.5 Preparation of the conference report |

*The figures in the parentheses indicate the approximate periods for the respective units.*

**4. Instruction Techniques**

The instructional techniques are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to the specific units.

* 1. **General Instructional Techniques**

Lecture, Group Work, Project work, Demonstration, discussion and presentation

* 1. **Specific Instruction Techniques**

|  |  |
| --- | --- |
| **Unit** | **Activity of Instructional Techniques** |
| I | Students will be assigned to conduct a one week intensive coaching in their respective games. They will also be asked to prepare a schedule for the coaching. Their coaching activities will be closely monitored by the subject teacher. |
| II | All the students will prepare coaching schedule for 18 lessons including a game and three athletic events. They will be asked to select schools for coaching and they will be sent to conduct the coaching programme according to the schedule. All the students will coach each lesson for two days so that the total programme will be six weeks. |
| III | Students will be assigned to conduct tournaments on the events which they have coached in the schools. They have to officiate the games and athletic events with different roles. |
| IV | Students have to prepare a report on the intensive coaching, six week's coaching and project meet under the close supervision of the subject teacher and the report will be submitted for the final examination. |
| V | Students will be divided into different groups according to the themes identified in the discussion. They will be asked to prepare papers on their respective theme to present in the conference. They can also use resource person for the paper writing according to the nature of the theme. Finally they have to conduct the conference on their respective theme and prepare a report and submit for the final evaluation. |

**5. Evaluation Techniques**

This paper is totally a practical one. Hence, this part will be assessed through formative assessment (Internal). However the external examination will be conducted after submission of the project meet and conference reports. All the marking is based on the following:

**5.1 Intensive Coaching**

Students should coach in particular game of their choice. Not more than two students are kept in a game.

**5.2 Involvement in Coaching and Project Meet**

Students will be divided into four groups for the particular game of their capabilities and interest. They should be given any three events in athletics (run + jump + throw) and one game. They should also prepare the schedule for 18 sessions. Four groups should be sent to a school to conduct coaching on the particular events. Each group will coach a team of 12 girls of a house of the school. After six weeks of coaching, they will organise a house wise tournament.

**5.3 Conduct Conference on Physical Education**

Students will organise a conference on physical education. An External examiner will be invited to evaluate the activities of the conference. Marks will be allotted in the following way:

|  |  |  |  |
| --- | --- | --- | --- |
| **SN** | **Activities** | **Internal** | **External** |
| 1 | Attendance | 10 |  |
| 2 | Demonstration skills | 5 |  |
| 3 | Practice period | 5 |  |
| 4 | Participation in preparing schedules | 5 |  |
| 5 | Role in team management while conducting tournament and meet | 5 |  |
| 6 | Role as a referee/umpire/Judge in tournament | 10 |  |
| 7 | Report on project meets |  | 20 |
| 8 | Conducting conference |  | 20 |
| 9 | Viva voce |  | 20 |
|  | **Total** | **40** | **60** |

**6. Recommended books and References:**

Anand, R. L. (1986). ***Playing field manual***. Patiala: NIS Publication. (Unit III)

Ballou, R. B. ((1988). *Teaching badminton*. Delhi: Surjeet Publication. (Unit I and III)

Bucher. C.A. (1979). ***Administration of physical education and athletics programme***. St. Louis: The C.V. Mosby Company. (Unit III and V)

Goel, R. G. and Goel, Veena (1990). ***Encyclopaedia of sports and games***. New Delhi: Vikas Publishing House Pvt. Ltd. (Unit III)

Jha, Ashok Kumar (2003). ***Lay-out of games and sports***. Kathmandu: Ratna Pustak Bhandar. (Unit III)

Kho–Kho**.** Jalandhar: AP Publishers. (Unit I - III)

P. and J. W. Refrik. ***Intramural recreational sports: programming and administration*.** New York: John wisely and Sons. (Unit III)

Parker, D.(Nd). *Take up table tennis*. New Delhi: Learners Press. (Unit I - III)

Parker. D. & David, H. (1996). *Play the game table tennis*. London: Bland ford. (Unit I - III)

Rao, E. P. (1994). *Modern coaching in Kabaddi***.** Delhi: DVS Publication. (Unit I - III)

Voltmer, Edward F. and Others. (1979). ***The organisation and administration of physical education***. New Jersey: Prentice Hall. Inc**.** (Unit III and V)

Course title: Cricket

Course No.: P.Ed. 536 Nature of course: Practical

Level: M.Ed. Credit hour: 3

Semester: Third Teaching hour: 96

**1. Course Description**

This course is designed to develop understanding of developmental history, basic skills and rules and regulations of cricket among the students. is course aims at developing and appling basic skills and strategies of cricket among .............. Besides, the students will also be provided with the experiences of officiating criket.

**2. General Objectives**

The general objectives of this course are as follows:

* To acquaint the students with the historical development of cricket in Nepal and world.
* To acquaint students with basic rules of cricket.
* To enable students in demonstrating basic skills of cricket.
* To enable the students in organizing coaching programs and officiating cricket match.

**3. Specific Objectives and Contents**

|  |  |
| --- | --- |
| **Specific Objectives** | **Contents** |
| * Introduce cricket * State short history of cricket in Nepal and world * Discuss the role of CAN in developing cricket in Nepal * Identify the formats of international cricket. | **Unit I : Introduction to Cricket (6)**   * 1. Concept of cricket   1.2 History of cricket in Nepal and world  1.3 Role of CAN in developing cricket in Nepal  1.4 Formats of international cricket |
| * Explain the ground measurement of cricket * State the requirements of cricket * Identify the rules and laws of cricket. | **Unit II. Rules and Regulation of Cricket (6)**  2.1 Ground measurement  2.2 Requirements of cricket  2.3 Rules of cricket  2.4 Laws of cricket |
| * Demonstrate basic skills of batting * Use different techniques of bowling * Apply various fielding skills in cricket. | **Unit III. Basic Skills of Cricket (36)**  3.1 Batting  3.1.1 Grip  3.1.2 Stance  3.1.3 Batting positions  3.1.4 Blocking the ball  3.1.5 Batting styles  3.1.6 Shots  3.1.7 Running with bat  3.2 Bowling  3.2.1 Bowling actions  3.2.2 Bowling types  3.3 Fielding  3.3.1 Catching  3.3.2 Chasing and throwing  3.3.3 Wicket keeping  3.3.4 Fielding positions |
| * Describe factors to be considered before, during and after training * Organize selected coaching programs and sessions for various skills of cricket. | **Unit IV. Coaching Strategies of Cricket (36)**  4.1 Factors to be considered before, during and after cricket training  4.2 Warm up drills – Running, stretching, throwing, catching  4.3 Batting training – Grip, stance, bat taps, relay running with bat, blocking, strikes  4.4 Bowling training – Gripping the ball, run-ups, releasing the ball with action, target bowling as per types (spin, swing and fast)  4.5 Catching training – Catching positioning, close catching, high catching, catching relays  4.6 Chasing and throwing training – Chasing a running ball, chasing and pick up, throwing ball  4.7 Wicket keeping training – Set, move, dive, stumping, catch, throw  4.8 Recovery and session reviews – Cool down exercises, dodge ball, mini cricket |
| * Explain the role of different officials in cricket * Lay out ground marking for cricket * Identify the signals used in cricket by umpires * Organize and officiate cricket match. | **Unit V. Officiating Cricket (12)**  5.1 Officials required in cricket  5.2 Ground marking  5.3 Umpiring signals  5.4 Organizing cricket match |

**4. General Instructional Techniques**

Since the course is practical in nature, the group work, demonstration and drills should be the appropriate techniques for this course.

* 1. **Specific Instructional Techniques**

|  |  |
| --- | --- |
| **Unit** | **Suggested Instructional Techniques** |
| I | * The students will be assigned to collect information from CAN to identify the roles of CAN in developing cricket in Nepal. |
| II | * The teacher will explain the ICC rules and regulation of cricket and show the requirements of the game. |
| III | * The teacher will explain and demonstrate basic skills of batting, bowling and fielding. * The students will observe and then participate in the activities with the teacher. |
| IV | * The teacher will plan various coaching strategies to coach different skills and apply in the class. * The students will first develop the selected skills of cricket and organize coaching program of specific skills to each other. |
| V | * The students will organize and officiate cricket match and the teacher will provide feedback to the students. |

**Note: the figure within the parentheses indicate the approximate teaching hours allocated to respective unit**

**5. Evaluation**

**5.1 Internal evaluation-40%**

Internal evaluation will be conducted by subject teacher based on the following activities:

|  |  |  |
| --- | --- | --- |
| **SN** | **Activities** | **Points** |
| 1 | Attendance | 5 |
| 2 | Participation in learning activities | 5 |
| 3 | Performance | 10 |
| 4 | Match organization | 10 |
| 5 | Notebook keeping | 10 |
| **Total** | | **40** |

**5.2 External Examination (Final Examination)-60%**

Examination Division of Dean’s office will appoint an external examiner to conduct practical examination at the end of the semester.

|  |  |  |
| --- | --- | --- |
| **SN** | **Evaluation activities** | **Points** |
| 1 | Performance in particular game (skills demonstration) | 30 |
| 2 | Report of match organization and notebook keeping | 10 |
| 3 | Oral test | 20 |
| **Total** | | 60 |

**5. Recommended Books and References**

Dev, K. (1987). *Cricket my style*. New Delhi: Allied Publisher. (Unit I, III and IV)

Goel, R. G. & Goel, V. (1990). *Encyclopedia of sports and games*. New Delhi: Vikas Publishing House Pvt. Ltd. (Unit I, II and V)

Singh, B. (1981). *Rules and skills of games and sports*. New Delhi: Pankaj Publication. (Unit II and V)

*The Law of Cricket* (1992). London: MCC. (Unit II and V)

YMCA (1981). *Rules of games and sports*. New Delhi: YMCA Pub. House. (Unit II and V)

## [*http://www.espncricinfo.com/magazine/content/story/585639.html*](http://www.espncricinfo.com/magazine/content/story/585639.html)

## [*http://www.cricketweb.net/books/top-12-cricket-books/*](http://www.cricketweb.net/books/top-12-cricket-books/)

## [*http://www.bookdepository.com/category/3027/Cricket*](http://www.bookdepository.com/category/3027/Cricket)

Course title**: Kinesiology and Biomechanics**

Course No. : P. Ed. 537 Nature of course: Theory

Level: M.Ed. Credit Hour: 3

Semester: Third Teaching Hour: 48

1. **Course Description**

This course is designed to enable the students to gain advanced knowledge on principles and skills related to human movement based on biomechanics and kinesiology. It is also assumed that the course enables the students to apply the knowledge in teaching physical education and games based on different movement patterns.

1. **General Objectives**

The general objectives of this course are as follows:

* To make the students in understanding the general concept and historical development of kinesiology in sports.
* To enable the students to differentiate and use kinesiology in physical education and sports.
* To familiarise the students with the microscopic structure of human skeletal muscles.
* To provide the students with the knowledge of classifying and using bones and joints properly during the movement activities.
* To enable the students to differentiate body planes and axis while doing physical activities.
* To acquaint the students with energy release and utilisation process of human muscles
* To make the students to apply mechanical principles (e.g. motion, force, equilibrium, gravity) in games and sports.
* To enhance the knowledge of biomechanical and kinanthropometrical parameters in motor skills of daily living (e.g. walking, sitting, lifting, climbing, carrying).

1. **Specific Objectives and Contents**

|  |  |
| --- | --- |
| **Specific Objectives** | **Contents** |
| * Explain the concept and historical perspective of kinesiology * Discuss the types and importance of kinesiology in physical education and sports. * Illustrate the types and role of muscles in human movement. | **Unit I: Introduction to Kinesiology (6)**   * 1. Concept of kinesiology   2. Historical perspective of Kinesiology   3. Types of Kinesiology   4. Importance and use of kinesiology in physical education and sports. |
| * Identify the microscopic structure of skeletal muscles. * Explain structural classification of bones * Elaborate types and structure of joints. * Apply kinanthropometric measurement in sports. | **Unit II: Kinesiology of human body (12)**   * 1. Types and role of muscles   2. Microscopic structure and physiology of skeletal muscles   3. Structural classification of bones   4. Types and structure of joints   5. Kinanthropometric measurement and use of body parts |
| * Discuss the concept and types of body planes and axis. * Illustrate concept, types and advantage of leaver in human movement. * Analyse energy release process and its utilisation of human muscles. | **Unit III: Application of Kinesiology (9)**   * 1. Concept of body planes and axis   2. Types of planes and axis   3. Concept and types of body levers   4. Mechanical advantage of levers in human body   5. Energy release and utilisation process of human muscles |
| * Describe concept and importance of biomechanics in sports * Illustrate meaning and types of motion * Apply Newton's laws of motion in sports * Analyse types of force application in sports | **Unit IV: Biomechanics (9)**   * 1. Concept and importance of biomechanics in sports.   2. Meaning and types of motion   3. Newton's laws of motion and its application in sports.   4. Types and application of force in sports   5. Gravity force: line of gravity, centre of gravity |
| * Discuss the importance and application of equilibrium in sport. * Explain friction, resistance and their types applicable in sports * Show the need of good posture on sports * Apply biomechanics and kinesiology in motor skills of your daily life | **Unit V: Application of Biomechanics (9)**   * 1. Equilibrium: its types and principle.   2. Friction and resistance in sports   3. Types and use of resistance in sports   4. Need of measures to manage postural defects   5. Application of biomechanics and kinesiology in motor skills of daily living (e.g. walking, sitting, climbing, lifting, carrying etc) |

1. **Instructional Techniques**

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of proposed specific instructional techniques applicable to specific units or sub units or content.

* 1. **General Instructional Techniques**

Lectures, Discussions, Presentations, Guest lectures, Project works, Computing practice, Assignment, Group work, participatory approach, Lecture of resource person, Report writing, Presentation

* 1. **Specific Instructional Techniques**

|  |  |
| --- | --- |
| **Unit** | **Activity and Instructional Techniques** |
| I | Review of books, report, papers and discuss on them |
| II | Consultation of reference books, group works on given topics discussion and presentation. |
| III | Experts lecture on the concern topics along with group discussion and participation |
| IV | Individual assignment on given topics, report writing and presentation with commentators' notes. |
| V | Guess lectures on some specific topic along with their specific application in our daily life activities.  Review of reference materials by all participants. |

**5. Evaluation**

* 1. **Internal evaluation 40%**

Internal evaluation will be conducted by subject teachers based on following activities:

|  |  |  |
| --- | --- | --- |
| **SN** | **Particular** | **Points** |
| 1 | Attendance | 5 |
| 2 | Participation in learning activities | 5 |
| 3 | First assessment: Article review/ book review/ open book test/ unit test etc | 10 |
| 4 | Second assessment: Midterm test | 10 |
| 5 | Third assessment: Project work/survey/seminar/workshop/presentation | 10 |
| **Total** | | **40** |

**5.2 External Examination (Final Examination) 60%**

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of semester (proposed).

|  |  |  |
| --- | --- | --- |
| **S.N** | **Types of question** | **Points** |
| 1 | Objective type question (Multiple choice 10x1 point) | 10 |
| 2 | Short answer questions (6 questions x 5 points) | 30 |
| 3 | Long answer questions (2 questions x 10 points) | 20 |
| **Total** | | **60** |

1. **Recommended Books and References**

**Recommended Books**

Uppal A.K., Kumar, L. G., and Panda, M. M. (2004). *Kinesiology for physical education and exercise science.* Delhi: Friends Publications.

Deshpande, S.H. (1990). *Kinesiology*. Amrawati: H.V.P.M. Publications.

Lamb, D. R. (1978). *Physiology of exercise*. New York: McMillan Publication.

Karpowich, P. and Sinning, W. E. (1971). *Physiology of muscular activity*. Philadelphia: W.B. Saunders Co.

Singh, A., Bains. J., Gill, J.S. and Brar, R. S. (2012). *Essentials of physical education*. New Delhi: Kalyani Publishers.

**Course Title: Research and evaluation in Physical Education and sports**

Course No. : P. Ed. 538 Nature of course: Theory

Level: M.Ed. Credit Hour: 3

Semester: Third Teaching Hour: 48

1. **Course Description**

This course is designed to provide prospective teachers with Knowledge, methods and skills of research in physical education and sports. It also aims to enable the students in designing, selecting and applying appropriate tests, measurements and evaluation and sports. This course is intended to develop capacity of the students in different types of research methods, sampling techniques and tools of data collection in physical education and sports.

1. **General objectives**

The general objectives of this course are as follows:

* To make the students familiar with the concepts and skills of qualitative and quantitative research methods in physical education and sports.
* To enable students to select and use proper sampling techniques, design, develop and apply research tools.
* To make the students acquainted with the application skill of different types of statistical measures in research.
* To assist the students to select, develop and use various types of tests, measurements and evaluation in research in the field of physical education and sports.
* To assist the students to prepare pre proposal, develop thesis proposal and write final thesis report as per the format provided and directed by the HPPE department.

1. **Specific objectives and contents**

|  |  |
| --- | --- |
| **Specific objectives** | **Contents** |
| * Discuss the concepts, objectives and importance of research in PE and sports. * Differentiate between qualitative and quantitative research. * Illustrate different types of research methods, select and conduct research by applying different methods in PE and sports. * Design and conduct experimental research in sports and games. | **Unit I Research Methods (9)**   * 1. Concept, objectives and importance of research in Physical education and sports.   2. Review of researches in physical education   3. Issues and trends of research in physical education   4. Research designs – qualitative and quantitative.   5. Types of research methods applied to physical education:      1. Historical method      2. Descriptive method      3. Anthropometric method      4. Scientific/ experimental method |
| * Differentiate between probability and non-probability sampling techniques. * Illustrate different types probability sampling techniques * Discuss and apply different non-probability sampling techniques. * Develop, select and apply different data collection tools. * Describe meaning and types of variables in research. | **Unit II. Sampling Techniques and Tools (9 )**  2.1 Probability and non-probability sampling techniques applied to physical education and sports  2.2 Types of probability sampling techniques and non-probability sampling techniques applied to physical education and sports  2.3 Tools of data collection and their types.  2.4 Variables and its types |
| * Illustrate the concept and needs of statistics in research in PE and sports. * Explain the meaning and importance of different statistical measures in research. * Calculate the value of standard deviation, t-test, chi-square test, z-test and f-test by applying standard formula to prove hypothesis in research. | **Unit III Statistics applied to research in PE and Sports (12)**  3.1 Concept, importance and calculation of the following statistical measures applied to physical education and sports:  3.1.1 T-score, Central tendencies and Standard deviation  3.1.2 t-test  3.1.3 Chi-square test  3.1.4 Z-test  3.1.5 F-ratio |
| * Discuss concept, objectives and importance of tests, measurement and evaluation in PE and sports. * Explain different types of tests and their application in PE and sports. * Illustrate the concepts of measurement and its types. * Discuss the meaning, types and utilization of evaluation in PE and sports. | **Unit IV Test, measurement and evaluation in PE and sports (12)**  4.1 Concept, objectives and importance of test, measurement and evaluation in PE and sports.  4.2 Different tupes of tests:  4.2.1 Physical fitness tests  4.2.2 Motor fitness test  4.2.3 Motor/ Athletic ability tests  4.2.4 Sports skill tests  4.2.5 Motor educability test  4.2.6 Attitude test  4.2.7 Siciometric test  4.3 Measurement, its types and uses  4.4 Evaluation, its principles, types and utilization |
| * Select an appropriate problem or title and prepare pre-proposal. * Develop a thesis proposal on a selected topic. * Prepare a final thesis report on a given format * Prepare reference on APA format. | U**nit V Research Format (6)**  5.1 Format of pre-proposal  5.2 Format of research proposal  5.3 Format of research report  5.4 Reference in APA style |

**4. Instructional techniques**

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of proposed specific instructional techniques applicable to specific units or sub units or content.

**4.1 General instructional techniques**

Lecture, Discussion, Interaction, Individual assignment, Library study, Presentation, Project work, Group work, Personal assignment, Term paper presentation, Seminar, Work shop, etc.

* 1. **Specific instructional techniques**

|  |  |
| --- | --- |
| **Units** | **Activity and instructional technique** |
| Unit 1 | Students will be asked to review research method books and prepare individual note books on the concept, objectives and importance of research in PE and sports.  The students will be divided into different groups and they will prepare and present paper in different research methods in the class. |
| Unit 2 | A round table conference will be organised in the class to discuss and interact on sampling techniques and research tools.  The students will individually prepare types of variables with proper example. |
| Unit 3 | The students exercise different statistical measures by applying related formula to solve the given problems. |
| Unit 4 | The students will review various books related to test, measurement and evaluation and develop notes for self-study.  The students will organise a seminar on different types of tests and present in the group. |
| Unit 5 | The students will be asked to develop a pre proposal for the thesis in the topic of their choice.  They will also prepare thesis proposal to proceed ahead for thesis work.  Finally they will do research and submit thesis for viva-voce. |

**5. Evaluation**

* 1. **Internal evaluation 30%**

Internal evaluation will be conducted by subject teachers based on following activities:

|  |  |  |
| --- | --- | --- |
| **SN** | **Particular** | **Points** |
| 1 | Attendance | 5 |
| 2 | Participation in learning activities | 5 |
| 3 | First assessment: Article review/ book review/ open book test/ unit test etc | 10 |
| 4 | Second assessment: Midterm test | 10 |
| 5 | Third assessment: Project work/survey/seminar/workshop/presentation | 10 |
| **Total** | | **40** |

**5.2 External Examination (Final Examination) 60%**

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of semester (proposed).

|  |  |  |
| --- | --- | --- |
| **S.N** | **Types of question** | **Points** |
| **1** | **Objective type question (Multiple choice 10x1 point)** | **10** |
| **2** | **Short answer questions (6 questions x 5 points)** | **30** |
| **3** | **Long answer questions (2 questions x 10 points)** | **20** |
| **Total** | | **60** |

**6. References**

AAHPER (1976). *Youth fitness test manual***.** Washington: American Alliance for Health, Physical Education and Recreation. (Unit IV)

Barrow, H.M. and Mc Gee, R. M. (1979). *A practical approach to measurement in physical education*. Philadelphia: lea and Fabiger.. (Unit III and IV)

Best, J.W. & Kahn, J.V. (2004). *Research in education*. New Delhi: Prentice Hall of India. (Unit I, II, III and V)

Bosco, J.S. and Gastafson, W. F. (1983). *Measurement and evaluation in physical education, fitness and sports*. New Jersy: Prentice-Hall, Inc. (Unit III and IV)

Clarke, H.H. and Clarke, D. H. (1987). *Application of measurement to physical education*. New Jersy: Prentice-Hall, INC. (Unit III and IV)

Jha, Ashok Kumar (2009). *Test, measurement and evaluation in physical education*. Kathmandu: Ekta Books. (Unit IV)

John, B.L. and Nelson, J.K. (1982) *Practical measurement for evaluation in physical education*. Delhi: Surjeet Publication. (Unit III and IV)

Kerlinger, F.N. (2005). *Foundations of behavioral research*. New Delhi: Sanjeet Publications. (Unit I, II, III and V)

Khanal, P. (2065). *Educational research methodology*. Kathmandu: Sunlight Publication. (Unit I, II, III and V)

Koul, L. (2000). *Methodology of education research*. New Delhi: Vikash Publication House. (Unit I, II, III and V)

Kothari, C.R. (2004). *Research methodology: Methods and techniques*. New Delhi: New Age International. (Unit I, II, III and V)

Kumar, R. (1999). *Research methodology; a step-by-step guide for beginners*. New Delhi: SAGE Publications India Pvt. Ltd. (Unit I, II, III and V)

Maharjan, R.K., Sherchan L., Maharjan, S.K., Mudwari, N. and Aryal B. (2013). *A handbook of thesis writing in health, physical and population education.* Kathmandu; Sunlight Publication. (Unit I, II, III and V)

Mathews, Donald K. (1978). *Measurement in physical education.* Philadelphia: W.B. Saunders Company. (Unit III and IV)

Surinder Nath, (1993). *Anthropometry: the measurement of body size, shape and form.* Delhi: Friends Publication. (Unit IV)

# Course title: Political Science Education I

Course No.: Pol. Sc. 535 Full marks: 100

Nature of the course: Theory Pass marks: 40

Level: M. Ed. Periods per week:

Third Semester Time per period: 1 hour

Total periods: 48

## 1. Course Description

This course is designed for the students who specialize in Political Science Education. It intends to provide a theoretical base of pedagogical components and various skills of teaching strategies. The contents of this course have been divided into five unites. Unit I deals with introduction, unit II with instructional objectives, while unit III with instructional strategies. Unit IV includes evaluation techniques whereas unit V gives emphasis on instructional planning in political science education.

**2. General Objectives**

The general objectives of this course are as follows:

* To acquaint the students with the pedagogical concept of political Science Education.
* To enable the students in writing different types of instructional objectives.
* To make the students familiar with the importance and use of various teaching methods, techniques and materials.
* To help the students in preparing subjective and objective test items.
* To familiarize the students about the preparation and use various types of instructional planning.

## 3. Specific Objectives and Contents

|  |  |
| --- | --- |
| Specific Objectives | Contents |
| * Explain the concept of a discipline. * Describe the growth of Political Science as a discipline. * Discuss the meaning and purpose of political science education, political education and politics of education. | **Unit I: Introduction (6)**   * 1. Political Science as a discipline.   2. Political Science Education   3. Political Education   4. Politics of Education |
| * Analyze the taxonomy of educational objectives. * Clarify the concept of curricular objectives. * Explain the features of instructional objectives. * Construct instructional objectives from given political science course. | **Unit II: :Objective in Political Science Education (6)**   * 1. Educational Objectives   2. Curricular Objectives   3. Instructional Objectives   4. Construction of Instructional Objectives. |
| * Explain the concept of instructional strategies * Critically analyze and evaluate various methods and techniques of teaching political science. * Discuss the concepts, features and major strategies of critical thinking approach. * Describe the importance and use of various reading materials, maps, charts and diagrams. | **Unit III: Instructional strategic in Political Science Education (20)**  3.1 Concept of Instructional Strategies.  3.2 Critical analysis of teaching methods and Techniques (Lecture, Discussion, Inquiry, Problem-solving, Project and Observation).  3.3 Critical Thinking Strategies  3.4 Instructional materials: (Reading materials, Maps, Charts and Diagrams). |
| * Discuss the importance and purpose of evaluation. * Critically analyze the subjective and objective tests. * Describe the importance and use of specification chart. * Prepare a model specification chart. * Construct long-answer and short answer questions as well as objective items. | **Unit IV: Evaluation in Political Science Education (10)**   * 1. Importance and Purpose of Evaluation.   2. Critical analysis of subjective and objective tests.   3. Specification chart   4. Construction of Questions. |
| * Explain the importance and purpose of different instructional plans. * Prepare work plan, unit plan and lesson plan. | **Unit V: Instructional Planning in Political Science Education (6)**   * 1. Work plan   2. Unit plan   3. Lesson plan. |

Note: The figures within the parentheses indicate the approximate periods for respective units**.**

**4. Instructional Techniques**

Two categories of instructional techniques – general and specific instructional techniques are suggested

4.1 General Instructional Techniques

Lecture, discussion and question – answer will be the common instructional techniques to be used while teaching this course. It is also anticipated that the lectures will be participatory and interactive in nature.

4.2 Specific Instructional Techniques

Unit II- IV: Classroom practices.

1. **Evaluation**

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities

1. Attendance 5 points
2. Participation in Learning activities 5 points
3. First assignment/ midterm exam 10 points
4. Second assignment/assessment (one or two) 10 points
5. Third assignment/ assessment 10 points

Total 40 points

* 1. External Evaluation (final examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester (proposed)

1. Objective type question (multiple choice 10x1 point) 10 points
2. Short answer question (6 questions x5 points) 30 points
3. Long answer questions (2 questions x 10 points) 20 points

Total 60 points

1. **Recommended Books and References**

**Recommended Books:**

Armstrong, R. J., et. al. (eds). (1968). *Developing and writing behavioural objectives*. Arizona: Educational Innovators Press Inc. (For unit II)

Bloom, S. et. al (eds). (1956). *Taxonomy of educational objectives hand book I cognitive Domain*. New York: David Mckay Co. Inc. (For unit II)

Crawford, A. et al (2005). *Teaching and learning strategies for the thinking classroom*. New York: The International Debate Education Association. (For unit III)

Dececco, J. P. (1970). *The psychology of learning and instruction: Educational psychology.* New Delhi: Prentice Hall of India Private Limited (For unit III)

Lenin, L. & Gronlund, E. (2003). *Measurement and assessment in teaching (First Indian Reprint)*. Delhi: Pearson Education Pvt. Ltd. (For unit IV)

**References**

Jarolimek, J. (1971). *Social studies in the elementary school*. New York: Macmillan.

Karthwohl, R., et. al. (eds). (1964). *Objectives-hand-book II: The affective domain*. New York: David Mckay Co. Inc.

Palardo, J. (1975). *Teaching today: tasks and challenges*. New York: Macmillan Publishing Co. Inc.

Peters, J. et. al., (1963). *Introduction to teaching*. New York: the Macmillan Company.

Regan, B. (1966). *Modern elementary curriculum*. New York: Holt, Rinehart and Winston Inc.

Wood, B. (1960). *Foundations of curriculum planning and development*. Katmandu: Bureau of Publications, College of Education.

# Course title: ..................................................

Course No.: Pol. Sc. Ed. 536 Nature of the course: Theory

Level: M. Ed. Credit Hour: 3

Semester: II Teaching Hour: 48 hours

**This course is being prepared**

Course title: **Nepalese Politics** Nature of the course: Theory

Course No.: Pol.Sc.Ed. 537 Level: M. Ed. Credit Hour: 3

Semester: II Teaching Hour: 48 hours

## 1. Course Description

This course is designed for the students who specialize in Political Science Education. It intends to provide the knowledge of Nepalese politics. The contents of this course have been divided into six unites. Unit I, deals with the introduction of Nepalese politics and unit II, deals the political movements of 2007 BS. Unit III, focuses on the era of different political system. Unit IV, illustrates the restoration of democracy. Unit V, includes the Constituent Assembly Election and afterwards. Similarly unit VI, gives the brief survey of Nepalese foreign policy respectively.

**2. General Objectives**

The general objectives of this course are as follows:

* To acquaint the students with political movement of 2007 BS;
* To make the students familiar with the era of different political system which were introduced in Nepal;
* To make the students understand the Constituent Assembly Election and the politics of afterwards;
* To provide the students with the knowledge of Nepalese foreign policy.

## 3. Specific Objectives and Contents

|  |  |
| --- | --- |
| Specific Objectives | Contents |
| * Describe the characteristics and trends of Nepalese politics. | **Unit I: Introduction to Nepalese Politics**  3   * 1. Characteristics   2. Trends |
| * Describe the social, economic, and political causes of democratic movement * Describe the external causes influenced by the international environment. | **Unit II: Democratic Movement,2007 BS**  **(5)**   * 1. Internal causes:(Social, Economic and Political)   2.2 External causes. |
| * Describe the features of interim constitution, 2007 BS. * Evaluate different types of political experiment under interim constitution of 2007 BS. * Describe the features of the Constitution of the Kingdom of Nepal 2015 BS. * Evaluate the work of first elected government and the deepening crisis at home. * Describe the working of Panchayat system and the features of the Constitution of Nepal of 2019 BS. | **Unit III: Era of Different Political System (13)**   * 1. Interim Constitution of 2007 BS   2. Era of party politics2007-2015   BS   * 1. Constitution of the Kingdom of Nepal 2015 BS   2. Dismantle of the first elected government   3. Era of Panchayat politics and the Constitution of Nepal 2019 BS |
| * Describe the causes and consequences of joint popular anti Panchayat Movement. * Describe the features of the Constitution of the Kingdom of Nepal 2047 BS. * Describe the reasons of the political of instability after 2047 BS, and the king’s step in politics. * Describe the causes of second joint popular movement. * Describe the features of the Interim Constitution of 2063 BS. | **Unit IV: Restoration of Democracy (12)**   * 1. Joint Popular anti Panchayat Movement   2. Constitution of the Kingdom of Nepal 2047 BS   3. Political instability and king’s step in politics   4. Second joint popular Movement2062 BS.   5. Interim Constitution of 2063 BS |
| * Describe the purposes and process of the first CA and second CA election. * Explain the features, prospects and challenges of present political system. * Describe the role of major political parties. | **Unit V:The Constituent Assembly Election and afterwards (6)**  5.1 Election of first CA and second CA  5.2 Features, prospects and challenges of present political system.  5.3 Role of major political parties |
| * Describe the objectives, principles and determinants of Nepalese foreign policy. * Analyze the role played by Nepal in the SAARC and the UNO. * Describe the relation of Nepal with independent India and the People’s Republic of China. | **Unit VI: Nepalese foreign policy (9)**   * 1. Objectives, principles and determinants of Nepalese foreign policy   2. Role of Nepal in the SAARC and the UNO   3. Nepal’s relation with India and China |

Note: The figures within the parentheses indicate the approximate periods for respective units.

**4. Instructional Techniques**

Two categories of instructional techniques – general and specific instructional techniques are suggested

4.1 General Instructional Techniques

Lecture, discussion and question – answer will be the common instructional techniques to be used while teaching this course. It is also anticipated that the lectures will be participatory and interactive in nature.

4.2 Specific Instructional Techniques

Specific instructional techniques to be used while teaching the course will be as follows:

Unit III and IV: Prepare seminar paper on the evaluation of work of first elected government and classroom practice to identify the causes of the king’s step in Nepalese politics, 2058 BS.

Unit V: Project work in preparing a research report about the open border problem or probability between Nepal and India.

1. **Evaluation**

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities

1. Attendance 5 points
2. Participation in Learning activities 5 points
3. First assignment/ midterm exam 10 points
4. Second assignment/assessment (one or two) 10 points
5. Third assignment/ assessment 10 points

Total 40 points

* 1. External Evaluation (final examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct the final

examination at the end of the semester (proposed)

1. Objective type question (multiple choice 10x1 point) 10 points
2. Short answer question (6 questions x5 points) 30 points
3. Long answer questions (2 questions x 10 points) 20 points

Total 60 points

1. **Recommended Books and References**

**Recommended Books:**

Adhikari, S.M. (1995). *Nepalma prajatantrik andolan ko ithas.* New Delhi: Nirala Publications.

Baral, L.K.(2012). *Nepal nation-state in the wilderness (managing state democracy and geopolitics).* New Delhi: sage publications.

Baral L.K. (2006). *Nepal: facets of Maoist insurgency*. New Delhi: Adroit publications.

Bhasin, A. K. (ed. ). (1966). *Documents on Nepal’s relation with India and China 1946-1966(part II).* Bombay: Academic books.

Dahal, R. K. (2001). *Constitutional and political development in Nepal*. Kathmandu: Ratna Pustak Bhandar.

Gupta, A. (1993*). Politics in Nepal 1950-1960*. New Delhi: Kalinga Publications

Joshi, B.and Rose, L. E, (2004). *Democratic innovation in Nepal: A case study of acculaturation* . Kathmandu: Mandala Publication.

Whelpton, J. (2008). *History of Nepal*. Cambridge University Press

**References**

Adhikari, S. M. (2002). *Nepali congressko itihas*. Kathmandu: Bhudipuran Prakasan.

Agrawal, H.N. (1976). *Administrative system of Nepal*. New Delhi, Vikas Publicasing.

Bhandari, D. R. (1958). *Nepalko itihasik vibechana*. Banaras: Krishna Kumari Devi.

Chatarji, B. (1967). *A study of recent Nepalese politics*. Culcutta: The World Press Pvt. Ltd.

Chauhan, R. S. (1971). *The political development in Nepal1957-70: Conflict between tradition and modernity.* New Associate Publishers.

Devkota, G. B.(vol. 1st 1979, vol. 2nd. 1. 980, vol. 3rd 1983, vol. 4th 1983). *Nepalko rajnitik Darpan*. Kathmandu: Arjun Bahadur Devkota.

Jha, S. K. (1975*). Uneasy partners: India and China in the post colonial era*. New Delhi: Manas Publications.

Joshi, B. and Rose, L. E. (2004). *Democratic innovation in Nepal: A case study of acculturation*. Kathmandu: Mandala Publications.

Khanal, Y. N. (1972). *Nepal transition from isolation* . Kathmandu: Shaja Prakasan.

Lawati, M. (ed.) (2008). *Contentious politics and democratization in Nepal*. New Delhi: Sage Publications Pvt. Ltd.

Muni, S. D. (1992*). India and Nepal: Changing relationship*. New Delhi: Konark Publishers.

Muni, S. D. (1992). *The foreign Policy of Nepal*. New Delhi: Konark Publishers.

Ramakant, (1976). *Nepal China and India: Nepal China relations*. New Delhi: Abhinav Publications.

Rose, L. E. (1971). *Strategy for survival*. Bombey: Oxford University.

Shah, R. (2006). *Nepal politics: retrospect and prospect (Second edition*). New York: Oxford University Press.

Sharma, B. C. (1976). *Nepalko itihasik ruprekha*, Banaras: Krishna Kumari Devi.

Siddique, M. (2006). *India and SAARC nations*. New Delhi: Max Ford Books.

Singh, S. B. (2007). *Nepal struggle for democracy*. New Delhi: Adhyayan Publishers and Distributors.

Tuladhar, T. R. (1960). *Nepal China: a story of friendship*. Kathmandu: HMG.

Upreti, B. C. (2008). *Regional cooperation in south Asia: emerging dimensions and issues*. New Delhi: Summit Enterprises.

# Course title: Research Methodology in Political Science Education

Course No.: Pol. Sc. Ed. 538 Full marks: 50

Nature of the course: Theoretical + Practical Pass marks: 20

Level: M. Ed. Periods per week: 3

Semester: 3rd Time per period: 60 minutes

Total periods: 48

**1. Course Description**

This course is intended to acquaint the students, with the techniques of conducting political science education research. The course is divided in five units. Unit I deals with the introduction to Political Science Education research, Unit II deals research design. Unit III incorporates the data collection methods and tools. Unit IV includes data processing and analysis as well as Unit V gives emphasis on writing research proposal and thesis / dissertation respectively.

**2. General Objectives**

The general objectives of the course are as follows:

* To familiarize the students on fundamental concepts, perspectives and approaches of political science education research.
* To acquaint the students with the methods and process of research to achieve the scientific knowledge in political science education field.
* To familiarize the students with some basic tools in statistics to help them understand the fast changing approaches and techniques in political science research.

**3.Specific Objectives and Contents**

|  |  |
| --- | --- |
|  | |
| **Specific Objective** | **Contents** |
| * Clarify the meaning, type, salient features, purposes of research and educational research. * Explain the theories and paradigm in educational research. * Discuss theories and paradigm in educational research. * Discuss the research practices in political science education research. * Analyses the fundamental concepts of political science education research | **Unit I : Introduction to Political Science Education Research (8)**  1.1 Educational Research: Perspectives and Approaches  1.1.1 Introduction to Research  Definition, Type, Salient Features, Objectives  1.1.2 Theories and Paradigm in Educational Research,  1.1.3 Research practices in Political Science Education Research  1.2. Fundamental Concepts of Political Science Education Research  1.2.1 Research Problem, Hypothesis, Objectives, Conceptual framework, Causality (Cause and Effects), Reliability and Validity, generalization and Dissemination |
| * Describe the meaning and fundamental features of research designs * Analyses the different types of research designs. * Critically analyze the research designs | **Unit II: Research Designs** **(5)**  2.1 Meaning, Fundamental Features,  2.2 Types (Qualitative, Quantitative and mixed design)  2.3 Strengths and Limitations of (Descriptive, Longitudinal, Cross-Cultural and Comparative) Research Designs. |
| * Describe the sample selection, rapport building in political science research**.** * State the sampling methods and size for different types of research. * State methods and types of survey. * State the uses of measurements, its rational and limitations in data collection procedure. * Describe ways for the preparation of questionnaire, its types, uses and limitations. * Describe field research, its methods and modes of inquiry. * Explain case design and procedure * Describe qualitative interviews with reference to key informant interview and focused group discussion. * Prepare guidelines/checklist for conducting qualitative interview and focus group discussion | **Unit III: Data Collection: method and Tools (10)**  3.1Selection of sample area and rapport building  3.2 Quantitative Research/Data   * + 1. Sampling Methods and size calculation     2. Survey research: Methods and Types     3. Measurements: Uses, Rationale and Limitations     4. Questionnaire and opinionnaire preparation: Types, Uses and Limitations   1. Qualitative Research and Data   3. 3.1 Field Research (Field methods and modes of inquiry)  3.3.2 Case study design and procedure   * + 1. Qualitative Interviews: Key Informant Interview (KII), Focused Group Discussion (FGD)   3.3.2 Preparation interview and focus group discussion guideline/chicklist |
| * Describe the quantitative data processing. * State the frequency, measure of central tendency and measures of dispersion in one variable analysis. * Describe bivariate tables, measures of association and regression analysis. * Apply inferential statistics in quantitative data analysis * Explain use of SPSS software in analyzing quantitative data * Describe conceptualizing, coding, organizing and categorizing of qualitative data. * Explain interpretative analysis and familiarize the students on case study writing. | **Unit IV: Data Processing and Analysts (15)**   * 1. Quantitative data analysis:      1. Quantitative Data Processing      2. One Variable Analysis (frequency, measure of central tendency, measures of dispersion)      3. Two Variable Analysis (Bivariate tables, measures of association, regression analysis)      4. introduction to Multiple regression analysis      5. Use of Inferential statistics * Parametric (***z***-test, ***t***-test, and ***F***-test) * Non-parametric (***Chi square*** test)   4.1.6 Application of SPSS in quantitative data analysis   * 1. Qualitative Data Analysis:      1. Conceptualizing, (thematic) Coding,      2. Organizing and Categorizing, qualitative data (verbal / illustration)      3. Interpretative Analysis      4. Writing Case Studies |
| * Prepare the research proposal including all the components. * Describe the need of literature review. * Describe the ways for the identification and selection of relevant literature. * Describe the basic requirements of scientific writing (as thesis or dissertation) with its essential elements. * Elucidate the ways of different essential components of research report. * Apply the American Psychological Association (APA) while preparing educational research report. | **Unit V: Writing Research Proposal and Thesis / Dissertation (10)**   * 1. Proposal :      1. Proposal Preparation      2. Components of a Research Proposal   2. Literature Review:      1. Introduction and Need for Literature Review (reasons/justification, uses)      2. Identification and selection of relevant Literature   5.3 Scientific Writing (International Standard Format):   * + 1. Thesis/Dissertation   5.3.2 Research Reports (based on TOR given by projects / clients / agencies / organizations. etc.)   * + 1. Use of American Psychological Association (APA) format in research report**.** |

**4. Instructional Techniques**

Two categories of instructional techniques – general and specific instructional techniques are suggested

4.1 General Instructional Techniques

Lecture, discussion and question – answer will be the common instructional techniques to be used while teaching this course. It is also anticipated that the lectures will be participatory and interactive in nature.

4.2 Specific Instructional Techniques

Specific instructional techniques to be used while teaching the course will be as follows:

Unit III and IV: Practice/project work in preparing data collection instruments and in calculating statistics in group and individually.

Unit V: Practice/project work in preparing dummy proposal and reports in group and individually

1. **Evaluation** 
   1. Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities

1. Attendance 5 points
2. Participation in Learning activities 5 points
3. First assignment/ midterm exam 10 points
4. Second assignment/assessment (one or two) 10 points
5. Third assignment/ assessment 10 points

Total 40 points

* 1. External Evaluation (final examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester (proposed)

1. Objective type question (multiple choice 10x1 point) 10 points
2. Short answer question (6 questions x5 points) 30 points
3. Long answer questions (2 questions x 10 points) 20 points

Total 60 points

1. **Recommended Books and References**

**Recommended Books**

Best, J.W. & Kahn, J.V. (2001). *Research in education*. New Delhi: Prentice Hall of India Private Limited. (For units I, II, & V)

Bryman, Alan. (2001). *Social research methods*, Oxford University Press, Oxford.

(For units I to V)

Cohen, L. Menion, L. & Morriom, K. (2008). *Research Method in Education.* India: Pontledge

Denzin, N.K. & Lincoln, Y.S. (eds.). (2000). *Handbook of qualitative research.* London: Sage Publications.

Galtung, Johan (1973). *Theory and methods of social research*. London: Geore Allen & Unwin Ltd.

Gupta, Santosh (2003*). Research methodology and statistical techniques*. Delhi: Arn old Heincmann.

Hancock, B. (2002). *An introduction to qualitative research*. Nottingham: Trent Focus Group.

Kerlinger, F.N. (1973). *Foundations of behavioral research.* New York: Holt, Rinehart and Winston, Inc.

McNabb, David, B. (2004). *Research methods for political science.* New Delhi: Prentice-Hall of India.

Kothari, C.R. (1997). *Research methodology: Methods and techniques.* Delhi: Wishwa Prakashan.

Koul, L. (1997). *Methodology of educational research.* New Delhi: Vikash Publishing House Pvt. Ltd

Pant, Prem Raj and Wolf (2003). *Introduction in research Method:* a guide for thesis writing.

Penings, P., Keman, and Kleinnijenhuis (2006). *Doing research in political science*. London: Sage Publication

**References**

American Psychological Association. (2008). *Publication manual of the American Psychological Association (5th ed.).* Washington, DC: APA

Borgatti, S.P. (1999). *Elements of a theoretical framework. Retrieved* 22 April, 2010 from <http://www.analytictech.com/mb313/elements.htm>

Qualitative research methods: *A data collector’s field guide*. Retrieved 11 May 2010 from <http://www.fhi.org/NR/rdon/yres/etl7> ............ pdf.

Report writing. Retrieved 11 May 2010 from <http://custom-writing.org/report> writing

Thesis Report Writing Format, Online Sample Thesis Writing Example Format. (2010). Retrieved 22 April, 2010 from http://thesisnepal.com/Thesis-Report-Format.php

What is the role of theoretical framework in research? (2010). Retrieved 22 April, 2010 from <http://wiki.answers.com/Q/What> is the role of theoretical framework in research.

**Course Title: Technology of Teaching Population Education**

Course No. : Pop. Ed. 535 Nature of Course: Theory

Level: M.Ed. Credit Hours: 3

Semester: Third Teaching Hours: 48

**1. Course Description**

This course is designed to acquaint the students with educational technology, instructional designs, innovative teaching approaches and communication in teaching population education. It also intends to enable the students to develop skills in designing, selecting and using appropriate teaching materials and media in teaching population education.

**2. General Objectives:** The general objectives of this course are as follows:

* To acquaint the students with education technology, innovative instructional designs and approaches in teaching population education.
* To make them able to select appropriative approaches and materials/media for classroom teaching.
* To enable the students to apply those innovative teaching strategies and materials in the teaching situation.
* To acquaint the students with information, communication and technology (ICT) in teaching population education.

1. **Specific Objectives and Contents**

|  |  |
| --- | --- |
| **Specific Objectives** | **Contents** |
| * Differentiate between educational and instructional technology. * Discuss the scope and educational advantage of educational technology. * Apply different types of instructional designs in teaching population education. | **Unit I: Educational Technology and Instructional Designs in Population Education (12)**   * 1. Difference between educational and instructional technology   1.1.1 Scope and advantage of educational technology.  1.1.2 Instructional designs.  1.1.3 Objective based  1.1.4 Skill based  1.1.5 Competency based  1.1.6. Learning-style based  1.1.7. Model based |
| * Apply different modern teaching strategies in classroom situation * Implicate modern approaches in teaching population education. * Explain the importance of distance mode approach in population education | **Unit II: Approaches of Teaching Technologies** **(15)**   * 1. Modern Teaching strategies in population education (concept, components, strategies, implication)   2.2.1 Teaching Strategies   1. Direct Instruction (lecture, structured overview, explicit teaching, drill & practice, compare & contrast, demonstrations, didactic questioning, guided and shared teaching etc.) 2. Indirect Instruction (problem solving, case studies, inquiry, reflective discussion, concept formation, mapping and attainment, writing to inform, reading for meaning etc.) 3. Experiential Learning (field trips, narratives, experiments & simulations, games, storytelling, role-playing, model building etc.) 4. Independent Study (essays, journals & reports, homework, research projects, assignments etc. 5. Interactive Instruction (debates, brainstorming sessions, cafeteria sessions, station sessions, laboratory groups, interviewing, conferencing, puzzle, collaborative learning, etc)   2.2.2 Approaches of teaching population education   1. Peer approach 2. Life skills approach   2.2.3 Distance mode approach   1. E- learning 2. D- learning 3. O- learning |
| * List the requirements of a digital classroom for teaching population education * Explain the essentials of effective communication in population education * Discuss the barriers in population education communication. * Conceptualize various aspects of diffusion theory of communication. * Plan communication process in population education. * Use different interaction analysis techniques in teaching population education. * Analyse the teachers and students behaviour while teaching population education. | **Unit III: Communication Process in Population Education (9)**  3.1 Digital classroom for teaching population education  3.2 Essentials of effective communication in population education  3.3 Barriers in population education communication  3.4 Diffusion theory of communication  3.5 Communication planning process in population education  3.6 Use of interaction analysis techniques in teaching population education  3.6.1 Flanders' interaction analysis categories (FIAC)  3.6.2 Reciprocal category system (RCS)  3.6.3 Equivalent talk category system (ETC)  3.6.4 Regional college of education Ajmer system (RCEAS)  3.7 Transaction analysis of behaviour between teachers and students |
| * Conceptualise need and * Explain the principles of selecting teaching materials and media in population education. * Use different types of ICTs in teaching population education. * Prepare and use different teaching aids in population education. * Illustrate the importance of Edgar Dale’s cone of experience in teaching population education. | **Unit IV: Teaching Materials and Media in Population Education (6)**   * 1. Principles of selecting teaching materials and media for population education   2. Use of ICTs in teaching population education   4.2.1 Electronic materials  4.2.2 E-library  4.2.3 Television  4.2.4 Social sites  4.2.5 Moodle  4.2.6 Online conference  4.3 Application of Edgar Dale’s cone of experience in teaching population education |
| * Review population education curriculum of school level of Nepal. * Analyse existing curriculum of population education in school and higher education level. | **Unit V: Curriculum Analysis in Population Education (6)**   * 1. Review of school curriculum on Population Education and Health, Population and Environment Education   2. Critical Analysis of existing population education curriculum (Secondary, Higher Secondary and B. Ed.) |

*Note: The figure in the parenthesis indicate the approximate periods for the perspective units*

**4. Instruction Techniques**

**4.1 General Techniques**

The instructional techniques will be applied on the basis of the nature of lessons under each unit. In general, following instructional techniques are applicable in the prescribed contents and units:

* Discussion
* Interaction
* Presentation
* Lecture cum question-answer
* Demonstration
* Self study

**4.2 Specific Instructional techniques**

|  |  |
| --- | --- |
| **Units** | **Activity and instructional technique** |
| I | Students will be asked to review the meaning and importance of educational technology and prepare individual notes on the concept, objectives and importance of educational technology. They will also be asked to analyse different learning theories applied to teaching technology especially in population education. Teacher will explain whenever necessary. |
| II | The students will be divided into different groups to apply different teaching strategies and approaches in teaching health education. The group leaders will present collections and organize interaction session. The teacher will explain and demonstrate the newly introduced teaching strategies. |
| III | The teacher will describe the concept, need and importance of communication in teaching population education and she will also explain different methods and types of communication in teaching population education. The students will be asked to apply communication models in teaching population education. Discussion sessions will be organised to ensure to plan communication process in population education. |
| IV | The teacher will explain need and importance of teaching materials and media in population education teaching. The students will be asked to collect and prepare different ICT materials which can be applied in teaching population education. |
| V | Students will be asked to collect curriculum of population education of different levels. They will also be asked to review that curriculum in terms of objectives, contents and their relevancy. |

**5. Evaluation**

* 1. **Internal evaluation 40%**

Internal evaluation will be conducted by subject teachers based on following activities:

|  |  |  |
| --- | --- | --- |
| **SN** | **Particular** | **Points** |
| 1 | Attendance | 5 |
| 2 | Participation in learning activities | 5 |
| 3 | First assessment: Article review/ book review/ open book test/ unit test etc | 10 |
| 4 | Second assessment: Midterm test | 10 |
| 5 | Third assessment: Project work/survey/seminar/workshop/presentation | 10 |
| **Total** | | **40** |

**5.2 External Examination (Final Examination) 60%**

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of semester (proposed).

|  |  |  |
| --- | --- | --- |
| **S.N** | **Types of question** | **Points** |
| 1 | Objective type question (Multiple choice 10x1 point) | 10 |
| 2 | Short answer questions (6 questions x 5 points) | 30 |
| 3 | Long answer questions (2 questions x 10 points) | 20 |
| **Total** | | **60** |

**6. Recommended Readings**

Acharya, K.P & Adhikari, B.K. (2014). *Modern approaches in health education. Kirtipur: Dixant Publication (I-v))*

Aggrawal, J.C. (1999). *Principles, methods & techniques of teaching.* New Delhi: Vikas Publishing House Pvt. Ltd. (***For Unit I)***

Hubley, John (1993). *Communicating health: An action guide to health education and health promotion.* Malaysia: Macmillan Education Limited. (***For Unit III)***

Kumar, K.L. (1996). *Educational technology*. New Delhi: New Age International (P) Ltd. (***For Unit I)***

Mangal, S. K. & Mangal, U. (2009). *Essential of educational technology*. New Delhi: PHI Learning Limited. (***For Unit I, II & IV).***

Mudwari, N. (2068 B.S.). (Nepali*) Modern approaches in heath education. Kathmandu:* Jupiter Publisher and Distributors, (***For Unit I, II, III & IV).***

Park, K. (2009). *Park’s textbook of preventive and social medicine (20th ed.).* Jabalpur, India: M/s Banarsidas Bhanot Publishers. ***For Unit III.***

Ramachandran, L. & Dharmalingham, T. (2004). *Health education: A new approach*. New Delhi: Vikash Publishing House Pvt. Ltd. (***For Unit III)***

Sampath,K., Panneerselvam, A. & Santhanan, A. (2000). *Introduction to educational technology (4th edit.)* New Delhi: Sterling Publishers Pvt. Ltd. (***For Unit I)***

[www.ai-media.tv/‎](http://www.google.com/aclk?sa=l&ai=CrlpuqDKWVLiKHNPOuAS2-oHoB_Srlo8HjNeZ5dwB-L_6CQgAEAEgpbmXGSgEYI0EoAH8s-3hA8gBAakC5I0U1RBRqz7IAxuqBCVP0ANbugwkK8WrJ6pHUZUXZxeMa3Ca41GLltFprDsHpBP65ntYgAfsy5IekAcBqAemvhs&sig=AOD64_0zRB3qaTSTBXPC5p9cIaPLCMYJBA&adurl=http://www.ai-media.tv/visible-classroom-teaching-strategies/&nb=1&res_url=http%3A%2F%2Fwww.amazon.com%2Fgp%2Fbit%2Fapps%2Fweb%2FSERP%2Fsearch%2Fref%3Dbit_bds-p12_serp_ff_us%3Fie%3DUTF8%26tbrId%3Dv1_abb-channel-12_12e645351e5540879dbe95f274274e0e_39_1006_20140614_NP_ff_sp_enrest79win-npd%26tagbase%3Dbds-p12%26query%3DInstructional%2Bapproached&rurl=http%3A%2F%2Fwww.amazon.com%2Fwebsearch%2Fref%3Dbit_bds-p12_serp_ff_us_display%3Fie%3DUTF8%26tagbase%3Dbds-p12%26tbrId%3Dv1_abb-channel-12_12e645351e5540879dbe95f274274e0e_39_1006_20140614_NP_ff_sp_enrest79win-npd&nm=25) ***For Unit II.***

www.scalelive.com/education.html ***For Unit II***

Course Title: **Population of Nepal**

Course No. : Pop Ed. 536 Nature of course: Theoretical

Level: M. Ed. Credit hours : 3

Semester: Third Teaching hours: 48

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**1. Course Description**

This course is designed to acquaint the students with the various characteristics of population in Nepal. Specifically, this course intends to enable the students in analyzing the basic population data with reference to population size, growth, composition, distribution, fertility, mortality and migration in Nepal. Activities such as seminar, report writing, presentation, review of literature etc. will be conducted under this course.

**2. General Objectives of the Course**

The general objectives of this course are as follows:

* To familiarize the students with the knowledge of population size, growth, composition and distribution.
* To make the students able to analyze the population data.
* To enable the students in utilizing demographic and socio-economic data in different situation.
* To equip the students with the knowledge and skills on population projection on the basis of past and present data.

**3. Specific Objectives and Contents**

|  |  |
| --- | --- |
| **Specific Objectives** | **Contents** |
| * Explain the meaning of sources of population date. * Discuss the types of sources of population data * Explain the ............................................ * Outline sample survey and operation * ............... international publications. | **Unit I. Sources of Population Data in Nepal (8)**  1.1 Meaning f sources of population data  1.2 Types of sources of population data  1.3 Population census and operation  1.4 Vital registration system  1.5 Sample survey and operation  1.6 International publications (PRB and UN data) |
| * Discuss the size and growth rate of population in Nepal * Analyze the population distribution by ecological zones, development regions and rural urban areas * Analyze the population density by national, ecological zones and development regions * Discuss the age and sex composition of population in Nepal | **Unit II. Population Characteristics of Nepal (10)**  2.1 Population size and growth rate  2.2 Population distributions  2.2.1 Ecological zones  2.2.2 Development regions  2.2.3 Rural urban areas.  2.3 Population density  2.3.1 National situation  2.3.2 Ecological zones  2.3.3 Development regions  2.4 Age and sex composition |
| * Assess the level and trends of fertility in Nepal * Assess the level and trends of mortality in Nepal * State the level and trends of internal and international migration * Discuss the level and trends of SMAM in Nepal | **Unit III Demographic Characteristics of Nepal (10)**  3.1 Level and trends of fertility in Nepal (CBR, ASFR and TFR)  3.2 Level and trends of mortality in Nepal (CDR, ASDR, IMR and MMR)  3.3 Level and trends of internal migration in Nepal  3.4 Level and trends of international migration in Nepal  3.5 Level and trends of SMAM in Nepal |
| * Discuss the trend of religious composition of population in Nepal * Discuss the trend of lingual composition of population in Nepal * Explain the trend of caste and ethnical composition of population in Nepal * Describe the trend of educational composition of population in Nepal | **Unit IV. Social Characteristics 10**  4.1 Religious composition by national, ecological and rural and urban areas  4.2 Lingual composition by national, ecological and rural and urban areas  4.3 Caste and ethnic composition by national, ecological and rural and urban areas  4.4 Educational composition by national, ecological and rural and urban areas |
| * Discuss the level and trends of urbanization in Nepal by ecological zones and development regions * Explain the level and trends of labour force * Outline age ......................... in .................. * Discuss the distribution of population by occupations | **Unit V. Economic characteristics 10**  5.1 Level and trends of urbanization in Nepal  5.2 Level and trends of urbanization by ecological zones and development regions  5.3 Level and trends of labour force  5.4 Age sex participation in economic activities  5.5 Distribution of active population by occupations |

**Note:** The figures in the parentheses indicate the approximate teaching hours for the respective units.

**4 Instructional Techniques**

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of proposed specific instructional techniques applicable to the particular units.

**4.1 General Instructional Techniques**

* Lecture and computing practices
* Review of books, data sheet, monograph, research report etc.
* Group work, report writing, seminar and presentation

**4.2. Specific Instructional Techniques**

|  |  |
| --- | --- |
| **Units** | **Activities and Instructional Techniques** |
| **I** | Review of books, population monograph, statistical year books, National planning reports, survey reports etc. and discuss on them. Conducting group work, report writing and presenting through seminar. |
| **II** | Review of books, population monograph, statistical year books, PPP report, survey reports etc. and discuss on them. Conducting group work, report writing and presenting within the class. |
| **III** | Review of books, population monograph, statistical year books, National planning reports, survey reports etc. and discuss on them. Conducting group work, report writing and presenting through seminar. |
| **IV** | Review of books, population monograph, statistical year books, National planning reports, survey reports etc. and discuss on them. Conducting group work, report writing and presenting within the class. |
| **V** | Review of books, population monograph, statistical year books, National planning reports, survey reports etc and discuss on them. Conducting group work, report writing and presenting within the class. |

**5. Evaluation**

* 1. **Internal Evaluation 40%**

Internal evaluation will be conducted by subject teachers based on following criteria:

|  |  |  |
| --- | --- | --- |
| **S.N** | **Particular** | **Points** |
| 1 | Attendance | 5 |
| 2 | Participation in learning activities | 5 |
| 3 | First assessment:  Article review/ book review/ open book test/ unit test etc. | 10 |
| 4 | Second assessment: Midterm test | 10 |
| 5 | Third assessment: Project work/case study/field/study/survey/seminar/workshop | 10 |
| **Total** | | **40** |

**5.2 External Examination (Final Examination) 60%**

Examination Section of Dean's office will conduct final examination at the end of semester.

|  |  |  |
| --- | --- | --- |
| **S.N** | **Types of question** | **Points** |
| 1 | Objective type question (multiple choice 10 x1) | 10 |
| 2 | Short answer questions (6 questions x 5 points) | 30 |
| 3 | Long answer questions (2 questions x 10 points) | 20 |
| **Total** | | **60** |

1. **Recommended Books/Materials**

Barclay, G.W. (1953) *Techniques of population analysis*. New work: Wiley **(Unit I-V)**.

Bhende, A. & Kanitkar, T. (2006). Principle of Population Studies, Delhi: Himalayan Publishing House. **(for Unit I-V)**.

CBS, (2014). *Population Monograph of Nepal*. Central Bureau of Statistics. Kathmandu, Nepal **(Unit I-V)**.

K.C., B. K., et.. al., (1997), Migration Situation in Nepal Kathmandu : CDPS **(Unit III)**.

PRB, (2014), *World Population Data Sheet* Washington D.C.: Population Reference Bureau. **(Unit I-V)**

PRB. (1998). *Population hand book*. Washington D.C.: Population Reference Bureau. **(Unit I-V)**

1. **References**

DHS, (2011), Nepal Demographic and Health Survey, Kathmandu

Maharjan, S. K. and Khanal S.P. (2069 B.S.) *Fundamentals of Population Education,* Kirtipur: Quest Publication.

Maharjan, R. K. et. al. (2069 B.S.) *Population studies, part-I& II*. Kirtipur: Sunlight Publication

**Course Title: Seminar in Issues of Population Education**

Course No.: Pop. Ed. 537 Nature of Course: Practical

Level: M.Ed. Credit Hours: 3

Semester: Third Teaching Hour: 80

|  |
| --- |
|  |

**1. Course Description**

This course has been designed to equip the students with in-depth knowledge on issues and challenges of population. It has been developed in order to enhance their skills for identifying related literature, writing seminar papers in concern issues and challenges and organize a seminar.

**2. General Objectives**

The general objectives of the course are as follows

* To make the students familiar with identification of resources materials in related issues and challenges.
* To acquaint the students with global population issues and challenges related to overgrowth of population, growth of aged population, environmental issues, adolescents of sexuality and health related issues.
* To help students develop skills in reviewing literature and peer review.
* To enable the students writing a seminar papers and presents in a seminar.
* To make the students develop skills in conducting a seminar.
* To enable the students supply comments on peer’s papers and presentation skills.
* To help the students edit the seminar paper after getting feedbacks

**3. Specific Objectives and Contents**

|  |  |
| --- | --- |
| **Specific Objectives** | **Units and Contents** |
| * Delineate the impacts of urban migration in different aspects like health service, transpiration, water supply, housing etc. * Discuss the issues of labor migration, force migration, and internal displacement. * Elucidate the situations and problems of slums, street children, human trafficking and suggest their management. | 1. **Social issues related to growth of** **population (10)**    1. Urban migration/Unmanaged migration    2. Labor migration    3. Force migration    4. Internal displacement    5. Slums    6. Street children and their rehabilitation    7. Human trafficking |
| * Assess the situation of senior population of developed and developing countries. * Discuss the social an economics issues of growth of senior population. * Express the social, psychological and health problems of seniors and suggest measures to manage their problems. * Identify the issues in utilization of health services among senior citizens. * Analyze the issues of children’s migration and its impact in citizens left behind. | 1. **Senior Citizen’s Population (8)**    1. Situation of elderly people in developed and developing countries    2. Social and economic issues of growing senior citizens    3. Health problems of senior citizens    4. Health service utilization among senior citizens    5. Children's migration and its impact on senior citizens left behind |
| * Analyze the changes of population and its impacts on environment especially on natural resources. * Delineate the causes of climate change, global warming and green house effects and their impacts. * Find out the issues of deterioration of drinking fresh water, natural disaster and deforestation and suggest their management | 1. **Population and environment (10)**    1. Changes in population and its impact on environment    2. Climate change    3. Global warming effects    4. Green house effects    5. Scarcity of drinkable water    6. Deforestation    7. Natural disaster |
| * Analyze the perception of people regarding adolescence sexuality education. * Discuss the impacts of risky sexual behavior, early marriage, force marriage, pre-marital and extra marital sex, commercial sex works and their impacts. * Explain the situation and problems of LGBIT and suggest their management. * Highlight the situation of abortion, impacts of induced abortion and their management. * Analyze the legal aspects on sexuality in different aspects like marriage, living together, sexual promiscuity, rape, etc. | 1. **Human Sexuality (10)**    1. Adolescence sexuality education    2. Risky sexual behaviour    3. Early marriage/Child marriage, force marriage    4. Pre-marital and extramarital sex and their impacts    5. Sexual exploitation/sexual harassment    6. LGBTI    7. Abortion and its impacts    8. Commercial sex work    9. Legal aspects on sexuality    10. Living together |
| * Analyze the situation of Health in All Policy in Nepal. * Highlight the issues of newly emerging reoccurring communicable and non communicable disease. * Discuss the issues of health policy. * Analyze the causes of failure of primary health care service. * Explore the problems MCH service in the country and suggest the measures to promote. * Express the unfriendly adolescent reproductive health service. | 1. **Health Service (10)**    1. Health in All Policy (HiAP)    2. Newly emerging and reoccurring communicable disease and non communicable diseases    3. Health policy    4. Failure of Primary Health Care    5. Risk of maternal and child health care    6. Unfriendly adolescent reproductive health service |

*Note: The figure in the parenthesis indicates the approximate periods for the perspective units.*

**4. Instructional Techniques**

**4.1 General Techniques**

* Discussion
* Brain storming
* Cooperative Learning
* Independent study
* Presentation

**4.2 Specific Instructional Techniques**

|  |  |
| --- | --- |
| **Duration** | **Activities** |
| 1st month | * Discussion and clarification of Issues * Discussion about sources of learning materials * Identifying concern issues in libraries and websites. |
| 2nd month | * Discussion of concept of seminar and its procedure * Clarification about ways of preparing seminar papers * Division of group and distribution of assignments |
| 3rd month | * Visiting libraries and websites to identify related materials * Collection of information * Reviewing documents * Writing papers |
| 4th month | * Printing papers and distribution to the peers for making comments * Organizing seminar * Presentation of paper by group or individual * Collecting feedbacks * Editing papers |
| 5th month | * Evaluation of seminar by papers by internal teachers * Viva by external examiner |

***(Note: All assignments done by the students should be signed by the internal teacher and these should be submitted to the external examiner)***

**5. Evaluation**

* 1. **Internal Evaluation (Practical) 40%**

Internal evaluation will be conducted by subject teachers based on following aspects:

|  |  |  |
| --- | --- | --- |
| **SN** | **Particular** | **Points** |
| 1 | Attendance | 5 |
| 2 | Participation in learning activities | 5 |
| 3 | First assessment /midterm examination | 15 |
| 4 | Second assessment/term paper | 15 |
| **Total** | | **40** |

**5.2 External Examination (Practical) 60%**

Examination Section, Office of the Dean, Faculty of Education will manage external/final examination at the end of semester.

|  |  |  |
| --- | --- | --- |
| **S.N** | **External/final examination** | **Points** |
| 1 | Quality of Seminar paper | 10 |
| 2 | Seminar Presentation | 20 |
| 3 | Review of students' assignments and records | 10 |
| 4 | Viva | 20 |
| **Total** | | **60** |

**Recommended Books/Materials**

1. **Reference Materials**

### [Air Pollution status nepal.pdf](https://www.google.com.np/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0CCUQFjAA&url=http%3A%2F%2Fdnetnepal.com%2Fswedish%2Fpdf%2FAir%2520Pollution%2520status%2520nepal.pdf&ei=fpCZVOTCGpGgugTxgIHoDg&usg=AFQjCNHKRG16G565wPVswxPNS8A4d2Nm2A&bvm=bv.82001339,d.dGY)

**A Life Less Innocent Street Children, Kathmandu , Nepal**

by Dave from The Longest Way Home ~ April 16th, 2012. Updated on June 20th, 2012. Published in:[Travel blog](http://www.thelongestwayhome.com/blog/) » [Nepal](http://www.thelongestwayhome.com/blog/nepal/).

Carrol, J. N. (2010). *Sexuality now: embracing diversity.* Belmont: Wadsworth Centage Learning cbs.gov.np/.../Chapter%2020%20%20Status%20of%20**Children**%20in%..

Centers for Disease Control and Prevention

Division of Global Migration and Quarantine

dnet**nepal**.com/swedish/pdf/**Air**%20**Pollution**%20**status**%20**nepal**.pdf

fepb.gov.np/.../Final%20Report%20-%20Submitted%20on%2028%20Ja...

<http://pub.iges.or.jp/modules/envirolib/upload/1508/attach/1ws-8-Joshi.pdf>

<http://www.geni.org/globalenergy/issues/global/population/index.shtml>

<http://www.thelongestwayhome.com/blog/nepal/street-children-in-kathmandu-nepal/>

Maharjan, S.K. (2070). *Human sexuality and reproductive health*. Kathmandu: Sunlight Publication.

Shrestha, D. R. (2008). *Reproductive health: national and international perspective.* Dhulikhel: Narayan Devi Shrestha.

<http://www.cdc.gov/immigrantrefugeehealth/pdf/bhutanese-health-profile.pdf> March 20, 2014,

Ministry of Population and Environment (2000). State of the Environment Report, Nepal

National Center for Emerging and Zoonotic Infectious Diseases

**Nepal Demographic Health Survey (2011). Kathmandu: MoHP**

nhrc.org.np/files/download/67938b3f9818700

**Shrestha B.** Air pollution status. Kathmandu: **Institute of medicine, Tribhuvan University**

Shrestha, D.R (2008). *Reproductive health: national and international perspectives.* Dhulikhel: Narayan Devi Shrestha

UNID (2014). Nepal human development report.

un.org.np/oneun/undaf/**slum**

**Course title**: **Applied Research in Population Education**

Course No. : Pop. Ed. 538 Nature of course: Theory

Level: M. Ed. Credit hours: 3

Semester: Third Teaching hours: 48

**1. Course Description**

This course is designed to acquaint the students with the knowledge of applied research in population education and to enable them to conduct research on different issues of population education. The course will make students able in construct and administer tools and analyze and interpret the data and prepare the report.

**2. General Objectives**

The general objectives of this course are as follows:

* To provide the students with the knowledge on historical trend of population education research.
* To familiarize the students with different types of variables and measurement scales.
* To develop knowledge and skills on literature review.
* To provide the in-depth knowledge in systematic review on data base
* To provide knowledge on sampling procedure in population research
* To provide knowledge and skills to construct and use of different research tools in population education research.
* To develop the skills in using basic statistics for research and analyze data.
* To make the students able in developing the research report.

**3. Specific Objectives and Contents**

|  |  |
| --- | --- |
| **Specific Objectives** | **Contents** |
| * Explain the trend of population education research * Describe the types of research used in the population education * Discuss the variables and measurement scales | **Unit I: Research in Population Education**  **(7)**  1.1 Historical trend of population education research  1.2 Review of research in population education  1.2.1 Descriptive method  1.2.2 Exploratory method  1.2.3 Analytical method  1.2.4. Longitudinal and cross sectional method  1.3 Demographic surveys  1.4 Variable and measurement scale |
| * Highlight the need of literature review. * Describe the guidelines of literature review. * Explain the systematic review on data base. * Use internet for literature. * Discuss the format of bibliography/references | **Unit II: Reviewing the Literature (6)**  2.1 Need of literature (theoretical and empirical) review.  2.2 Guidelines for literature review.  2.3 Systematic review on data base (Pubmed,  Biomed, Medline, Scopus, Science Direct  HINARI etc.)  2.4 Format of presenting the literature review  2.5 Format of presenting bibliography |
| * Calculate the sample size. * Explain the errors and biases in sampling. * Describe the commonly use sampling techniques in population education research | **Unit III: Sampling Procedure in population research (6)**  3.1 Determination of sample size in both quantitative and qualitative research  3.2 Errors and biases in sampling  3.3 Major sampling techniques used in population education research |
| * Develop and use of different research tools in population education * Discuss the validation of research tools * Explain the techniques of conducting interview and FDG | **Unit IV: Construction and use of different research tools in population education**  **(8)**  6.1 Development of questionnaire, Interview-schedule, Observation­ guidelines and Focus group discussion guidelines  6.2 Validation of research tools  6.3 Techniques of conducting interview and FGD  6.4 Simulation/mock practice |
| * Explain the techniques of data processing and management. * Calculate the x2, and z-test, t-test and f-test. * Handle the computer software for quantitative data analysis (MS-excel and SPSS). * Explain the qualitative data analysis techniques | **Unit V: Techniques of Data Management and Analysis (15)**  5.1 Data coding, entry and processing- including classification and tabulation  5.2 Use of computer software (MS-excel and SPSS) in data analysis: Defining variable, inputting data, saving data, data analysis framework-dummy tables  5.3 Uni-variate, bi-variate and multi-variate analysis  5.4 Calculation of x2 test, t-test, z-test and F- test.  5.5 Analysis of qualitative data/information: Thematic analysis, use of computer software (Atlas ti, Nvivo)  5.6 Mixed methods research in population education |
| * Prepare an abstract and executive summary * Explain the techniques of data interpretation * Describe how to write findings and draw conclusion * Prepare slides for presentation * Use OHP or multimedia for presentation | **Unit VI. Translating Research into Practice (6)**  6.1 Writing an abstract and summary  6.2 Techniques of data interpretation  6.3 findings and drawing conclusion  6.4 Preparation and presentation of findings through Multimedia |

*Note: The figure in the parenthesis indicate the approximate periods for the perspective units*

**4. Instructional Techniques**

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of proposed specific instructional techniques applicable to specific units or sub units or content.

* 1. **General Instructional Techniques**
* Lectures
* Document reviews
* Discussions
* Brain storming
* Presentations
* Guest lectures
* Collaborative learning
* Independent learning
* Project works

**4.2 Specific Instructional Techniques**

|  |  |
| --- | --- |
| **Unit** | **Examples of Instructional Techniques** |
| **I** | **Research in Population Education**   * The students will be asked to collect information about research and its importance in development and let them discuss and finalize in the group. Its copy will be distributed to students after editing. * The students will be asked to collect materials related to types of research and discuss in the group. * A guest lecture will be arranged to deliver topic regarding variables, and measurements scale |
| **II** | **Reviewing the Literature**   * The students will be given reading materials on some published articles to review them. They will also be asked to draw conclusions from the materials and submit as a home assignment. * The students will be given assignment to search literature in their interested topics though internet and discuss in the group |
| **III** | **Sampling Procedure in population research**   * The students will be asked to visit library or website to collect information on sampling and different formula to calculate sample size in quantitative research * They will be asked to prepare a list about major sampling techniques used in population education (both quantitative and qualitative) research |
| **IV** | **Construction and use of different research tools in population education**   * The students will be asked to develop a survey form/questionnaire to collect information on their interested topic. * They will be asked to collect information at least from twenty people to draw ideas about the research on their interest. |
| **VI** | **Techniques of Data Management and Analysis**   * The students will be asked to prepare code list of the collected information through survey tools * The student will be given assignment to analyze the data using suitable statistical tools and present in the class |
| **VII** | **Translating Research into Practice**   * Students will be asked to review research reports and discuss in group * Students will be assigned to prepare short report from the information collected by themselves * They will be asked to present their short report in the class |

**5. Evaluation**

* 1. **Internal Evaluation 40%**

Internal evaluation will be conducted by subject teachers based on following aspects:

|  |  |  |
| --- | --- | --- |
| **SN** | **Particular** | **Points** |
| 1 | Attendance | 5 |
| 2 | Participation in learning activities | 5 |
| 3 | First assessment: Article review/ book review/ open book test/ unit test etc | 10 |
| 4 | Second assessment: Project work/case study/field/study/survey/seminar/workshop | 10 |
| 5 | Third assessment: Paper pencil test | 10 |
| **Total** | | **40** |

**5.2 External Examination (Final Examination) 60%**

Examination Section, Office of the Dean, Faculty of Education will conduct final examination at the end of semester.

|  |  |  |
| --- | --- | --- |
| **S.N** | **Types of question** | **Points** |
| 1 | Objective type question (Multiple choice 10 x1 point) | 10 |
| 2 | Short answer questions (6 questions x 5 points) | 30 |
| 3 | Long answer questions (2 questions x 10 points) | 20 |
| **Total** | | **60** |

**6. Recommended Books and References**

**6.1 Recommended Books**

Best, J. W. &Kahn, J. V. (2004). *Research in Education.* New Delhi: Prentice Hall of India **(For units I-VII)**

Krishna Swami, O.R. (1993). *Methodology of research in social sciences.* Bombay: Himalaya Publishing House. **(For units- I, II, IV and V)**

Kothari, C.R.(2002). *Research methodology.* New Delhi: Viswa Prakashan. **(For units- I-VII)**

Pokharel, B.(2003). *Research methodology in economic.* Kathmandu: New Hira Books. **(For units II, VI and VII)**

Ranjit Kumar (1999). *Research methodology.* New Delhi: Sage Publication. **(For units II)**

Spiegel, N. R.(1980). *Theory and problems of probability and statistis.* New York: Mc.Graw Hill Book.**(For unit VII)**

Trochim, W. M. (2003). *Research methods knowledge base.* Newyork: Atomic Dog Publishing. **(For units III, IV, V and VI)**

Wolff, H. K. & Pant, P.R..(2007). *Social science research and thesis wirting.* Kathmandu: Buddha academy publication. **(For units III, IV, VII)**

**6.2 References**

Acharya, B. (2063). Research methodology and report writing. Kathmandu: National K. Book Centre.

Banskota, S. (2004). *Research methodology*. Kathmandu: New Hira Books.

Jnawali, D. (2008). Research: Principles and Techniques. Kathmandu: Vidyarthi Pustak Bhandar

Khanal, P. (2065). *Educational research methodology.* Kirtipur: Sunlight Publication

Khatri, B.B (2070). Research and Statistics in Population Educaiton. Kathmandu. Kriti Publication.

Maharjan, R.M. et al. (2065). *Population studies, Part II.* Kirtipur: Sunlight Publication.

Course title: **Teaching Chemistry**

Course No.: Chem. Ed. 535 Nature of the Course: Theoretical

Credit Hours: 3 Period/week: 3

Level: M.Ed. in Chemistry Education Teaching Hours: 48

Semester: Third

**1. Course Description**

The course emphasizeson giving knowledge ofChemistry Education with a focus on its aims, values and objectives of teaching Chemistry. Besides curriculum innovation, approaches and planning for Chemistry education, chemistry and society, equipment and chemicals, accidents and safety rules, chemistry laboratory, the chemistry teacher, misconception regarding teaching chemistry, researches in teaching chemistry and evaluation in Chemistry education are the other important areas of Teaching Chemistry.

**2. General Objectives**

The general objectives of this course are as follows:

* To provide in-depth knowledge ofteaching chemistry education.
* To elaborate the aims, values, objectives and scope of teaching chemistry.
* To make students familiar with approaches and planning for teaching chemistry, curriculum innovation and chemistry teacher education.
* To acquaint the students with in-depth knowledge of chemistry laboratories and misconceptions about teaching chemistry.
* To develop knowledge and skills in teaching chemistry through research and evaluation.

3**. Course Outline**

|  |  |
| --- | --- |
| **Specific Objectives** | **Content** |
| * Elaborate the concept of Chemistry and Chemistry education and its importance. * Differentiate between the chemistry and chemistry education. * List the importance of Chemistry and Chemistry education in our daily life. * Explain the development of chemistry and chemistry education. * Describe chemistry and society with special emphasis on environment industry, agriculture, health and kitchen. * Explain the modern trends in chemistry education. * Describe chemistry education in Nepal present status and reform needs. * Write a paper onpresent status and reform needs of Chemistry education in Nepal. | **Unit-1 Chemistry Education (4)**   * 1. Chemistry, Chemistry education and its importance   2. Development of Chemistry and Chemistry education   3. Chemistry and Society   4. Modern trends in Chemistry education   5. Chemistry education in Nepal:Present status and reform needs |
| * Elaborate the scope of teaching Chemistry in the context of Nepal. * Explain the aims and value of teaching Chemistry. * Differentiate between educational and instructional objectives of Chemistry education. * Describe the objective of Chemistry education in school as well as +2, B.Ed. and M.Ed. level. * Elaborate the Blooms taxonomy of educational objectives and its imitation. * Establish the relation between new taxonomy and blooms taxonomy. * Develop objective and subjective types of question in different domain of new and old taxonomy in Chemistry education. * Analyze critically aims and objective of school science in Nepal and other SAARC countries. | **Unit -2 Aims, Values and objectives of teaching Chemistry (8)**  2.1 Introduction  2.2 Scope of teaching Chemistry  2.3 Aims and values of teaching Chemistry 2.4 Educational and Instructional objectives of teaching Chemistry  2.5 Objectives of teaching Chemistry  2.6 Blooms taxonomy and its limitation  2.8 Relationship between Blooms taxonomy and new taxonomy  2.9Critical analysis of aims and objectives of school science in Nepal and SAARC countries. |
| * List the types and characteristic of the various teaching methods in teaching Chemistry. * Select the appropriate methods for teaching Chemistry on the basis of topics. * Elaborate the concept and different approaches of teaching Chemistry on the basis of Inductive and deductive approach, Realistic-theoretical approach, Addresses exhibition approach, Process and product approach, Research approach, Knowledge approach, Trial approach, Discovering approach, Investigative approach, Multimedia package approach, Laboratory approach, Modular approach, Learner-guide approach, and Atmospheric approach in Chemistry education. * Describe the technique of learning Chemistry on the basis of Sub-skills, Learning process, Memorizing, Reading skill, Note taking, Communication skill, Problem solving skill, Time management, Learning environment, Preparing for test and Test taking and Relax. * Establish the relation among approach method and technique. * Describe the meaning significance and steps of lesson planning * Explain the Herbartion approach and specimen approach of lesson planning on the basis of their lesson plan format * Elaborate the blooms evaluation approach in lesson planning. * Explain the criteria for the evaluation of the lesson plan. * Develop lesson plan on the basis of investigative, discovery and laboratory approach in Chemistry topics. * Compare and construct the different format of lesson planning and our format of lesson planning in Chemistry education. * Compare the lesson plan format of Nepal with SAARC countries. | **Unit -3 Approaches and Planning for Teaching Chemistry (8)**  3.1 Introduction  3.2 Teaching methods and characteristics of various teaching methods in teaching Chemistry  3.3Selection of an appropriate teaching methods  3.4 Different approaches of teaching chemistry3.5 Techniques of learning Chemistry  3.6 Relation between approaches, methods and techniques of teaching chemistry  3.7 Concept , significance and steps of lesson plan in teaching chemistry  3.8 Approaches of lesson planning  3.9 Blooms evaluation approach in lesson planning  3.10 Criteria for the evaluation of lesson plan |
| * Elaborate curriculum innovation in teaching Chemistry. * Explain Chemistry in a broader context in terms of component of physical science, component of general science and component of integrated science * Explain the curriculum innovation of chemistry in school level * Explain innovative approaches in school Chemistry curriculum in the USA and UK. * Analyze critically innovation Chemistry curriculum project such as CBA, CHEM study, UNESCO pilot project in Asian countries, Chemistry project in Malaysia, IPST in Thailand, Canada ALCHEM project and USA IAC programs. * Compare the Chemistry curriculum of Nepal with SAARC countries. * Analyze critically chemistry curriculum of +2level, bachelor level and Masterlevel in Nepal, India, Canada, UK, and USA. | **Unit -4 Curriculum Innovation in Teaching Chemistry (8)**  4.1 Introduction  4.2 Chemistry curriculum in a broader context  4.3 Curriculum innovation of chemistry in school level  4.4 Innovative approaches in school chemistry curriculum in USA and UK.  4.5 Critical analysis of innovative Chemistry curriculum  4.6 Comparison of chemistry curriculum ofNepal withSAARC countries.  4.7 Chemistry School Science curriculum,+2 level, bachelor level and M.Ed. level of chemistrycurriculum in Nepal, India, Canada, UK, and USA. |
| * Elaborate the concept of chemistry teacher education * Discuss the professional development of teacher on the basis of teaching skills such as demonstration, questioning, Illustration, explaining, stimulus variation, blackboard writing, process of developing improvised materials and theirs uses of effective Chemistry laboratory skill. * Describe quality and responsibilities of Chemistry teacher. * Explain the management of Chemistry class in and out of the school * Discuss the different techniques of assessment in students. * Describe the method of assessing Chemistry students on the basis of their function, agency of assessment, the substance of assessment specification and project work. * Write a report using the results of student’s assessment. * Elaborate the training of teacher in assessment techniques. * Discuss the need and the ways of Chemistry teacher training * Elaborate innovative approaches in school Chemistry teaching. | **Unit -5 Chemistry Teacher Education (4)**  5.1 Introduction  5.2 Professional development of Chemistry teacher  5.3 Responsibilities and Qualities of a Chemistry teacher  5.4Management of Chemistry class in and out of school  5.5 Assessment of Chemistry students  5.6 Chemistry teacher training  5.7 Innovative approaches in school Chemistry teaching |
| * Describe the various changing face of Chemistry and Chemistry education * Investigate the challenging situation of Chemistry and Chemistry education. * Explore the student conception about Chemistry in +2 levels. * Elaborate the concept and alternative conception * Define and explain misconception. * Identify the area of misconception in chemistry of selected topics of Bachelor level such as Atomic structure, Chemical bonding, Oxidation& reduction, Valency and Mole.Concept etc. * Establish the relation between internal and external representation of misconceptions. * Describe the implication of misconception in teaching Chemistry * Explain the pedagogic learning impediments. * Analyze pedagogic learning of some selected topics, Atomic structure, Carbon and its compound, Valency, Oxidation and reduction, Ionic equilibrium and Volumetric analysis of +2 and B.Ed level. * Explain the process of developing teacher as learning doctors. | **Unit -6 Misconception in Teaching Chemistry (5)**  6.1 Changing face of Chemistry  6.2 Challenging situation of Chemistry.  6.3 Student conception about Chemistry  6.4 Concept and alternative conception  6.5 Misconception  6.6 Misconception in Chemistry  6.7 Relationship between internal and external representation of misconceptions  6.8 Implication of misconception in Chemistry education  6.9 Pedagogic learning impediments  6.10 Developing teacher as a learning doctor |
| * Describe the concept, importance and criticism of empirical research. * Explain the implication of empirical research in Chemistry education. * Apply the investigative and problem solving method in Chemistry research. * Investigate the area of utilization of Chemistry research in Nepal. * Explain way of structuring chemical knowledge and pattern recognition of research. * Describe the current research issues in chemical education on the basis of teacher’s perspective, Knowledge of chemistry, teacher need, Relevant / interest of Chemistry teaching, Relation between practical and theoretical learning and teacher as a researcher in their school and campuses. | **Unit – 7Review of Researches in Teaching Chemistry (5)**  7.1Empirical Research  7.2 implication of Empirical Research in Chemistry education.  7.3 Investigative and Problem solving method in Chemistry Research.  7.4 Current research in chemistry education  7.5 Utilization of Chemistry Research in Nepal.  7.6 Structuring of chemical knowledge in research |
| * Analyze critically the SLC science questions, +2 level question, bachelor level question and M. Ed. Level questions in Chemistry education. * Prepare various test items in Chemistry. * Explain the attributes of good Chemistry test items. * Describe the process of analysis and interpretation of Chemistry scores. * Analyze critically the present system of S.L.C, +2 level, bachelor level and M. Ed. Level examinations. * Perform application of item analysis in chemistry education. * Construct the scholastic achievement test ( SAT) for a unit test * Explain the meaning and characteristics of good achievement test. | **Unit -8 Evaluation in Teaching Chemistry(6)**  8.1 Critical analysis of Chemistry questions  8.2 Analysis and interpretation of Chemistry score  8.3Application of Item analysis in Chemistry education  8.4 Scholastic achievement test (SAT)  8.5 Attributes of good achievement test |

**4. Instructional Techniques**

* Discussion (Discussion among peers, discussion with teachers and with the experts)
* Demonstration method and power point presentation
* Inquiry method
* Project method
* Cooperative and collaborative methods
* Paper writing and presentation in the classrooms
* Home assignments and class participation
* Internet (web) surfing
* Report writing and presentation
* Team teaching and feedback session
* Survey method

**5. Evaluation**

**5.1 Internal Evaluation**

Forty percent of total marks are allocated to internal evaluation. Internal evaluation will be conducted by course teacher based on the following activities:

|  |  |  |
| --- | --- | --- |
| 1. | Attendance | 5 points |
| 2. | Classroom activities | 5 points |
| 3. | First assignment | 10 points |
| 4. | Second assignment (Term Exam) | 10 points |
| 5. | Third assignment/ Project Work | 10 points |
| Total |  | 40 points |

**5.2 External Evaluation (Final Examination)**

Examination Division of the office of the Dean, Faculty of Education will conduct final examination at the end of semester. Sixty percent of the marks are allocated to the final examination. The type and number of questions to be included in the final examination are as follows:

|  |  |  |
| --- | --- | --- |
| 1. | Objective type question(Multiple choice: 10 question x 1 point) | 10 points |
| 2. | Short answer questions (6 questions x 5 points) | 30 points |
| 3. | Long answer questions (2 question x 10 points) | 20 points |
| Total |  | 60 points |

***Note: The marking system will be changed to CGPA system as per the rule and regulation of the Academic council.***

**Recommended Books**

Anmad, S. (2007).*Teacher’s hand Book of Sscience*, New Delhi: Anmol Publication PVT. LTD.

Aryal, P.N., &Niure, D. (2010).*Curriculum Planning and Practice*, Kathmandu: Intellactual Book place.

Bhatnagar A.B.&Bhatnagar S.S. (2004).*Teaching of Science*, meerut: suryapublicaataion.

Davar, M. (2012).*Teaching of Science,* New Delhi: PHI Learning Private Limited.

Gupta, V.K.(1995). *Teaching and learning in Science Technology*, New Delhi: Vikas Publishing House.

Guy, K. (nd……). laboratory Organization and Administration, Mac Millan.

Herron, T.D.,Cente L., Ward R., &Srinivasam V. (1997). *Problem Associated Concept Analysis Science Education*. 6, (2) 185-199.

Jornal of Chemical Education

Jurgen, S.H. (1994). *Problem Solving and Misconcepting in Chemistry*, University of Dostmund.

Kalra,R. M.,& Gupta, V. (2012). *Teaching of Science: A Modern Approach*. New Delhi: PHI Learning Pvt. Ltd.

Kumar, A. (1995). *Teaching of physical Sciences*, New Delhi: Anmol Publication PVT. LTD.

Pandit, C.N. (2067).*Modern Science Teaching*, Kathmandu: BidurPrakashan.

Piaget, J. (1972). *The Principle of Genetic Epistemology****,*** (W. Mays Trans.) (Unit VII)

Mittal, A. (2004).*Teaching of Chemistry*, New Delhi: APH Publishing corporation.

Mohan, R. (2010). *Innovative Science Teaching,* New Delhi: PHI learning private limited.

School Chemistry Curriculum in USA, UK, India & Canada.

School Science Curriculum, CDC: Government of Nepal

Sharma, R. C. (2010). *Modern Science Teaching****,*** New Delhi: DhanpathRai Publishing Company. (Unit VIII)

Singh, M.P. (2004). *Modern Teaching of Chemistry*, New Delhi: Anmol publication PVT. LTD.

Sood, J.K.(1989). *New Direction in Science Teaching*, Chandigrah: Kohli Publishers.-

Soti, S.C. (2006). *Contemporary Science Teaching*, New Delhi: Surjet Publication.

Vijayan, K.K.(2008). *Method for Quality Education*, Hyderabad: Neelkamal PVT. LTD.

Waddington Ed.D.J.,(1984). *Teaching School Chemistry,* UNESCO.

Yadav, K. (1993). *Teaching of life Science*, New Delhi: Anmol Publication PVT. LTD.

Yadav, M. S. (2004). *Teaching of Chemistry****.*** New Delhi: Anmol Publication. (Unit I, III, IV, V & VI)

**Course title:** **Advanced Physical Chemistry**

**Course No.:** Chem. Ed. 536 **Nature of the Course:** Theory + Practical

**Credit Hours:** 3 (2 T + 1 P) **Period/week:** 2(T) + 3Pds/day/week/gr. (P)

**Level:** M.Ed. in Chemistry Education **Teaching Hours:** 80 (32 T + 48 P)

**Semester:** Third **Time/period:** 60 Minutes

1. **Course Description**

This course aims to enhance the advanced theoretical and practical knowledge in the area of physical chemistry. It is divided into two parts; the first part is theoretical portion and includes the four units such as Electrochemistry, Thermodynamics, Surface chemistry and Solid state chemistry. The Second part is a practical portion that covers the laboratory works on the topics Adsorption reaction, Potentiometric Titration, PH titration, Electrochemistry and Thermochemistry

1. **General Objectives**

The general objectives of this course are as follows:

* To enable students in dealing with different concepts of electrochemistry
* To make students familiar with entropy and laws and equations related to energy change
* To familiarize the students with the specific and advanced knowledge of solid state chemistry.
* To acquaint students with the different laws and aspects of surface chemistry, adsorption, Freundlich and Langmuir adsorption isotherm
* To perform the practical activities related to Adsorption reaction, PH  titration, potentiometry, electrochemistry, thermochemistry

1. **Specific Objectives and Contents**

**Part I: Theoretical portion Credit hour: 2**

|  |  |
| --- | --- |
| **Specific Objectives** | **Contents** |
| * Explain the thermodynamics and emf measurement * Derive the relationship between emf and free energy * Derive the relation between ∆H and ∆S from the emf data * Derive the Nernst equation for determining the emf * Determine equilibirium constants by using standard potentials * Describe the structure and use of Amalgam electrodes, oxidation-reduction electrode , ,quinhydrone electrode and Ag/ Ag+ ion electrode * Explain chemical cell with and without transference * ExplainConcentration cell with and without transference * Describe liquid junction potential for chemical cell and concentration cell * Discuss the determination of PH by use of potentiometer * Describe potentiometric titration of acid and base * Explain the determination of solubility product of sparingly soluble salt by emf measurement * Explain the basic principles, uses and limitations of voltametry, coulometry and electrogravity * Describe polarography, pulse and differential pulse polarography | **Unit I: Electrochemistry 10**  1.1 Thermodynamics and emf  1.2.1 Relation between emf and free energy  1.3 Thermodynamics of electrode potential  1.4 Nernst Equation  1.5 Standard potential and equilibrium constant  1.6 Classification of electrodes:  1.6.1 Amalgam electrodes  1.6.2 Oxidation- reduction electrodes  1.6.3 Quinhydrone electrode  1.6.4 Ag/Ag+ ion electrode  1.7 Chemical cell with and without transference  1.8 Concentration cell with and without transference  1.9 Liquid Junction potential  1.10 Solubility products and emf  1.11 Potentiometric determination of PH  1.12 Potentiometric acid- base titration  1.13 Basic principles of Voltametry  1.14 DC polarography: A brief account of AC, Pulse and differential pulse polarography.  1.15 Coulometry and coulometric titration: basic principle, use and limitations  1.16 Electrogravimetry: basic principles, use and limitations  Solve numerical problems on the above mentioned topics |
| * Explain Joule and Thomson effect * Derive entropy from carnot cycle * Discuss the dependence of entropy on variables of a system * Deduce Gibb’s Helmholtz free energy change * Explain the properties and significance of Gibb’s free energy * Derive Vant Hoff isotherm relation * Derive the relation for Vant Hoff isochore * Discuss the thermodynamic properties of solution * Derive Gibb’s Duhen equation * Describe the criterion of equilibrium. * Explain the physical equilibrium involving phase transitions * Deduce the Clausius- Clapeyron equation * Discuss the classical concept of distribution of energy * Explain Maxwell-Boltzmann distribution law and its application * Explain the fugacity and its determination * Describe the chemical equilibrium and thermodynamic treatment of equilibrium law | **Unit II: Thermodynamics 10**  2.1 Joule- Thomson effect  2.2 Entropy and its derivation from carnot’s cycle  2.3 Dependence of entropy on variables of a system  2.4 Entropy of a mixture of an ideal gas  2.5 Helmholtz and Gibb’s free energy  2.6 Properties and significance of Gibb’s free energy  2.7 Vant Hoff isotherms  2.8 Vant Hoff isochore  2.9 Thermodynamic properties of solution  2.10 Gibb’s Duhen Equation  2.11Physical equilibrium involving Phase Transitions ( Clapeyron Equation)  2.12 The Clausius- Clapeyron Equation  2.13 Classicalconcept of distribution of energy  2.14 Maxwell- Boltzmann distribution law and its application  2.15 Fugacity and its determination  2.16 Chemical equilibrium and thermodynamic treatment of equilibrium law  Solve numerical problems on the above mentioned topics |
| * Differentiate between physical and chemical adsorption * Explain Adsorption isotherms * Explain Freundlich adsorption isotherm * Derive the relation for Langmuir adsorption isotherms * Explain BET equatiuon * Determine the surface area of the adsorbent * Describe the catalysis of gaseous reaction by solid surfaces | **Unit III: Surface chemistry 4**  3.1 Adsorption and its types  3.2 Adsorption isotherms  3.3 Freundlich isotherms  3.4 Derivation of Langmuir adsorption isotherms  3.5 BET equation  3.6 Determination of surface area of adsorbents  3.7 Catalysis of gaseous reaction by solid surfaces |
| * Explain the structure of crystalline solid * Explain the polymorphism and transition temperature of solids * Describe the heat capacity of solids * Calculate the packing fraction and number of ions in different types of cubic crystals * Write the assumptions and drawbacks of classical free electron theory * Explain the electrical conductivity of solids by utilizing Ohm’s law * Calculate the Widermann- Franz ratio in crystalline solids * Discuss the stiochiometric and non stiochiometric defects in crystals * Describe the Miller indices and interplanar distance in cubic crystals * Derive Bragg’s law * Explain the X- ray diffraction phenomenon in determining the structure of solids | **Unit IV: Solid state chemistry 8**  4.1 Crystal system and crystal structure  4.2 Polymorphism and transition temperature  4.3 Packing fraction and number of ions in Simple cubic, Body centre cubic and Face centre cubic  4.4 Classical free electron theory and its drawbacks  4.5 Electrical conductivity and Ohm’s law  4.6 Heat capacity of solids  4.7 Conduction electrons  4.8 Widermann- Franz ratio  4.9 Electrical properties of solid  4.10 Defects in crystals Stiochiometric and non stiochiometric defects (qualitative idea only)  4.11 Miller indices  4.12 interplanar distance in cubic crystal  4.13 Bragg’s law  4.14 X- ray diffraction for determining the structure of solids |

**Part II: Practical portion Credit hour: 1**

|  |  |
| --- | --- |
| **Specific Objectives** | **Contents** |
| * Analyze the adsorption of acetic acid on charcoal and examine the validity of Freundlich and Langmuir’s adsorption isotherms * Determine the specific surface area of given activated charcoal by studying the adsorption of acetic acid and also determine the cross sectional area of oxalic acid by studying its adsorption onto activated charcoal | **Adsorption reaction 10**  Adsorption of acetic acid on charcoal  Determination of specific surface area of activated charcoal and oxalic acid |
| * Verify Nernst equation by determining the standard electrode potential of Ag/ Ag+ electrode at different concentrations * Determine the concentration and dissociation constant of acetic acid by potentiometric titration with sodium hydroxide using quinhydrone electrode. * Determine the solubility and solubility product of a sparingly soluble salt (AgCl) in water * Find out the strength of mixture of halide salt solution potentiometrically | **Potentiometric Titration 20**  Acid- base titration  Precipitation titration  Determination of Electrode potential |
| * Determine the strength of acid mixture solution by titrating it against alkali. * Prepare acidic buffer solution and determine the PH by using glass electrode. * Prepare basic buffer solution and determine the PH by using quinhydrone electrode. | **PH Titration 15**  acid-base titration  buffer solution |
| * Determine the transition temperature of Glauber’s salt by thermometric method | **Thermochemistry 3**  Transition temperature |

**4.0 Instructional techniques**

The instructional techniques for this course are divided in to two groups .The first group consist of the general instructional techniques applicable to most of the units .The second group consist of specific instructional techniques applicable to specific units.

**4.1 General instructional techniques:**

Lecture Method Discussion method

Demonstration method and power point presentation Project method

Collaborative method Individual laboratory work

**4.2 Specific Instructional Techniques/Activities**

* All units requires lecture, discussion. Power point presentation, project and collaborative methods of instruction
* Electro chemistry, surface chemistry individual practical activities.

**5. Evaluation Schemes (Internal and External assessment)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Nature of the Course** | **Internal assessment** | **External/ Semester Examination** | **Total marks** |
| Theory cum Practical | 40% | 60% | 100% |

***Note: Students must pass separately in internal assessment, external practical exam / viva and or semester examination.***

**5.1. Internal Evaluation**

**a. Theory + Practical: 40%**

Internal evaluation will be conducted by course teacher based on following activities:

1. Attendance 5 points
2. Participation in learning activities 5 points
3. First assignment 10 points
4. Second assignment exam (term exam) 10 points
5. Third Practical Exam / Project Work 10 points

|  |
| --- |
| Total 40 points |

**5.2. a. Theory: External Examination (Full Marks - 40)**

|  |
| --- |
| Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of semester. |

**Nature of the Question and marks allocated for Theory External Examination:**

|  |  |  |  |
| --- | --- | --- | --- |
| Paper | Nature of the Question | | Total |
| Full Paper 40% | Objective | Subjective |
| 10 Q x 1 mark = 10 | 6 Q x 5 marks = 30 | 40 |

***Note: All questions are compulsory.***

**b. Practical External Examination (Full Marks – 20)**

1. Practical Examination **15**

2. Construction of teaching learning resources using computer

skills/models and charts construction/ collection of materials/

Project work report/Record book **5**

***Note: The marking system will be changed to CGPA system as per the rule and regulation of the Academic council.***

**Recommended Text books for Theory**

Bahl,B.S.(2008).*Essential of physical chemistry*, New Delhi: S Chand & Co.(**For all units**)

Maron, S.H & Prutton,C.F.(1972)*Principles of physical chemistry(fourth edition):*New Delhi Oxford and IBH Co. pvt. Ltd.( **For all units**)

**Reference Books**

Engel,T. & Reid, P. (2013), Pearson

Glasstone,S. & Lewis,D.Elements of physical chemistry.Mc Millan and Co.Ltd.

Gurtu,J.N. & Gurtu,A.(2006).*Advance physical chemistry*. Meerut: Pragati Prakashan

Kapoor (1992). *Textbook of Physical chemistry*, India: Mc Milla, India Ltd.

Madan,R.L. & Tuli,G.D.(2001) *Physical chemistry*. New Delhi: S Chand and Co. Ltd.

Nagig,S. & Anand,S.C.A.(1991). *Text book of physical chemistry*.Wiley Eastern Ltd.

P.Atkins & J.de paula,(2010) *Physical chemistry* .(Ninth edition). Oxford university press.

Silbey,J.Robert,A. & Barendi,G.M.(2006).*Physical Chemistry*.New Delhi: Wiley India Pvt. Ltd.

Pillai,S.O. (1994). *Solid state chemistry*.Wiley Eastern Pvt. Ltd.

Vemulapalli,G. K. Physical Chemistry(1997). *Physical Chemistry.* New Delhi: Prentice Hall of India

**Text Books for practical**

Ghimire,K.N. & Bohara,K.P.(2008).*University Experimental Physical Chemistry*.Kathmandu:Quest Publication

Khadka,D.B.(2009).*Practical Physical Chemistry*.Kathmandu: Sunlight Publication

Vishwanathan,B.&Raghavan,P.S.(2005).*Practical Physical Chemistry.*New Delhi: Viva Books Pvt. Ltd.

|  |  |
| --- | --- |
| Course Title: **Research and Statistics** |  |

Course No.: Chem. Ed. 537 Nature of the Course: Theoretical

Period/week: 3 Credit hours: 3

Level: M.Ed. Teaching hours: 48

Semester: Fourth

1. **Course Description**

This course is designed to acquaint the students with the knowledge and skills of research and statistics. The main aim of the course is to widen the horizon of knowledge and understanding of students with a view to make them able to identify significant problems of research and statistics. It gives special emphasis on type of research methods, theories and philosophy in research, various approaches in research, statistical analysis for quantitative date, development of hypothesis and tests, inferential statistics, qualitative data analysis procedures and methods and procedures of reviewing books and arties.

**2. General Objectives**

The objectives of this course are as follows:

* To provide students with in-depth knowledge of research and statistics.
* To provide students with an opportunity to understand the different types of research methods.
* To make the students familiar with scientific methods and science revolution.
* To assist the students to understandand the application of theories and philosophy in research.
* To acquaint the students with various approaches of research.
* To enable the students to analyses various data by applying statistical techniques.
* To provide the students with hand-on experience in the use of SPSS for calculation and visualizing the data.
* To enable the students to apply hypothesis in research in normal distribution, kurtosis, skewness and different types of tests.
* To make students familiar with the qualitative data analysis process.
* To develop knowledge and skills for proposal and report writing, and book and article reviewing using appropriate methods and procedures.

1. **Specific Objectives and Contents**

|  |  |
| --- | --- |
| **Specific Objectives** | **Contents** |
| * Introduce the methods of research in science * Classify different types of methods of research in science * Elaborate the inquiry methods in research * Differentiate between scientific methods and research methods * Elaborate the meaning of inductionism and deductionism in terms of research in science * Analyze the scientific revolution on | **Unit I:** **Research Method and Philosophy 10**  1.1 Introduction of research method in science  1.2 Types of research and inquiry methods.  1.3 Concept of scientific methods and research methods.  1.4 Scientific method  1.4.1 Induction and deduction  1.4.2 The scientific revolution  1.5 Oriental and western philosophy in science research traditions |
| * the basis of Kuhn's revolution theory and relativism in science. * Appraise critically the oriental and western philosophy of science research traditions * Apply research methodology on the basis of epistemology, ontology, axiology and phenomenology of science education research work | 1.6 Epistemology, ontology, axiology and phenomenology in science education research |
| * Apply quantitative and qualitative method in science education research. * Explain the hermeneutics research methodology * Elaborate the case study research methodology in science education * Describe the various types of experimental methodology in research * Find out the area of applying comparative and correlation methodology in research * Elaborate the decolonizing methodology in research * Classify the mixed method in research * Explain qualitative research methodology * Apply the research methodology on the basis of multi-method approach Explain the role of theories in science research specially focusing on sociological and constructivist theory with an examples | **Unit II: Theoretical Approaches in research 11**   1. Quantitative and qualitative research in science education 2. Hermeneutics research methodology 3. Case study in science research methodology in science 4. Experimental research methodology 5. Comparative and corelation methodology 6. Decolonizing methodology 7. Mixed method research 8. Qualitative research methodology: multi-method approach 9. Concepts and role of theories in science research |
| * Introduce statistical analysis and its importance in science education research * Exemplify number and frequency distribution in science research * Derive the formula for determining the sample size * Describe the nominal, ordinal, interval and ratio scale with examples * Calculate mean, median, mode, quartile, percentile and deciles with various examples and apply it in science education research * Calculate measure of dispersion on the basis of their range, average and standard deviation in various data and apply in science education research * Apply correlation and regression in science research and calculate correlation coefficient and simple regression in various data * Relate multiple and partial correlation coefficient * Describe the skeweness and kurtosis with various examples * Use SPPS for data entry, displaying data in frequency, cross and preparing tabulations and figure. | **Unit III: An Overview of Descriptive Statistics and its Application 8**   1. Introduction 2. Frequency distribution 3. Basic methods of sampling 4. Measurement of Scale 5. Measure of central tendency 6. Measure of dispersion 7. Correlation and regression 8. Relationship between multiple and partial correlation cofficient 9. Skewness and kurtosis 10. Descriptive analysis of data using SPSS |
| * Develop ................. hypothesis and find out their level of significance and decision making rule * Apply parametric and non-parametric test in research * Draw normal distribution curve in various data and apply hypothesis testing * Apply test of significance with calculated data * Apply t-test, z-test, f-test, and chi-square test in research * Calculate t, z, f and chi-square test in various data (Calculation and application must be necessary) * Describe the sampling distribution based on random sample, mean and sample variance, standard error, t and f distribution, and central limit theorem and law of large number * Explain the steps and techniques of one way and two way analysis of variance. * Use SPSS in analyzing data and inferential statistics | **Unit IV: Inferential Statistics 8**   1. Null hypothesis, level of significance, decision rule 2. Parametric and non-parametric test 3. Normal distribution 4. Test of significance 5. Test of hypothesis 6. Sampling distribution 7. Analysis of variance 8. Some numerical calculation 9. Use of SPSS in inferential statistics |
| * Explain qualitative data analysis process * Explain approaches of qualitative analysis on the basis of thematic inductive domain * Describe the steps of qualitative data analysis procedure * Demonstrate skills required for qualitative data analysis * Apply qualitative data analysis for a qualitative data * Elaborate the importance of   qualitative data analysis in research   * Apply qualitative data software: Atlas /ti and Nvivo | **Unit V: Qualitative data analysis 5**   1. Concept of qualitative data analysis 2. Approaches of qualitative data analysis 3. Steps in qualitative data analysis 4. Importance of qualitative data analysis in research 5. Qualitative data analysis software |
| * Outline the format of research proposal and requirements for research report * Develop the research proposal in related to science education * Describe the components of research proposal and report writing * Develop the format of book and article review * Review the selected science book and science related article (at least one) on the basis of their format. * Apply techniques and citation of APA style for developing research work | **Unit VI: Review and development of research work 6**   1. Proposal development in science education 2. Report writing techniques 3. Book and article review 4. Technique and citation of APA style in science education. |

***Note:*** *Figure in the parentheses indicates the approximate teaching hours attracted to respective unit*

1. **Instructional Techniques**

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

**4.1 Instructional Techniques**

* Lecture method
* Discussion (Discussion among peers, discussion with teachers and with the experts)
* Demonstration method and power point presentation
* Inquiry method
* Project method
* Cooperative and collaborative methods
* Paper writing and presentation in the classrooms
* Home assignments and class presentation and participation
* Internet (web) surfing
* Report writing and presentation
* Team teaching and feedback session
* Individual laboratory work
* Group activities
* Field work
  1. **Specific Instructional Techniques/Activities**
* All the units require library study, project work preparation, cooperative and collaborative methods of learning, problem solving method and power-point presentation.
* The teachers and students may decide the project work related to the course work

1. **Evaluation (Internal Assessment and External Assessment):**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Nature of course** | **Internal Assessment** | **External Practical Exam/Viva** | **Semester Examination** | **Total Marks** |
| Theory | 40% | - | 60% | 100% |

***Note****: Students must pass separately in internal assessment and semester examination.*

* 1. **Evaluation for Part I ( Theory)**

1. **Internal Evaluation 40%**

Internal evaluation will be conducted by course teacher based on following criteria :

1. Attendance 5 points
2. Participation in learning activities 5 points
3. First assignment ( written assignment) 10 points
4. Second assignment ( project work with presentation ) 10 points
5. Third assignment/ Exam 10 points

|  |
| --- |
| Total 40 points |
|  |

|  |
| --- |
|  |

**b. External Evaluation (Final Examination) 60%**

|  |
| --- |
| Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of semester.   1. Objective type question (Multiple choice questions10x1mark) 10 points 2. Short answer questions (6 questions x 5 marks) 30 points 3. Long answer questions (2 questions x 10 marks) 20 points |
| Total 60 points |

**6. Recommended Books and Reference**

**Recommended Books**

Best, W. & Kahn V. (2000). *Research in Education*. (7th Edition) New Delhi Prentice Hall of India Pvt. Ltd.. (For all units )

Denzin, N. K. & Lincoln, Y.S. (1998). *Strategies of Qualitative inquire*, Thousand Oaks: Sage Publication. (For unit 1,II and III)

Guba, E. & Lincoln, S. Y. (1998). *The Landscape of qualitative research: Theories and Issues,* Thousand Oaks: Sage Publication. (For unit 1,and II)

Ladyman, J. (2002).*Understanding Philosophy of Science*. Routledge, Taylor and Fransis group, London and New York (for unit I and II)

**References books**

Ameican Psyhological Association (2010). *Publication Manual of American Psychological Association* (6th edition). Washington DC: APA. (For unit VI)

Bordens, K.S & Abbott, B.B. (2011). *Research Design and Methods*. A Process Approach, 8 edition, Indiana University.

Cohen, L., Marin, L., Marin, K*. (7th edition ),:*, New York: *By Routledge 270 Madison Ave* 10016

Gupta, S. C. (1990). *Fundamentals of statistics* (3rd edition) New Delhi, Vikash Publishing House Pvt. Ltd. (For unit III and IV)

Joshi, P. R (2010). *Research Methodology* (4th edition). Kathmandu, Nepal. Buddha Academic Publishers and Distributors Pvt. Ltd.. (For unit I, II, V)

Kothari, C. R. (1990). *Quantitative Techniques* (3rd edition). New Delhi, Vikash Publishing House Pvt. Ltd., (For unit I, II)

McMahon, et.al,(2006). *Assessment in Science; Practical Experiences and Experiments.* National Association in Research in Science Education, NAST Press.(For unit III)

Pandit, R.P. (2011). *Introduction to Statistics*, Kathmandu: Nepal. Indira Pandit, ( For Unit IV)

Pandit, C.N., & Poudel, R.P. (2068 BS). Modern research methodology. Writing and evaluation. Kathmandu: Pragya Publication. (Unit I, II, III, VI and VII)

Pandit, R.P. (2012). *Mathematical Statistics*, Kathmandu: Nepal. Indira Pandit, (For Unit III)

Pandit, C.N & Poudel R.P. (2068). *Modern Research Methodology, Writing and Evaluation,* Kathmandu: Nepal. Pragya publication (For unit I ,II, III, V and VI)

Sing, Y. K. (2006). *Research Methodology and Statistics.* New Delhi. New age international (P) limited,(For unit II and III)

Course title: **Environmental Chemistry**

Course No.: Chem. Ed. 538 Nature of the Course: Theory + Practical

Credit Hours: 3 (2 T + 1 P) Period/week: 2(T) + 3Pds/day/week/gr(P).

Level: M.Ed. in Chemistry Education Teaching Hours: 80 (32 T + 48 P)

Semester: Third

1. **Course descriptions**

This course is designed to give the knowledge and skills of Environmental Chemistry. It consists of two parts viz. theory and practical. This course emphasized to introduce atmospheric structures and air, water, land, solid waste, trace elements thermal and radiation pollution. This course also focused on green chemistry for emerging green technology. The practical parts include practical activities \ experiments about environmental chemistry.

1. **General objectives**

The objectives of this course are as follows:

* To acquaint the students with the environmental segments, atmospheric composition and structure, chemical species and particulates present in the atmosphere.
* To enable the students in elaborating the air, water, land, solid, thermal and radiations pollutions.
* To help them develop awareness about the global problems and programs on environmental pollution.
* To make the students familiar with the sources, effects chemical present in atmosphere and control measures of environmental pollution.
* To enable the students with green chemistry about green chemical, reagent, solvents synthesis and emerging green technologies.
* To help them develop, observational out the given experiments efficiently and correctly.
* To help them develop the skills of analysis water, soil and acid rain

1. **Specific objectives and Contents**

|  |  |
| --- | --- |
| **Specific objectives** | **Contents** |
| * Define and explain Environment, Chemical Hazard and Environmental chemistry and their scope. * Classify environmental segments into atmosphere hydrosphere, lithosphere and biosphere. * Describe the main composition and structure of the atmosphere. * Elaborate the atmospheric structure such as troposphere, stratosphere mesosphere and ionosphere. * Explain the chemical and photochemical rxn of air in stratosphere. * Identify the different types of pollutants and pollution. * Differentiate contaminate pollutant and synergism and antagonism. * Explain the pathway of pollutants and their unit of concentration | **Unit: 1 Environmental Chemistry and pollution (3)**   * 1. Introduction   2. Scope of environmental chemistry   3. Environmental segment   1.4 Compassion and structure atmosphere  1.5 Chemical and photochemical reaction in atmosphere  1.6 Types of pollutants and pollution  1.7 Contaminant VS pollutant   * 1. Source receptor and sinks of pollutants   2. Pathway of pollutants |
| * Define and explain air pollution and pollutants. * Describe the sources and emission of air pollutants. * Classify air pollutants according to their origin, chemical composition and states of matter. * Explain the characteristics and biochemical effects of air pollutants such as CO, NOx, hydrocarbon, SOx, H2S, and particulate matter. * Discuss photochemical smog, fog formation, mechanism of smog formation, volatile organic compound and their oxidation, formation of PAN and control of photochemical pollutants. * Explain the effect of air pollution on human, animals, vegetation, materials and property and environment. * Discuss the physiological role and function of heavy metal (Hg,Pb,Cd,Cr and As). * Describe the monitoring sampling and analysis of air pollution. * Elaborate the preventive and control measures of air pollution. * Explain the policy and strategy of REDD forest in Nepal. * Explain Green house effects in terms of their source, effect, importance and their ways of controlling. * Discuss ozone formation, depletion, strategies. * Describe the theories of acid rain, causes, effect and minimizing acid rain. * Describe major indoor air pollutants, their effects and control, Indoor air quality standard | **Unit -2 Air pollution (6)**   * 1. Introduction   2. Sources and emission of air pollutants   3. Types of air pollutants   4. Characteristics and biochemical effects of CO, NOx, hydrocarbon, SOx, H2S   5. Photochemical and industrial smog.   6. Effect of air pollution   7. Air quality standards   8. Air monitoring sampling and analysis   9. Role and strategy of REDD forest in Nepal (Reducing emission from deforestation and forest degradation)   10. Air pollution control and prevention.   11. Greenhouse effect and Global warming   12. Ozone chemistry   13. Acid rain   14. Indoor air polution |
| * Define and explain the sources of water pollution * Classify water pollution on the basis of organic pollutants, Inorganic pollutants suspended solids and sediments, radioactive materials and thermal pollutants and also describe their effect. * Characterize the waste water on the basis of physical and chemical characteristics. * Compare BOD and COD. * Explain Eutrophication on the basis of types, effects and controlling steps. * Describe the process of sampling and sample. * Tabulated water quality standards and parameter in WHO and Nepal’s standards * Discuss the way of preventing and controlling water pollution. * Describe waste water treatment process : Primary , secondary and tertiary treatments | **Unit-3 water pollution (4)**   * 1. Introduction   2. Classification of water pollutants   3. Characteristics of waste water   4. Eutrophication   5. Water quality parameter, sampling and preservation and standards   6. Monitoring techniques and methodology.   7. Water treatment (Drinking and waste water) |
| * Define and explain soil pollution and pollutants. * Describe the importance of water and air, soil water and soil air. * Discuss the composition of soil on the basis of role in organic and inorganic component in soil. * Elaborate the acid base ion-exchange reaction in soil. * Describe the importance of micro and macro nutrients in soil. * Discuss the physiological role and function of heavy metal (Hg,Pb,Cd,Cr and As). * Explain nitrogen pathway and NPK in soil. * Describe main soil pollutants and their influence on health and environment. * Classify pesticides and its impact on human health, agriculture and environment. * Explain the methods of preventing controlling and ways of minimizing pollutants in soil. * Analyzed the nutrients, metals, ions, mineral present in the soil. | **Unit- 4 Land Pollution (4)**  4.1 Introduction  4.2 Water and air in soil  4.3 Composition in soil  4.4 Acid base ion exchange reaction in soil  4.5 Micro and macro nutrients in soil  4.6 Heavy metals and their physiological role  4.7 Main soil pollutants and their influences  4.8 Pesticides  4.9 prevention of soil pollution  4.10 Analysis of soil |
| * Define and explain solid waste. * Classify solid waste on the basis of MSW, Industrial, Agricultural, BMW, other and the Toxicity. * Describe the source and characteristics of solid wastes. * Explain the method of collection and their disposal techniques in solid wastes. * Discuss composting method and land fill and effect of land fill in solid waste. * Elaborate incineration on the basis of their incineration type. * Describe Hazardous waste their management and treatment. * Elaborate the industrial waste management. * Discuss recycling, recovery and reuse (3R) techniques in solid waste management. * Discuss on the problems in managing solid waste in main city and suggest ways of solving the problem. | **Unit- 5 Solid waste Management (4)**  5.1 Introduction  5.2 classification of solid waste  5.3 collection and disposal of solid waste management.  5.4 Land fill and solid waste management  5.5 Recycling technique of solid waste |
| * Explain human a caustics. * Elaborate the measurement of noise. * Classify noise on the basis of sources. * Describe effect of noise pollution on the basis of their physiological, psychological and other effects. * Discuss Noise pollution criteria on the basis of annoyance, inference with communication and hearing loss criteria. * Explain the preventive and control measures of noise pollution. | **Unit -6 Noise pollution (3)**  6.1 Introduction  6.2 Measurement of noise  6.3 Sources and classification of noise  6.4 Noise control criteria  6.5 Effect of noise pollution  6.6 Preventive and control measures of noise pollution |
| * Define and explain radiation pollution. * Describe the types of radiation and radiation measuring units. * Elaborate the radiation source of environment on the basis of naturally occurring radioactive element, cosmic radiation, radiation from medical, television and mobile set, from nuclear weapons and explosion and other miscellaneous sources. * Discuss the effect of radiation on the basis of Non-ionizing radiation, microwave radiation, biological, laser radiation, X-ray cumulative effects of high radiation doses. * Explain the Non- genetic and genetic effect of radiation. * Point out the preventive measures of radiation. * Elaborate the control of radiation from nuclear power plants, occupational radiation exposure, minimizing x-ray hazards. * Discuss the nuclear disaster in Hirosima, three mile Island , Chernobyl world’s nuclear disaster and its effects. * Point of the general methods of radioactivity measurement and control. | **Unit -7 Radiation pollution (4)**  7.1 Introduction  7.2 Radiation and measuring units  7.3 Radiation sources in the environment  7.4 Nuclear disaster and effects of radiation  7.5 Methods of radioactivity measurement \ control |
| * Define Green chemistry * Describe the principle of green chemistry. * Explain green reagent on the basis of Dimethyl carbonate, polymer supported reagents and other alternative green reagents. * Elaborate the green catalyst on the basis of Acid, basic, oxidation, photo catalyst, polymer supported catalyst phase transfer catalyst and biocatalyst. * Describe green solvent on the basis of super- critical fluid systems, aqueous solvent systems and ionic liquids. * Discuss green organic synthesis in solid state on the basis of solid phase organic synthesis without using any solvent and solid supported organic synthesis. * Explain emerging green technology such as microwave chemistry, sonochemistry photochemistry, electrochemistry * Illuciades green synthesis of polycarbonates in different route such as traditional, green synthesis. * Describe the process of green synthesis in Isocyanatesand urethanes, ibuprofen, adipic acid, disodium iminodiacetate and carbonyl pesticides. | **Unit- 8 Green Chemistry (4)**  8.1 Introduction  8.2 Principles of green chemistry  8.3 Green reagents  8.4 Green catalyst  8.5 Green solvent  8.6 Green organic synthesis in solid state  8.7 Emerging green technologies  8.8 Green synthesis of polycarbonates |

**Part- 2: Practical**

|  |  |
| --- | --- |
| * Determine physico- chemical parameters (colour, temperature turbidity and biological for characterizing water quality. * Determine the concentration of total dissolved solids in a given water sample. * Determine the alkalinity in a given water hardness of a given sample. * Determine the concentration of NO2 and NO3 ions in a given water sample. * Determine the concentration of ammonia in given water sample. * Determine the dissolved oxygen in a given water sample. * Estimate chloride ion concentration in a given water sample. * Determine COD in a given water sample. * Determine the free carbon dioxide in a given water sample. * Determine the concentration of free chlorine in swimming pool water. * Determine CO3 and N in a given water sample. | **Unit- 1 Analysis of water**   1. **Quantitative analysis**  (6)    1. Physic chemical parameter    2. Concentration of dissolved solid   2. **Quantitative analysis of water**(24)  2.1 Alkalinity  2.2 Hardness of water  2.3 Estimation of Nitrogen  2.4 Ammonia  2.5 Concentration of dissolved oxygen  2.6 Concentration of chloride ion residual chlorine  2.7 COD  2.8 free CO2  2. Estimation of CO3and N |
| * Determine acid rain in a given air sample | **Unit -2 Analysis of air** (3)  2.1 Acid rain  2.2 Visit monitoring stations/ Vehicular emission test sites |
| * Determine the concentration of total organic matter in a given soil sample. * Determine the concentration of Fe (11) and Fe (111) in a given soils sample. * Determine soil carbonate and bicarbonate in given soil sample. * Determine the pH of a given soil sample. * Determine the moisture content of a given soil sample. * Determine CO2 release from soil microbial activity. * Determine water soluble salt in a given soil sample. | **Unit -3 Analysis of soil (15)**  3.1 Qualitative analysis of soil  3.1.1 Organic matter  3.1.2 Soil carbonate and bicarbonate  3.2 Qualitative analysis of soil  3.2.1 Concentration of iron  3.2.2 pH  3.2.3 Moisture content of soil  3.2.4 CO2 release from soil microbial activity   * + 1. Water soluble salt |

**4. Instructional Techniques**

* Lecture method
* Discussion method
* Inquiry method
* Project method
* Co-operative and collaborative method
* Problem solving method
* Home assignments and class participation
* Internet (web) surfing
* Report writing and presentation
* Individually laboratory work
* Field work

**5. Evaluation Schemes (Internal and External assessment)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Nature of the Course** | **Internal assessment** | **External/ Semester Examination** | **Total marks** |
| Theory cum Practical | 40% | 60% | 100% |

**Note: Students must pass separately in internal assessment, external practical exam / viva and or semester examination.**

**5.1. Internal Evaluation**

**a. Theory + Practical: 40%**

Internal evaluation will be conducted by course teacher based on following activities:

1. Attendance 5 points
2. Participation in learning activities 5 points
3. First assignment 10 points
4. Second assignment exam (term exam) 10 points
5. Third Practical Exam / Project Work 10 points

|  |
| --- |
| Total 40 points |
|  |

**5.2. a. Theory: External Examination (Full Marks - 40)**

|  |
| --- |
| Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of the semester. |

**Nature of the Question and marks allocated for Theory External Examination:**

|  |  |  |  |
| --- | --- | --- | --- |
| Paper | Nature of the Question | | Total |
| Full Paper 40% | Objective | Subjective |
| 10 Q x 1 mark = 10 | 6 Q x 5 marks = 30 | 40 |

**Note: All questions are compulsory.**

**b. Practical External Examination (Full Marks – 20)**

1. Laboratory Examination **15**

2. Construction of teaching learning resources using

computer skills/models and charts construction/ collection

of materials/ project work report/record book **5**

**Note: The marking system will be changed to CGPA system as per the rules and regulations of the Academic council.**

**Recommended Book**

DE, A.K.(2007), Environmental Chemistry, Delhi: New Age International P. Limited Publishers, Ansari Road, Daryaganj.(Unit 1, 3, 4, 5 and 7)

Dr. Kaur,H.(2010), Environmental Chemistry, India: K.K Mittal for PragatiPrakashan, Meerut.(Unit 1, 7and 8)

Dr. Pandit, C.N &Subedi, R.R. (2012), Environmental Chemistry, Kathmandu: Cambrige publication Pvt.Ltd. kalimati.(Unit 1, 2,3,4,5,6 and 7)

**Reference Book**

Chatwal, G.R. &Bhagi A.K. (2005), Environmental Chemistry, New Delhi: Himalaya Publishing House.

Dara S.S.(2004), A textbook of Environmental Chemistry and Pollution Control,New Delhi: S. Chand & Company Ltd. Ram Nagar.

IUCN, (2000), Environmental Education, Source Book, Nepal: The World Conservation union, Kathmandu.

Jadhav, H.V. &Purohit S.H.(2008), Global Pollution and Environmental Monitoring, New Delhi: Himalaya Publishing House.

Katyal, T.&Satake, M. (1989), Environmental pollution , India: Anmol Publication Pvt.Ltd. New Delhi.

Miller G.T.(2005), Living in the Environment Principles, Connections, and Solutions(13ed.), Singapore: Thomson Asia Pte.Ltd. ISBN 981-265-632-4.

Stanley E. Manahan, Environmental Chemistry, Lewis Publishers. ISBN 0-87371-238-2

**Course Title: Teaching Biology**

Course No.: Bio. Ed. 535 Nature of the Course: Theory + Practical

Credit Hours: 3 (2 T + 1 P) Period/week: 2(T) + 3Pds/day/week/gr(P).

Level: M.Ed. in Biology Teaching Hours: 80 (32 T + 48 P)

Semester: Third

**1. Course description:**

This course is designed to acquaint the students with the knowledge and skills of **“Teaching Biology”**. It is divided into two parts: theory and practical. This course aims for developing knowledge, skills attitude and aptitude necessary for developing science perspectives, approach, knowledge, method and their application for better livelihood. This course deals with understanding, analyzing, and seeking knowledge and skills relating to issues and trends of biology and biology education, methods of teaching biology, curriculum planning and management regarding biology education. It aims at producing professionals such as biology teacher at under-graduation and graduation level or as trainer, programmer, advisers etc. The practical parts include practical activities/ experiments on Teaching Biology.

**2. General Objectives:**

The objectives of this course is to enable students to

1. acquire skills and methods of biology and its applications consistent with the stage of cognitive development;
2. examine current secondary school science (biology) provisions and practices
3. analyze biology curriculum from the perspectives of recent theories and methods of education;
4. develop knowledge and skills of planning, designing and implementing biology education;
5. plan, develop and manage teaching-learning resources as well as student evaluation for biology education.
6. use ICT education in biology education.
7. address issues and challenges of the development of science and society from the perspectives of biology education;
8. explore, analyze and adapt innovations in biology education relevant to the national, local and classroom contexts
9. develop practical knowledge on Teaching Biology through laboratory experiments and activities.

**3. Specific Objectives and Contents**

**Part I: Theory**

|  |  |  |
| --- | --- | --- |
| **Specific Objectives** | **Contents** | **Teaching hours(32)** |
| * Explain the nature, scope and importance of biological science. * Explain the nature, scope and importance of biology education. * Analyze the place of biology in higher school curriculum and university curriculum. | **Unit 1. Biological Science and Biology Education**   * 1. Nature, scope and importance of biological science.   2. Nature, scope and importance of biology education.   3. Place of biology in higher secondary and university curriculum. | 3 |
| * Explain the Blooms’ taxonomy of educational objectives. * Analyze the general and specific objectives of school biology curriculum and university biology curriculum. | **Unit 2. Objective based Teaching Biology**   * 1. Blooms’ Taxonomy of educational objectives   2. General aims and objectives of teaching biological science. | 3 |
| * Study critically and write a report on development of school biology curriculum in Nepal. * To review the science and curriculum trend in secondary school. * Analyses a f biology curriculum of secondary level, higher secondary level and university level. * Compare school biology curriculum of Nepal and SAARC country. * Explain the characteristic features of BSCS and Nuffield biology curriculum. * Designing the science curriculum in secondary and university level. | **Unit 3.Biology and Curriculum.**   * 1. Historical background of biology curriculum.   2. The place of biology in secondary school, higher secondary school and university curriculum.   3. Critical analysis of biology- curriculums of Nepal.   4. Comparative study of school biology curriculum in Nepal and SAARC country.   5. Innovative Biology Curricula i.e. BSCS and Nuffield Biology.   6. Designing of biology curriculum. | 4 |
| * Explain the importance of method in teaching biology. * Explain the steps, advantages and shortcomings of the said methods of instruction. * Justify the selection of a method in teaching biology. | **Unit 4. Instructional methods**   * 1. Importance of method of teaching.   2. Lecture cum demonstration method.   3. Laboratory method/ field method.   4. Problem solving method.   5. Collaborative method.   6. Selection of method. | 4 |
| * To develop knowledge and skills of planning annual strategies, teaching unit, lesson * To develop knowledge and skills applying on designing instructional materials, extra-curricular activities or co-curricular activities. * To implement all the planning and designing in biology education * To implement the criticality to solve the problem of science education and integrate science with national curriculum with criticality. * Explain the characteristic features and the importance of biology laboratory. * Design biology laboratory. * Use Science Kit(Biology kit) and Mobile laboratory. * Write a report on the status of biology laboratory in Nepal. * Explain the instructions to biology teachers and laboratory assistants in conducting laboratory works. * Explain the common accidents, safety rules and first-aid treatment method in biology laboratory. | **Unit 5.** **Planning, designing and implementing Biology Education**   * 1. Annual Planning, Unit Planning, Lesson Planning.   2. Construction, design and use of instructional materials in biology education: Low cost and local materials, Audio, Visual, Audiovisual, IT medias, technological instruments and Improvised Materials.   3. **Science Laboratory and Instruction**   4. Importance of laboratory work.   5. Characteristic features of biology laboratory.   6. Designing of Biology laboratory.   7. Instructions to Biology teachers to handle the lab.   8. Instructions to biology laboratory assistants.   9. Instructions to Biology students using laboratory.   10. **Science Kit(Biology kit) and Mobile laboratory.**   11. **Laboratory Accidents and Safety Rules:**       1. Importance of safety rules.       2. Common laboratory accidents.       3. Preventive measures.       4. First-aid treatments. | 6 |
| * Explain the different types of training and their use for biology teachers. * Explain the importance of Zoo, Botanical garden, museum, national park and reserves in teaching biology. * Collect, preserve and maintain the plant and animal materials. * Use and Explain the importance of aquarium, terrarium and Vivarium in teaching biology. * Explain the technique of taxidermy in the preservation of animals. * Manage Local or community resource. | **Unit 6. Biology Teacher Education:**   * 1. **Professional development of Biology teacher:**      1. Long Term Training      2. Short Term Training      3. Refresher Training   2. **Biology Resource Management:**   3. Importance of Zoo, Botanical garden, , Museum ,National Park and wild life Reserves.   4. Collection, preservation, maintenance of plant and animal materials.   5. Floriculture Fair and Exhibition.   6. Aquarium, Terrarium and Vivarium. Taxidermy.   7. Local or community resource management. | 3 |
| * To explain the applications of the methodological and philosophical foundations of research in science education regarding educational research ethics and design, measuring instruments and data manipulation, methodological rigor, evidence-based conclusions, and publication genres to support the development of a professional presentation and formal research paper. | **Unit 7. Research and Biology Education**   * + 1. Application of the methodological and philosophical foundations of research in science education. (Topics include educational research ethics and design, measuring instruments and data manipulation, methodological rigor, evidence-based conclusions, and publication genres to support the development of a professional presentation and formal research paper.)     2. (Research topics may include current research on hands-on/inquiry teaching, concept mapping, student misconceptions, learning/teaching styles, alternative assessment, gender differences, learning environments, action research, and knowledge transfer). | 4 |
| * To use the different evaluation approaches in Biology education. * To evaluate the programme, curriculum and learners’ performance in biological science. * To draw the relationship between objectives, learning experiences and evaluation. | **Unit 8. Evaluation and Biology Education**   * + 1. Test, Measurement, Assessment and evaluation and their uses in biology education     2. Strategies for Programme evaluation, curriculum evaluation and performance based evaluation in biological science.     3. Relationship between objectives, learning experiences and evaluation. | 3 |
| * To use the E-Learning patterns in biology education. * To use the ICT resources in teaching biology. * Explain the importance of modules and the components of module in teaching biology. | **Unit 9. ICT in Biology Teaching**   * 1. E-Learning in biology education.   2. ICT resources for biology teaching learning (Virtual Classroom, Computers, Laptops and Mobile Appliances).   3. Biology Teaching Modules (Importance, components and development of modules). | 2 |

**Part II: Practical**

|  |  |  |
| --- | --- | --- |
| **Specific Objectives** | **Contents** | **Teaching hours (48)** |
| * To prepare the stains and preservatives for lower and higher plants and animals * To develop the techniques of preparing the temporary and permanent slide of lower plants – algae, fungi and bryophytes. * To develop the techniques of preparing the temporary and permanent slide of lower animals * To develop skills in identifying angiospermic taxa up to family level of the families mentioned in the course content. | **Unit 1. Biological Science**   1. Preparation of the stains and preservatives for studying the some lower and higher plants and animals. 2. Preparation of temporary and permanent slides of vegetative and reproductive structures of some important available lower plants - algae, fungi and bryophytes. 3. Preparation of temporary and permanent slides of lower animals. 4. Identification of selected angiospermic taxa using taxonomic keys. | **3×3 = 9** |
| * Curriculum framing – To prepare comprehensive framework on the basis of the trends, contextual needs (identification of Vision, goals, objectives; specification matrix with contents, activities and learning outcomes; instructional planning and materials; evaluation modality and scope). * To analyze Secondary school curriculum – analysis of goals, objectives and activities for coherence. | **Unit 2. Biology Education and curriculum**   1. Curriculum framing – Preparing comprehensive framework on the basis of the trends, contextual needs (identification of Vision, goals, objectives; specification matrix with contents, activities and learning outcomes; instructional planning and materials; evaluation modality and scope). 2. Secondary school curriculum analysis – analysis of goals, objectives and activities for coherence. | **3 × 2 = 6** |
| * To prepare Annual Plan/ Unit Plan and Lesson Plan for class room instruction in Secondary Level/ Higher Secondary Level/ University Level. * To prepare Herbarium. * To collect different animals and prepare specimens for laboratory study. * To prepare different charts, Models of lifecycle of different plants and animals. * To prepare different Models of parts of the animal. * To prepare Improvised Instructional Materials for teaching biology in undergraduate and graduate level. * To use computers/internet for preparing teaching/learning modules. | **Unit 3. Biology Teacher Education:**   1. Annual Plan/ Unit Plan and Lesson Plan for class room instruction in Secondary Level/ Higher Secondary Level/ University Level. 2. Preparation of Herbarium of collected plants. 3. Collection and preservation of different animal specimens for laboratory study. 4. Preparing different charts, models of life cycle of different plants and animals. 5. Preparing different models of parts of the animals. 6. Preparation of Improvised Instructional Materials for teaching biological science in different Level. 7. Preparation of biology teaching/learning modules. | **3 × 5= 15** |
| * To evaluate the curriculum. * To evaluate the programme * To plan student examination – formative tests, diagnostic tests; summative tests for secondary level biology education. | **Unit 4. Evaluation and Biology Education**   1. Biology curriculum evaluation. 2. Programme evaluation. 3. Planning for comprehensive student examination – formative tests, diagnostic tests; summative tests for secondary level biology education. | **3×2 = 6** |
| * To conduct Seminar on relevant topics of teaching biological science. * To submit the reports of defined project works.  1. Document Preparation. 2. Report Presentation 3. Presentation by power Point.  * To Prepare proposal for short research. | **Unit 5. Research and Biology Education**   1. Conduction of Seminar on relevant topics of teaching biological science. 2. Preparation of the projects by the students and evaluated by the instructor. 3. Preparation of proposal for short research. | **3×3 = 9** |
| * To visit Botanical garden, National Park, Wildlife Reserve or Protected areas to study plants and animals life * To collect, preserve , identify and submit different genera of flora and fauna through Field Trip. | **Unit 6. Field trip**   1. Field visit to Botanical garden, National Park, Wildlife Reserve or Protected areas to study plant and animal life | **3×1 = 3** |

**4. Instructional Techniques:**

* Lecture, question-answer, and discussion.
* Seminar, Interaction.
* Workshops: Presentation, participatory activities, follow-up, sum up.
* Demonstration: Demonstration of phenomena, experiments, charts, materials, etc. – question answer, discussion.
* Inquiry: generating questions and answers through, dialogues, review , observation, experiments, etc.
* Project work: Hands on activities, collaborative work, research.
* Review of Books, Research Articles and Reports.
* Internet search.
* Preparation of charts, presentations, and reports.

*Project work:*

|  |  |  |
| --- | --- | --- |
| SNo | Description | Comments |
| 1. | Study recent trends in biology education |  |
| 2. | Prepare Herbarium, Aquarium, Botanical Garden etc. |  |
| 3. | Prepare improvised instructional materials. |  |
| 4. | Research on Prior knowledge, Misconception, |  |
| 5. | Preparation of curriculum framework. |  |
| 6 | Planning a unit on HSEB Biology curriculum |  |

***Each student must come up with a project work individually or in group but with clear role and responsibility. The teacher and students may decide the project work from the list above or alternative related to the course work.***

* 1. **Specific Instructional Techniques/Activities**
* Most of the units require project work, problem solving method and power-point presentation.
* The teachers may decide the project work related to the course work

1. **Evaluation(Internal Assessment and External assessment ):**

|  |  |  |  |
| --- | --- | --- | --- |
| **Nature of course** | Internal Assessment | Semester Examination | Total Marks |
| Theory cum Practical | 40% | 60% | 100% |

***Note: Students must pass separately in internal assessment, External practical exam / viva and or semester examination****.*

* 1. **Internal Evaluation for Theory + Practical : 40%**

Internal evaluation will be conducted by course teacher based on following activities:

1. Attendance 5
2. Participation in learning activities 5
3. First assignment 10
4. Second assignment exam (term exam) 10
5. Third Practical Exam / Project work 10

**Total**  **40**

* 1. **External Evaluation (Final Examination) :**

**i. Theory Examination 60 % (Full Marks – 40)**

1) Objective type questions (Multiple choice 10 questions × 1mark ) **10** marks

2) Subjective questions (6 questions × 5 marks) **30** marks

**40 marks**

**ii. Practical Examination**

1. **External evaluation**   **(Full Marks - 20)**
2. Laboratory Examination **15**
3. Construction of teaching learning resources using computer skills / models and charts construction/ collection of materials/ Field report and Record book **5**

***Note: The marking system will be changed to CGPA system as per the rule and regulation of the Academic council.***

|  |  |
| --- | --- |
| **Texts and References:** | |
| A.F. Chalmers (1982). What is this thing called science? The Open University Press.  Ahmad J. (2009). Teaching of Biological Sciences. New Delhi. PHI Learning Pvt. Ltd.  Bajracharya, D. (2001). Science and Technology in Nepal. Kathmandu: Royal Nepal Academy of Science and Technology.  Bhatta, B.D. and S.R. Sharma. (1993). Modern Education Series – Method of Science teaching. Delhi. Kanishka Publishing House.  CERID (1985). School level curriculum: A historical perspective. National education committee, HMG/Nepal.  Cohen L. and Manion L. (1994). Research Methods in Education. Routledge.  <http://www.ets.org/Media/Tests/PRAXIS/pdf/0483.pdf>.  <http://www.mml.co.za/docs/FET_Resources/grade-11-subject-modules/Biological-Sciences-Gr11-Teachers-Module-MML.pdf>.  Joshi, S.R. (2005). Teaching of Science. New Delhi. A.P.H. Publishing Corporation.  Karl, R.M. and Vandana Gupta. (2012). Teaching of Science: A modern Approach. New Delhi. PHI Learning Pvt. Ltd.   Koirala, K.P.(2070). Science Teaching in Secondary Level. Bagbazar, Kathmandu:Jupiter Publishers and Distributors PVT.LTD  Lamsal, U. (2014). Science Education. Kathmandu. Lochan Lomus Educational International Pvt. Ltd.  Lincoln Y.S. and Guba E.G.( 1985). Naturalistic Inquiry. Sage Publications.  Meredith D. Gall, Walter R. Borg, Joyce P. Gall (1996). Educational research: An introduction. Longman Publishers, NY USA.  Mohan, R. ( 2004) Innovative science teaching: New Delhi. Prentice-Hall of India Pvt Ltd.  Raw, D. B. (2001). International encyclopedia of science and Technology Education 1: Science and Technology Education. New Delhi. Discovery Publishing House.  Reports of different educational Commissions of Nepal.  Shukla, C.S. (2003). Science Teaching. Meerut. International Publishing House.  Yadav, M.S. (2000). Teaching Science at Higher Level. New Delhi. Anmol Publications Pvt. Ltd. | |

**Course Title: Basic Biotechnology**

Course No: Bio.Ed. 536 Nature of the course: Theoretical (T)+Practical(P)

Credit hours: 3 (2T+1P) Periods/week: 2(T)+3pds/day/week/gr (P)

Level: M.Ed. in Biology Teaching Hours: 80 (32T + 48 P)

Semester : Third

1. **Course Description:**

This course aims to provide knowledge on recent advances on Biotechnology and its applications in various fields. Especially it deals with the present status of biotechnological works in cell and tissue culture with reference to Nepal and also provides the students with knowledge and skills of biotechnological techniques .

The course consists of two parts : Part I : Theory and Part II : Practical.

Students are required to secure pass marks independently both in Theory and Practical parts.

1. **General Objectives:**

* Provide knowledge on requirements of tissue culture laboratories
* Familiarize the students with the recent advances in Biotechnology and its applications in various fields with particular reference to Nepal.
* Acquaint the students with knowledge and skills of different biotechnological techniques with special reference to tissue culture technique.

**Part I : Theory**

1. **Specific Objectives and Contents:**

|  |  |  |
| --- | --- | --- |
| **Specific Objectives** | Contents | **Teaching Hours**  **=32** |
| * Explain the scope and importance of Biotechnology. * Summarize the present status of Biotechnology in Nepal. | **Unit I.Biotechnology**   * 1. Introduction   2. Scope and importance of Biotechnology   3. Present status of Biotechnology in Nepal | 3 |
| * Give the concept of different types of tissue culture (seed culture, embryo culture, tissue culture, organ culture, single cell culture, meristem culture, anther culture and protoplast culture) * Clarify the concept of protoplast fusion and somatic hybridization. * Describe the requirements for tissue culture (Different culture media and their composition, sterilization). * Explain micro-propagation techniques and their applications. * Describe important applications of tissue culture. * Explain the present status of tissue culture laboratories in Nepal. | **Unit II. Plant Tissue Culture or in Vitro culture**   1. Introduction 2. Types of tissue culture    1. Seed culture    2. Embryo culture    3. Tissue culture    4. Organ culture    5. Single cell culture    6. Meristem culture    7. Anther culture    8. Protoplast culture    9. Somatic hybridization 3. Methods of Plant Tissue culture    1. Composition of Media   4.1.1. Inorganic nutrients  4.1.2.Organic nutrients  4.1.3. Growth hormones  4.1.4. Agar  4.1.5. PH   1. Media Preparation    1. Media selection    2. Different Media and their composition used in plant tissue culture    3. Sterilization    4. Micro-propagation techniques and its application. 2. Status of tissue culture laboratories in Nepal. | 14 |
| * Explain briefly the role of biotechnology application in agriculture, fermentation, medicine and genetic engineering. * Give the concept of Genetic Engineering and its applications in the field of medicine , human health and agriculture * Explain some important drawbacks of genetic engineering. | **Unit III.Biotechnological Applications**   * 1. Agriculture(Biofertilizer -Rhizobia, blue green algae, Frankia and Mycorrhiza)   2. Fermentation(Biogas, alcohol, organic acid, amino acid, vitamins and enzymes),   3. Medicine (antibody production, production of human and animal vaccines ,diagnosis of infectious disease, hormones, enzymes),   4. Genetic engineering.      1. Concept      2. Genetic Engineering in human welfare         1. Application of recombinant DNA technology         2. Application of Genetic Engineering in the field of medicine and human health(Vaccine, Human Growth hormone, Insulin, Interferons).         3. Application of Genetic Engineering in the field of Agriculture(production of resistant varieties of crops, biofertilization , increase the protein content )      3. Possible drawbacks of Genetic Engineering | 5 |
| * Describe the role of biotechnology in preservation of the environment with respect to waste treatment, biodegradation and bioremediation | **Unit IV. Environmental Biotechnology**  4.1. Introduction   * + 1. Waste Treatment   4.1.1.1. Aerobic Waste treatment  4.1.1.2. Anaerobic Waste treatment   * + 1. B iodegradation and Bioremediation | 2 |
| * Give the concept, importance and drawbacks of genetically modified crops (GM crops). | **Unit V. Genetically Modified Crops**  5.1. Introduction  5.2. Importance of genetically modified crops(GM crops).  5.3. Drawbacks of genetically modified crops. | 2 |
| * Give the concept of artificial insemination, embryo transfer and in vitro fertilization in animals and human. * Explain the importance of transgenic animals. * Explain the reproduction of Test Tube baby | **Unit VI. Manipulation of Reproduction in Animals**  6.1. Introduction  6.2. Methods of Manipulation  6.2.1. Artificial insemination  6.2.2. Embryo transfer  6.2.3. In Vitro fertilization in animals and human  6.3. Transgenic animals  6.4. Test Tube baby | 4 |
| * Describe the Concept and phenomenon of Cryopreservation | **Unit VII. Cryopreservation, Techniques of cryopreservation**   * 1. Introduction   2. Methods of Cryopreservation   3. Uses of Cryopreservation | 2 |

**Part II. Practical**

|  |  |  |
| --- | --- | --- |
| ***Specific Objectives*** | ***Contents*** | ***Teaching Hours =48*** |
| * Use different sterilization equipments. | 3.1. Sterilization technique | ***6*** |
| * Perform surface sterilization of some plant parts | 3.1.1. Surface sterilization | *3* |
| * Prepare culture media | 3.2. Preparation of media | *6* |
| * Prepare stock solution media | 3.2.1.Preparation of stock solution media | ***12*** |
| * Perform Micropropagation techniques of organ culture and anther culture | 3.3.Micropropagation technique of organ culture and anther culture | ***3*** |
| * **Visit tissue culture laboratories to study tissue culture methods and their applications and submit the report.** | 3.3.**Field Visit :**  Visit to the tissue culture laboratories to study tissue culture methods and their applications and submission of the report(individual). | ***18*** |
|  |  |  |

**4. Instructional Techniques**

The instructional techniques are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques/activities applicable to the specific units.

* 1. **General Instructional Techniques**
* **Lecture Method**
* **Demonstration Method**
* **Discussion Method**
* **Inquiry Method**
* **Project Method**
* **Collaborative Method**
* **Book review,**
* **Web surfing**
* **Power point presentation** 
  1. **Specific Instructional Techniques**
* **Field visit to biotechnology laboratories**
* **Interview**
* **report writing**

1. **Evaluation(Internal Assessment and External assessment ):**

|  |  |  |  |
| --- | --- | --- | --- |
| **Nature of course** | Internal Assessment | Semester Examination | Total Marks |
| Theory cum Practical | 40% | 60% | 100% |

***Note: Students must pass separately in internal assessment, External practical exam / viva and or semester examination****.*

* 1. **Internal Evaluation for Theory + Practical : 40%**

Internal evaluation will be conducted by course teacher based on following activities:

1. Attendance 5
2. Participation in learning activities 5
3. First assignment 10
4. Second assignment exam (term exam) 10
5. Third Practical Exam / Project work 10

**Total**  **40**

* 1. **External Evaluation (Final Examination) :**

**i. Theory Examination 60 % (Full Marks – 40)**

1) Objective questions (Multiple choice 10 questions × 1mark ) **10** marks

2) Subjective questions (6 questions × 5 marks) **30** marks

**40 marks**

**ii. Practical Examination**

1. **External evaluation**   **(Full Marks - 20)**
2. Laboratory Examination **15**
3. Construction of teaching learning resources using computer skills / models and charts construction/ collection of materials/ Field report and Record book **5**

***Note: The marking system will be changed to CGPA system as per the rule and regulation of the Academic council.***

**Recommended and Reference Books**

**Recommended Books:**

Dubey. R. C. (2013). *A Text Book of Biotechnology*. S. Chand & Company Ltd., Ram Nagar,New Delhi(For Unit I, II , V & VI).

Dubey. R. C. (1999). *A Text Book of Biotechnology*. S. Chand & Company Ltd., Ram Nagar,New Delhi(For Unit I, IIIand VII).

Gupta, V.N.P. Joshi, Kunjani. Singh , Maneesa. and Rao , G.P (2002). *Text book of Botany (Part 111) (Plant biochemistry and Biotechnology)* based on New syllabi of Tribhuvan university, Allahabad, U.P. INDIA ( For Unit III to XI)

Ignacimuth, S. J. ( 2007 ). *Basic Biotechnology.*Tata Mc. Graw Hill Pub. Company Ltd., New Delhi ( For Unit IV)

**Reference Books**

Gupta, P.K (2000). *Elements of Biotechnology*, Rastogi Publications, New Delhi .

Keshari, Aravind K and Adhikari, Kamal. K ( 2010). A Text book of Higher Secondary Biology

Keshari, Aravind K and Adhikari, Kamal. K ( 2008). A Text book of Higher Secondary Biology (Unit I, II, III)

Singh, B. D. ( 2010).*Biotechnology*,Kalyani Publishers

Purohit S.D.(2013). *Introduction to Plant Cell, Tissue and Organ Culture*. PHI Learning Private Limited, Delhi.

# Course Title: Advanced Research Methodology in Science

# Education

# Course code : Bio. Ed. 538 Nature : Theoretical

# Level : M.Ed in Biology Periods/ week : 3

# Credit Hours: 3 Teaching hours : 48

Semester: Third

# Course Description

This course on "Advanced Research Methodology in Science Education" aims to provide students with an in-depth insight into the pursuit of research in qualitative and quantitative approach in Science education. It intends to develop their skills on statistical analysis with a focus on Science and Science education research, application of descriptive and inferential statistics in analyzing quantitative and qualitative data. It further deals with research proposal including report writing procedures in Science education.

1. **General Objectives**

The general objectives of this course are to:

* provide students with an opportunity to understand inquiry based research with its application.
* interpret the nature and fundamentals of research in Science education.
* carry out an academic research as a cohesive and coherent piece of work.
* provide the students with hands on experience on statistical tools in data analysis.
* enable the students to prepare research report using appropriate methods and approaches.

1. **Specific Objectives and Contents**

|  |  |
| --- | --- |
| **Specific Objectives** | **Contents** |
| * Introduce scientific method of research. * Elaborate the meaning of inductionism and deductionism in terms of Science education research. * Appraise critically the oriental and western philosophy of Science and research traditions. * Apply qualitative and quantitative methods in Science education research. * Analyze the Science education with respect to scientific research approaches. * Explain the role of theories in Science education research. * Illustrate the research approaches and methods. * Discuss the sampling strategies and sources of data collection techniques. | **Unit 1. Science and Science Education Research (13 hrs.)**   * 1. Nature of science, non-science and pseudoscience   2. Types of research and inquiry methods   3. Concept of scientific methods and research methods in Science education   4. Scientific methods: * Induction and inductivism * The scientific revolution * Kuhn's revolutionary theory * Relativism in science   1. Principles of scientific methods in Science   1.6. Oriental and western philosophy in Science research traditions   * 1. Concept of theories and models in Science   2. Roles of theories in Science education   3. Research approaches and methods * Survey research in Science education * Comparative and correlational research in   Science education   * Experimental research in Science education * Interpretive and qualitative research in Science education * Action research in Science education * Mixed method research in Science education   1. Basic steps in the process of research   2. Sampling strategies   3. Sources and types of data in Science education |
| * Use appropriate statistical tools in research in science education. * Interpret different approaches of data analysis in quantitative research. * Calculate the mean, median and standard deviation and apply it in the science education research. * Identify the confidence limit for small and large samples. * Use SPSS for calculating and visualizing the descriptive data. * Identify the procedure of hypothesis testing. * Test hypothesis by Z-test, t-test and χ2-test. * Apply parametric and non-parametric tests in scientific research. * Use SPSS for calculating and visualizing the inferential data. | **Unit 2. Application of descriptive and inferential statistics in analyzing quantitative data (21 hrs.)**   * 1. **Data management and Descriptive statistics**      1. General principles of data analysis      2. Data management and processing: Data checking, editing, coding, recoding, data entry      3. Data entry in SPSS programme      4. Displaying data in frequency and cross tables, and figures using SPSS      5. **An overview of descriptive statistics** * Measures of central tendency * Measures of dispersion * Measures of correlation * Simple regression   **2.2 Inferential Data Analysis**  2.2.1 Parametric tests   * Hypothesis testing * t-test * Z-test   2.2.2 Non-parametric test  χ2-test |
| * Interpret qualitative data analysis process in science education. * Explain approaches of qualitative data analysis. * Demonstrate skills required for qualitative data analysis. * Describe the use of software in qualitative data analysis. | **Unit 3. Qualitative Data Analysis (5 hours)**   * 1. Concept of qualitative data analysis   2. Approaches of qualitative data analysis:   Thematic, inductive and domain   * 1. Steps in qualitative data analysis   2. Introduction to qualitative data analysis software: Atlas/ti and Nvivo |
| * Outline the format of research proposal and requirements for research report. * Describe the components of research proposal and report writing. * Prepare research proposal in Science education. * Use APA format in thesis writing. | **Unit 4. Research Proposal and Report Writing (9 hrs.)**   * 1. **Proposal development** * Select appropriate title/problem for Science education research * Components of research proposal * Steps in developing research proposal * Formulation of research work schedule   1. **Report Writing Techniques** * Format of research report * Steps in research report writing * Techniques of citation and referencing: APA style |

***Note:*** *The figures in the parentheses indicate the appropriate teaching hours for the respective units*.

1. **Instructional Techniques**

* Lecture method
* Discussion
* Inquiry method
* Project method
* Cooperative and collaborative learning methods
* Proposal writing and presentation in the classroom
* Home assignments
* Team teaching and feedback session
* Group activities

1. **Evaluation (Internal Assessment and External Assessment):**

|  |  |  |  |
| --- | --- | --- | --- |
| **Nature of course** | **Internal Assessment** | **Semester Examination** | **Total Marks** |
| Theory | 40% | 60% | 100% |

***Note: Students must pass separately in internal assessment and semester examination****.*

**5.1. Evaluation (Theory)**

1. **Internal Evaluation 40%**

Internal evaluation will be conducted by course teacher based on following activities:

1. Attendance 5 points
2. Participation in learning activities 5 points
3. First assignment ( written assignment) 10 points
4. Second assignment ( project work with presentation ) 10 points
5. Third assignment/ Exam 10 points

|  |
| --- |
| Total 40 points |
|  |
|  |

**5.2 External Evaluation (Final Examination) 60%**

|  |
| --- |
| Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester.   1. Objective type question (Multiple choice 10questionsx1mark) 10 marks 2. Short answer questions (6 questions x 5 marks) 30 marks 3. Long answer questions (2 questions x 10 marks) 20 marks |
| Total 60 marks |

**Recommended books**

American Psychological Association (2010). *Publication Manual of American Psychological Association* (6th edition). Washington DC: APA. (For unit 4)

Best, W. & Kahn V. (2000). *Research in Education*. 7th Edition; Prentice Hall of India Pvt. Ltd. New Delhi. (For unit 3)

Guba, E. and Lincoln, S. Y. (1998). *The landscape of qualitative research: Theories and Issues*, Thousand Oaks: Sage Publication. (For unit 1)

Fraser, B J., et. all. (2012). *Second International Hand Book of Science Education*. Springer International Handbooks of Education. Vol II. New York, USA. (For units I and II)

Joshi, P. R. (2010). *Research Methodology* (4th edition). Buddha Academic Publishers and Distributors Pvt. Ltd., Kathmandu, Nepal. (For units 1 and 2)

**Reference Books**

Bordens, K. S and Abbott, B. B. (2011). *Research Design and Methods*. A Process approach, 8 edition. Indiana University.

Denzin, N. K. and Lincoln, Y. S. (1998). *Strategies of Qualitative inquiry,* Thousand Oaks: Sage Publication. (For unit 1)

Gupta, S. C. (1990). *Fundamentals of Statistics* (3rd edition). Vikash Publishing House Pvt. Ltd., New Delhi. (For unit 4)

Gupta, S. C. (1990). *Fundamentals of Statistics* (3rd edition). Vikash Publishing House Pvt. Ltd., New Delhi. (For unit 4)

Ladyman, J. (2002). *Understanding philosophy of science*. Routledge, Taylor and Francis group, London and New York.

Kothari, C. R. (1990). *Quantitative techniques* (3rd edition). Vikash Publishing House Pvt. Ltd., New Delhi. (For unit 2)

Judith S. L. and et. all. ().*Teaching and Learning of Nature of Science and Scientific Inquiry: Building Capacity through Systematic Research-Based Professional Development*. Spriner.

McMahon, et. all. (2006). *Assessment in Science; Practical Experiences and Experiments.* National Association in Research in Science Education, NSTA press. (For unit 2)

Course Title : **Teaching Physics**

Course No. : Phy.Ed .535Nature of course: Theory (T) + Practical (P)

Level : M. Ed Physics Education Teaching hour: 80 (32 T+ 48P)

Credit hours : 3(2T+1P) Period/week:2(T) +3pds/day/week/group (P)

Semester : Third

1. **Course Description**

This course is designed to acquaint the students with the knowledge and skills of “**Teaching Physics”**. It is divided into two parts: theory and practical. This course aims for developing knowledge, skills attitude and aptitude necessary for developing science perspectives, approach, knowledge, method and their application for better livelihood. This course deals with understanding, analyzing, and seeking knowledge and skills relating to issues and trends of Physics and Physics education, methods of teaching Physics, curriculum planning and management regarding Physics education. It aims at producing professionals such as Physics teacher at under-graduation and graduation level or as trainer, programmer, advisers etc. The practical parts include practical activities/ experiments about “**Teaching Physics”**.

1. **The general objectives of the course**

The objectives of this course is to enable students to

1. Examine current secondary school physics provisions and practices;
2. Analyze physics curriculum from the perspectives of recent theories and methods of education;
3. Acquire skills and methods of physics and its applications consistent with the stage of cognitive development;
4. Address issues and challenges of the development of science and society from the perspectives of physics education;
5. Explore, analyze and adapt innovations in physics education relevant to the national, local and classroom contexts;
6. Develop knowledge and skills of planning, designing and implementing physics education;
7. Plan, develop and manage teaching-learning resources as well as student evaluation for physics education.
8. Provide students adequate practical knowledge of Physics Education.
9. Develop skills to students to perform experiments using scientific instruments and apparatus, including techniques of operation, aspects of safety/precaution and techniques of statistics
10. Enable students in designing and planning investigations for Physics teaching.
11. Familiarize the students with the recent advances in the Physics education.
12. Enhance the knowledge on the activities of national and international organizations related to Physics- Education working in Nepal.
13. **Specific Objectives and Content**

**Part I: Theory**

|  |  |  |
| --- | --- | --- |
| **Specific Objectives** | **Contents** | **Teaching Hours (32)** |
| * Explain the place of Physics in secondary school curriculum. * Review secondary school science curriculum trend in secondary school. * Elucidate physics contents at secondary school level and university level education. * Compare secondary level science (Physics) curriculum in Nepal and SAARC countries. * Describe innovative approaches in Physics curriculum practices. | **Unit I: Physics in School and**  **Teacher Training Curriculum**  1.1 Physics in Secondary School Curriculum  1.2 Physics in Higher Secondary School Curriculum  1.3 Physics in University Curriculum  1.4 Physics in Teacher Training (B.Ed.; NCED packages)  1.5 Comparative study of secondary level science (Physics) curriculum  in Nepal and SAARC countries  1.6 Innovative approaches in Physics Curriculum Practices. | **(4pds)** |
| * Explore international physics education projects   -Project Physics  -PSSC Project  -Nuffield Physics Project  -Harvard Physics Project   * Analyze and adapt some of the good features of the international innovative projects relevant to Nepal | **Unit II : Some International**  **Innovative Physics**  **Education Projects**  2.1 Review of different projects  2.1.1 Project Physics  2.2.2 PSSC (Physical Science  Study Committee Project)  2.2.3 Nuffield Physics project  2.2.4 Harvard Physics project  2.2 Analyze and adapt good features of the innovative projects relevant to Nepal  (Include Contexts, Objectives and processes of course, text book, physics laboratory guide, physics laboratory apparatus, related multimedia, supplementary reading materials, teacher's resource book) | **(4pds)** |
| * Elaborate on various ways and techniques of communication/interaction for the propagation of physics education * Design and plan workshop, seminar, conference, and exhibitions. | **Unit III: Physics Techniques for**  **Higher Learning in the**  **Contemporary Society**  3.1 Overview of different forms of communication and interactions in physics education practice: Workshop; Seminar; Conference; Exhibitions.  (Purpose, concept, objectives, procedure, stages, techniques, AV equipments, scopes and limitations relating to Physics Workshop; Seminar; Conference; Exhibitions.) | **(2pds)** |
| * Elaborate on the characteristic features and the importance of physics laboratory. * Discuss the instructions for handling laboratory apparatus and accessories. * Plan physics resource management with useful tools and techniques. * Describe different aspects of caring/calibrating/handling needs of laboratory apparatus and accessories. * Explain common accidents, safety rules and first-aid treatment method in physics laboratory. | **Unit IV: Physics learning resource**  **and laboratory management**  4.1 Characteristic features of physics  Laboratory and its importance.  4.2 Instructions for handling  laboratory apparatus and  Accessories.  4.3 Useful tools and techniques  4.4 Calibration of instruments and  Measurements.  4.5 Laboratory accidents and safety rules   * Common laboratory accidents. * Preventive measures. * First-aid treatments. | **(3pds)** |
| * Explain the purpose, concepts, and scopes of planning annual strategies, teaching unit, and lesson in Physics Education. * Design instructional materials, extra-curricular activities or co-curricular activities for physics education. * Elucidate critical issues, problem-solving techniques and reasoning abilities relating to physics education in today’s classrooms. * Describe the strategies for fostering an integrated program based on National curriculum. | **Unit V: Planning and designing**  **Physics education**  5.1 Annual Planning, Unit  Planning, Lesson Planning  5.2 Instructional Materials  5.3 Extracurricular activities and co-curricular activities  5.4 Study of critical issues, problem-solving techniques and reasoning abilities as they relate to physics education in today's classrooms.  5.5 Strategies for fostering an  integrated program based on  National curriculum. | **(6pds)** |
| * Explain use of the different evaluation approaches in physics education such as   -Testing purpose  -Testing  -Test items   * Describe following comprehensive evaluation of teaching and learning progress for Physics Education   -Formative evaluation  -Diagnostic evaluation  -Summative evaluation. | **Unit VI: Evaluation and Physics**  **Education**  6.1 Testing purpose, techniques and test items related to physics education  6.2 Strategies for formative,  diagnostic and summative  evaluation for physics education  **iquid Crystal Display (LCD).e.ew).D and E at the interface separating two substances.** | **(3pds)** |
| * Describe purpose and scope of modular approach in physics education and their importance * Explain various aspects and components of physics teaching learning modules. * Develop and use of modular approach to teaching learning physics by Inquiry method. | **Unit VII: Physics Teaching Modules**  7.1 Importance of modules  7.2 Components of modules  7.3 Development of a module using  inquiry method:  (Listing   * Overview, topic, and target group * Objectives * Pretesting * Instructional materials * Post-testing) | **(4pds)** |
| * Explain the applications of the methodological and philosophical foundations of research in Physics education regarding educational research ethics and design, measuring instruments and data manipulation, methodological rigor, evidence-based conclusions, and publication genres to support the development of a professional presentation and formal research paper. | **Units VIII: Research and Physics**  **Education**  8.1 Application of the methodological  and philosophical foundations of  research in physics education.  (Topics include educational research  ethics and design, measuring  instruments and data manipulation,  methodological rigor, evidence-based  conclusions, and publication genres to  support the development of a  professional presentation and formal  research paper.)  (Research topics may include current research on hands-on/inquiry teaching, concept mapping, student misconceptions, learning/teaching styles, alternative assessment, gender differences, learning environments, action research, and knowledge transfer); | **(6pds)** |

**Part II: Practical**

|  |  |  |
| --- | --- | --- |
| **Specific Objectives** | **Contents** | **Teaching hours**  **(48)** |
| * To demonstrate inertia, momentum, and centrifugal force. * To estimate solar radiation coming onto the earth surface. * To study the effect of different medium (metal, wood, and clothing) on electromagnetic transmission to and from mobile sets. * To observe effects of electricity – heat; electrolysis; magnetic effect. * To generate electricity by thermo couple, electrolytic chemical, and simple electromagnetic dynamo. * To study the charging and discharging a given Capacitor. * To observe and estimate the effects of moisture and drying -- shrinking of clay brick and cement slab. * To estimate the effects of clothing on heat exchange to and from human body through conduction, convection and radiation. | **I) Physics Education**  1.1 Demonstrate inertia,  momentum, and centrifugal  Force.  1.2 Solar radiation coming onto  the earth surface.  1.3 Effect of different medium  (metal, wood, and clothing) on  electromagnetic transmission  to and from Mobile sets.  1.4 Demonstrate and estimate the  effects of electricity – heat;  Electrolysis; and magnetic  effect.   * 1. Demonstrate and estimate the   powers of electricity generated – thermo couple, electrodes and electrolytes, electromagnetic dynamo.  1.6 Charging and Discharging of a  given Capacitor.  1.7 Shrinking of clay brick and  cement slab due to drying.   * 1. Effect of clothing (cotton, polyester and wool) on heat exchange to and from human body through conduction, convection and radiation. | **(20pds)** |
| * To review the Physics Education curriculum in Nepal and SAARC region. * To plan a unit on HSEB Physics curriculum. | **II) Physics in School and**  **Teacher Training Curriculum**   * 1. Review of the physics   Education curriculum in Nepal and in SAARC region – study of different curriculum provisions and practices; student seminar presentation.   * 1. Planning a unit on HSEB   Physics curriculum. | **(4pds)** |
| * To Prepare Lesson plan in detail including identification of topic, objectives, specific objectives/learning outcomes, instructional planning, learning activities, instructional materials, evaluation. * To plan comprehensive student examination such as formative tests, diagnostic tests and summative tests for secondary level Physics education. * To prepare comprehensive framework on the basis of the trends, contextual needs. * To prepare concept mapping. | **III) Planning and designing**  **Physics education**   * 1. Lesson planning – Preparing details: identification of topic, objectives, specific objectives/learning outcomes, instructional planning, learning activities, instructional materials, evaluation   2. Planning for comprehensive student examination – Formative tests, diagnostic tests; summative tests for secondary level physics education   3. Curriculum framing – Preparing comprehensive framework on the basis of the trends, contextual needs (identification of Vision, goals, objectives; specification matrix with contents, activities and learning outcomes; instructional planning and materials; evaluation modality and scope)   3.4 Prepare concept mapping. | **(8pds)** |
| * To plan and set of Physics laboratory for student lab work * To make a simple refracting   Telescope and a reflecting telescope.   * To make a simple microscope and a compound microscope. * To calibrate and general   maintenance of physics  equipments and apparatus.   * To convert a galvanometer into an ammeter, a volt meter and ohm meter. * To prepare Improvised Instructional Materials for teaching Science in different Level. * To conduct Seminar on relevant Topics of teaching science. | **IV) Physics learning resource**  **and laboratory management**  4.1 Lab setting – planning and  setting for student lab work  4.2 Making of a simple refracting  telescope and a reflecting  Telescope.  4.3 Making of a simple  Microscope and a compound.  4.4 Calibration and general  maintenance of physics  equipments and apparatus:  prepare and calibrate vernier  calipers, Solar clock/sand  clock, Thermometers.  4.5 Converting a galvanometer  into an ammeter, a volt meter  and ohm meter.  4.6 Preparation of Improvised  Instructional Materials for  teaching Science in different  Level.  4.7 Seminar on relevant  Topics of teaching science. | **(8pds)** |
| * To prepare a Physics teaching/learningmodules. | **V) Physics Teaching Modules**   * 1. Preparation of physics teaching/learning modules – modular packages of learning objectives, learning material/instructional material, activity sequence, evaluation and feedback. | **(4pds)** |
| * To prepare proposal for short Research. | **VI) Research and Physics**  **Education**  6.1 Proposal for short Research. | **(4 pds)** |

1. **Instructional Techniques**

**4.1 General Techniques**

* Seminar: Lecture, question-answer, and discussion
* Workshops: Presentation, participatory activities, follow-up, sum up.
* Demonstration: Demonstration of phenomena, experiments, charts, materials, etc. – question answer, discussion
* Inquiry: generating questions and answers through, dialogues, review, observation, experiments, etc.
* Project work: Hands on activities, collaborative work, research
* Book reviews
* Internet search
* Preparation of charts, presentations, and reports

***Note: Each student must come up with a project work individually or in group but with clear role and responsibility. The teacher and students may decide the project work from the list above or alternative related to the course work.***

**4.2 Specific Instructional Techniques/Activities**

* Most Of the units require project work, problem solving method and power point presentation.
* The teachers may decide the project work related to the course work.

1. **Evaluation Schemes (Internal and External assessment)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Nature of the Course** | **Internal assessment** | **External/ Semester Examination** | **Total marks** |
| Theory cum Practical | 40% | 60% | 100% |

***Note: Students must pass separately in internal assessment, external practical exam / viva and or semester examination.***

**5.1. Internal Evaluation**

**a. Theory + Practical: 40%**

Internal evaluation will be conducted by course teacher based on following activities:

1. Attendance 5 points
2. Participation in learning activities 5 points
3. First assignment 10 points
4. Second assignment exam (term exam) 10 points
5. Third Practical Exam / Project Work 10 points

Total 40 Points

**5.2. a. Theory: External Examination (Full Marks - 40)**

|  |
| --- |
| Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of the semester. |

**Nature of the Question and marks allocated for Theory External Examination:**

|  |  |  |  |
| --- | --- | --- | --- |
| Paper | Nature of the Question | | Total |
| Full Paper 40% | Objective | Subjective |
| 10 Q x 1 mark = 10 | 6 Q x 5 marks = 30 | 40 |

***Note: All questions are compulsory.***

**b. Practical External Examination (Full Marks – 20)**

1. Practical Examination **15**

2. Construction of teaching learning resources using computer skills/models and charts construction/ collection of materials/ Project work report/Record book **5**

***Note: The marking system will be changed to CGPA system as per the rule and regulation of the Academic council.***

**Recommended books and reading materials**

|  |
| --- |
| Aman Rao (1993). Teaching of Physics. Anmol Publications Pvt. Ltd., New Delhi.  Amit Kumar (1999). ‘Teaching of Physical Sciences’, Anmol Publications Pvt. Ltd., New Delhi |
| B.D. Bhatta and S.R. Sharma (1993). Modern Education Series – Method of Science teaching. Delhi. Kanishka Publishing House. |
| C. Shivendra (2006). Contemporary science teaching: New Delhi, Anmol Publication Pvt. Ltd. |
| D. B. Raw (2001). International encyclopedia of science and Technology Education 1- Science and Technology Education. New Delhi. Discovery Publishing House.  Joshi, S.R. (2005). Teaching of Science. New Delhi. A.P.H. Publishing Corporation.  Nagaraju. M.T.V. (2008), ‘Hand Book for Teaching Physical Sciences- Methods and Techniques’, Kanishka Publishers and Distributors, New Delhi. |
| D. Gall Meredith, R. Borg Walter, P. Gall Joyce (1996). Educational research: An introduction. Longman Publishers, NY USA |
| Halliday ,Resnic, Walker (2008): Fundamentals of Physics. 8th edition. Wiley, India Pvt. Ltd. |
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|  |
| L. Cohen and L. Manion (1994). Research Methods in Education. Routledge |
| M.T.V. Nagaraju (2008), ‘Hand Book for Teaching Physical Sciences- Methods and Techniques’, Kanishka Publishers and Distributors, New Delhi |
| R. Mohan ( 2004). Innovative science teaching: New Delhi,Prentice-Hall of India Pvt Ltd. |
| R.C. Sharma (1987), ‘Modern Science Teaching’. DhanpatRai and sons, New Delhi |
| Tom Duncan (2004). Advanced Physics. 5th edition. John Murray Publishers Ltd. |
| U. K. Sing and A.K. Nayak (1997). Perspectives in Modern Education Series, Science Education. New Delhi. Commonwealth Publisher |
| UNESCO (1997). Innovations in science and technology education Edited by Edgar W. Jenkins. The Author |
| Y.S. Lincoln and E.G. Guba (1985) Naturalistic Inquiry. Sage Publications |

Course Title : **Statistical Mechanics and Atmospheric Physics**

Course No. : Phy.Ed .536Nature of course: Theory (T) + Practical (P)

Level : M. Ed. in Physics Education Teaching hours: 80 (32 T+ 48P)

Credit hours : 3(2T+1P) Period/week: 2(T) +3pds/day/week/gr (P)

Semester : Third

1. **Course Description**

This course aims to provide knowledge in the field of Statistical Mechanics and Atmospheric Physics. It has two sections – Theory and Practical. Group A of theory section includes the topic statistical mechanics which covers classical statistical physics and postulates of quantum statistical mechanics. Group B of theory section include the topic atmospheric physics which covers the atmosphere, the sun, atmospheric ozone, radiation measurements and thunderstorms and tornadoes.

This course also includes practical works from the Statistical Mechanics and Atmospheric Physics The aim of this course is to develop knowledge and skills required to conduct Physics practical classes.

1. **The general objectives of the course**

The general objectives of the course are as follows:

1. Provide the students with adequate theoretical knowledge of Statistical Mechanics and Atmospheric physics.
2. Develop problem solving skills in Statistical Mechanics and Atmospheric physics.
3. Provide students adequate practical knowledge of Statistical Mechanics and Atmospheric physics.
4. Develop skills to students to perform experiments using scientific instruments and apparatus, including techniques of operation, aspects of safety/precaution and techniques of statistics
5. Enable the students in designing and planning investigations
6. Make students to understand the correlation between theory and the experiment.
7. Enable students in following a detailed set or sequence of instructions.
8. **Specific Objectives and Content**

**Part I: Theory**

|  |  |  |
| --- | --- | --- |
| **Specific Objectives** | **Contents** | **Teaching Hours (32)** |
|  | 1. **Statistical Mechanics** | **(12pds)** |
| * Explain microstate and macrostate with examples. * Define the term Phase space and Ensemble and write down its type. * Explain the division of phase space into cells. * Describe briefly the term constraints and accessible state. * Explain Thermodynamic   Probability.   * Describe postulates of statistical mechanics. * Derive the relation between the entropy and probability. * Explain Boltzmann’s canonical distribution law and prove it. * Derive an expression of Maxwell’s distribution law of velocities. * Write down the conditions of Maxwell-Boltzmann statistics and derive the number of particles in particular cell by using M-B statistics. * Explain partition function. * Define degree of freedom and explain law of equipartition of energy. * Solve simple numerical examples related to above topics. | **Units I: Classical Statistical Physics.**  1.1 Microstate and Macrostate.  1.2 Phase-space and Ensemble.  1.3 Division of phase space into cells.  1.4 Constraints and accessible state.  1.5 Thermodynamic probability.  1.6 Postulates of statistical  Mechanics.  1.7 Entropy and probability.  1.8 Boltzmann’s canonical distribution  Law.  1.9 Maxwell’s distribution law of  Velocities.  1.10 Maxwell- Boltzmann statistics.  1.11 Law of equipartition of energy. | **(7pds)** |
| * Write down the postulates of quantum statistical mechanics. * Discuss the concept of identical particles. * Write down the conditions of Bose-Einstein statistics and derive the number of particles in particular quantum states by using Bose-Einstein statistics. * Write down the conditions of Fermi-Dirac statistics. Derive the number of particles in particular quantum states by using Fermi-Dirac statistics. * Explain F-D statistics gas in metals or electron gas. * Describe Fermi level and energy. * Solve simple numerical examples related to above topics. | **Units II: Quantum Statistical**  **Mechanics.**  2.1 Postulate of quantum statistical  Mechanics.  2.2 Identical particles  2.3 Bose-Einstein statistics.  2.3 Fermi-Dirac statistics.  2.4 Fermi-Dirac statistics gas in metals.  2.5 Fermi level and energy. | **(5pds)** |
|  | 1. **Atmospheric Physics** | **(20pds)** |
| * Describe atmospheric compositions. * Explain temperature profile of various layers. * Describe atmospheric thermodynamics. * Discuss the stability of atmosphere. * Describe greenhouse effect. | **Unit III: The atmosphere**   * 1. Atmospheric compositions.   2. Temperature profile   3. Atmospheric thermodynamics   4. Atmospheric stability   5. Green House effect | **(3pds)** |
| * Describe Sun as a source of energy. * Define Solar constant and derive an expression for it and explain its determination. * Explain solar radiation outside the earth atmosphere. * Discuss the solar spectrum. * Solve simple numerical examples related to above topics. | **Unit IV: The sun**   * 1. Sun as a source of energy   2. Solar constant and its determination   3. Solar radiation outside the earth   atmosphere.   * 1. Solar spectrum | **(2pds)** |
| * Explain UV-radiation and its types. * Describe the process of formation of ozonosphere: Natural and anthropogenic processes. * Provide the details of tropospheric and stratospheric ozone layers. * Differentiatebetween good and bad ozone and explain how they can be measured. * Explain the meaning of ozone depletion. * Explain process of protection of ozone layers. * Discuss the measurement of UV-B radiation on the earth’s surface. * Explain the total ozone concentration and its measurement. * Solve simple numerical examples related to above topics. | **Unit V: Atmospheric Ozone**   * 1. UV radiation and its types   2. Formation of ozonosphere.   3. Tropospheric and stratospheric ozone layers   4. Ozone depletion   5. Protection of ozone layer   6. Measurement of UV-B radiation on the earth’s surface   7. Total ozone concentration and its measurement. | **(5pds)** |
| * Explain radiation detectors like Thermopile and Bolometer with their necessary theory and working. * Describe theory, construction and applications of pyranometers. * Discuss theory, construction and applications of pyranometers. * Explain pyranometer with its necessary theory and applications. * Explain the theory, construction and working of UV and IR meters. | **Unit VI: Radiation Measurements**   * 1. Radiation detectors      1. Thermopile      2. Bolometer   2. Pyrheliometers   3. Pyranometers   4. UV meter   5. IR meter | **(5pds)** |
| * Explain Thunderstorms and its types. * Describe the stages of development of thunderstorm. * Discuss the hazards of thunderstorms. * Explain Tornadoesand stages of development of tornadoes. * Discuss the hazards of tornadoes. * Describe the introduction for lightning and thunder. * Categorize and explain the lightning from cumulonimbus cloud. * Explain artificial lightening * Discuss the effects of lightening. | **Unit VII: Thunderstorms and**  **Tornadoes**   * 1. Introduction of Thunderstorms   2. Types of Thunderstorms   3. Stages of development   4. Hazards   5. Tornadoes   6. Stages of development   7. Hazards   8. Lightning and thunder   9. Categorization of lightening from cumulonimbus cloud   10. Artificial lightening   11. Effects of lightening | **(5pds)** |

**Part II: Practical**

|  |  |  |
| --- | --- | --- |
| **Practicals** | **Contents** | **Teaching hours**  **( 48 hrs)** |
| 1. **Statistical Mechanics** | | |
| * To verify the laws of probability distribution throwing one coin, two coins and ten coins. * To show that derivation of probability from theoretical value decrease with increase in number of events. | Laws of Probability | 6 |
| * To study the statistical distribution from the given data and to find most probable, average and rms values. | Statistical distribution | 3 |
| * To study the random decay of nuclear disintegration and determine decay constant by using dices. | Use of Statistical techniques | 3 |
| 1. **Atmospheric Physics** | |  |
| * Study the Greenhouse effect in your local area and make a report on it | Green House Effect | 6 |
| * Determine the solar constant | Solar Constant | 3 |
| * Study the recent research articles related with Ozone depletion and its protection and write a report on it | Ozone Depletion | 6 |
| * Study the applications of Radiation detectors and write a report on it. | Radiation detectors   * Thermopile * Bolometer * Pyrheliometers * Pyranometers * UV meter * IR meter | 15 |
| * Study the related articles about the effects of lightning in society and write a report on it | Lightning | **6** |

1. **Instructional Techniques**

**4.1 General Techniques**

* Lecture Method
* Demonstration Method
* Discussion Method
* Inquiry Method
* Project Method
* Collaborative Method

**4.2 Specific Instructional Techniques/Activities**

* Most of the units require project work, problem solving method and power point presentation.
* The teachers may decide the project work related to the course work.

1. **Evaluation Schemes (Internal and External assessment)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Nature of the Course** | **Internal assessment** | **External/ Semester Examination** | **Total marks** |
| Theory cum Practical | 40% | 60% | 100% |

***Note: Students must pass separately in internal assessment, external practical exam / viva and or semester examination.***

**5.1. Internal Evaluation**

**a. Theory + Practical: 40%**

Internal evaluation will be conducted by course teacher based on following activities:

1. Attendance 5 points
2. Participation in learning activities 5 points
3. First assignment 10 points
4. Second assignment exam (term exam) 10 points
5. Third Practical Exam / Project Work 10 points

Total 40 Points

**5.2. a. Theory: External Examination (Full Marks - 40)**

|  |
| --- |
| Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of the semester. |

**Nature of the Question and marks allocated for Theory External Examination:**

|  |  |  |  |
| --- | --- | --- | --- |
| Paper | Nature of the Question | | Total |
| Full Paper 40% | Objective | Subjective |
| 10 Q x 1 mark = 10 | 6 Q x 5 marks = 30 | 40 |

***Note: All questions are compulsory.***

**b. Practical External Examination (Full Marks – 20)**

1. Laboratory Examination **15**

2. Construction of teaching learning resources using computer skills/models and charts construction/ collection of materials/ Project work report/Record book **5**

***Note: The marking system will be changed to CGPA system as per the rule and regulation of the Academic council.***

**Recommended books and reading materials**

Frederick Kutgens& Edward T. Tarbuck; (2012); ***The atmosphere an introduction to meteorology***; Prentice Hall; India (For unit- IV & VII)

Goody R. M; Walker J. C. G., (1972) ***Atmospheres***Prentice Hall India (For Unit-III &IV)

Goody R. M., and Yung Y. L. (1989); Atmospheric Radiation. OxFord University Press.

Huang K ;( 1987); ***Statistical Mechanics***; John Wiley, India. (For Unit-I &II)

IIyasM.; ***Ozone Depletion***; University of science, Malaysia, Penang, Malaysia.(For unit- V)

Liou K.N. ;( 1980); ***an introduction to Atmospheric radiation***; Academic press Inc. New York (For Unit- VI)

Martin A. Uman;(1987);***The Lightning Discharge***; Academic Press, Inc. Orlando, Florida. (For Unit-VII)

Sharma, Singh, Prasad (2008), ***Degree level Practical Physics***, BharatiBhawan Pub., Patana.

Singh Harman, Dr. Hemne P.S.(2011), ***B.Sc. Practical Physics***, S.Chand& Co. Ltd., New Delhi.

Duffie John A., Beckman William A., (2013), Solar Engineering of Thermal Processes, 4th Edition, ISBN: 978-0-470-87366-3, John Wiley & Sons. Inc.

**Reference materials**

Arora C.L. (2009), ***B.Sc. Practical Physics***, S.chand& Company (Pvt.) Ltd., New delhi.

Halliday, Resnick&Krane(2009), ***Laboratory Physics***, John Wiley & Sons, Singapore.

Khandelwal D.P and Pande, A.K ;( 2010); ***Thermodynamics and Statistical physics***; Himalayan Publishing House, Bombay.

Mittal R.S., Singal S. ;( 1995); ***Laboratory manual in Physics***; Arya Book Depot; Karol Bagh, New Delhi.

Patharia ,ButterWorth;(1970);***Statistical mechanics***; Heinemann publication, New Delhi, India.

R. Murugeshan and K. Sivaprasath; (2012); ***Modern Physics***; S. Chand and Company Ltd, New Delhi.

**Course Title: Astrophysics and Seismology**

Course code: Phy.Ed.537 Nature of course: Theoretical

Credit hour: 3 Teaching hours: 48

Level: M.Ed. in Physics Pds/week:3

Semester: Third

**1. Course Description**

This course aims to give basic concept on Astrophysics and Seismology. It is divided into two groups. Group A includes the topic Astrophysics which covers general astronomy, stellar atmospheres, structure and evolution and observational and computational astronomy. Group B include the topic seismology which covers history and elastic theory, Amplitudes of space motion due to seismic waves by a spherically stratified earth model, the earthquake and statistics, seismicity of Himalayas and earthquake hazards.

**2. General Objectives of the Course**

The general objectives of this course are to enable students.

1. To acquire adequate knowledge on astrophysics and seismology.
2. To be familiar with modern concept on astrophysics and seismology.
3. To apply the skills to solve numerical problems on astrophysics and seismology.
4. To develop the knowledge on the history and elastic theory, earthquake and statistics, seismograph, seismic hazard and risk with special reference to Nepal as well as heavenly bodies.
5. **Specific Objectives and Contents:**

|  |  |  |
| --- | --- | --- |
| **Specific Objectives** | **Contents** | **Teaching**  **Hours (48)** |
|  | A: Astrophysics | (27 pds) |
| * Discuss History and development astronomy and astrophysics on the basis of Chinese astronomy, Indian astronomy, Islamic and Maso American astronomy. * Define and explain intensity, flux density and luminosity. * Explain equatorial and galactic co-ordinate system. * Define and explain solar, sideral and universal time. * Define stellar parallax and proper motion of the star. * Explain how distance of star is estimated. * Define and explain apparent and absolute magnitude. * Derive relation between distance and magnitude. * Explain extinction and optical thickness and derive relation between them. * Explain colour index, UVB photometry and colour excess. * solve simple numerical problem related to above topics. | Unit I : General astronomy  1.1 History and development of astronomy and astrophysics  1.2 Intensity, flux density and luminosity  1.3 System of co-ordinates  1.3.1 Equatorial and galactic  1.4 Astronomical time system  1.4.1 Solar time, sideral time and universal time  1.5 Stellar parallaxes  1.6 Proper motion  1.7 Distance estimation  1.8 Stellar magnitudes  1.8.1 Apparent and absolute  1.8.2 Distance magnitude relation  1.9 Extinction and optical thickness  1.10 Colour index  1.11 UVB photometry  1.12 Colour excess | (10 pds) |
| * Derive equation of hydrostatic equilibrium * Define mass continuity equation * Derive central pressure of star by using hydrostatic equilibrium and mass continuity equation. * Explain liner stellar model and derive the temperature and pressure distribution in the star. * Derive an equation the pressure exerted by non-degenerate ionized gases in the interior of star. * Show that radiation pressure is equal to the gas pressure. * Show that radiation pressure is proportional to fourth power of temperature. * Discuss and derive the pressure exerted by the on-relativistic electron degenerate gas. * Discuss and derive the pressure exerted by the relativistic electron degenerate gas in the interior of the star. * Discuss the nature of Lame-Emdan equation and its solution * Derive mass, density, pressure and temperature profile of degenerate star cores (red giant, white dwarf, etc) using polytropic index n = 1.5. * Derive mass density pressure and temperature profile of degenerate neutron star using polytropic index n= 1. * Explain the term neutron drip. * Explain local thermodynamic equation. * Explain Giant branch, Helium flash, horizontal branch, asymptotic giant branch when mass of star is less than 8 M sun in the main sequence. * Explain supernovae Type I and types II when mass of star is greater than 8 M sun in the main sequence. * Explain interstellar dust, gas and molecules. * Solve some numerical problems related to above topics. | **Unit II: Stellar Atmospheres, Structures and evolution**  2.1 Hydrostatic equilibrium  2.2 Mass continuity equation.  2.3 Central pressure of star  2.4 Linear stellar model  2.5 Non-degenerate gas pressure  2.6 Radiation pressure  2.7 Degenerate gas pressure  2.8 Polytrope  2.9 Modeling degenerate star  2.10 Local thermodynamic equation  2.11 Post main sequence evolution  2.12 Interstellar gas, dust and molecules | 12 (pds) |
| * Explain optical, Optical, infrared, radio, microwave, X-ray and Gamma ray Astronomy. * Discuss Multi wavelength study. * Process the image and analyze their spectrum. * Extract the original by SIMBAD, NED and Sky view. * Analyze the image and process the data using Aladin software. | **Unit III: Observational and Computational Astronomy**  3.1 Optical, infrared, radio, microwave, X-ray and Gamma ray Astronomy.  3.2 Multi wavelength study.  3.3 Image processing and spectrum analysis.  3.4 Original data extraction:  SIMBAD, NED and Sky view.  3.5 Data processing and image reduction:  ALADIN software. | (5 pds) |
|  | **B. Seismology** | (21 pds) |
| * Discuss the history of seismology. * Explain stress tensor, principle exes of stress and strain tensor. * Derive linear stress strain relationship. * Derive a relation energy in an perfect elastic body. * Derive and explain energy in seismic wave. * Solve simple numerical problems related to above topics. | Unit IV: History and Elastic Theory  4.1 Brief history of seismology.  4.2 Stress tensor  4.3 Principle axes of stress  4.4 The strain tensor  4.5 The linear stress strain relationship.  4.6 Energy in a perfect elastic body.  4.7 Energy in seismic wave | (4 pds) |
| * Derive energy per unit area pf wavefront in an emerging wave. * Relate energy with amplitude. * Explain movement of surface arising from an incident wave of given amplitude. * Explain amplitude as a function of ∆. * Discuss loss of energy during transmission through medium. * Explain amplitudes corresponding to cusps in (T, ∆) * Explain amplitude of surface seismic waves. * Solve simple numerical problems related to above topics. | **Unit V: Amplitudes of space motion due to seismic waves by a spherically stratified earth model**  5.1 Energy per unit area of wave-front in an emerging wave.  5.2 Relation between energy and amplitude.  5.3 Movements of the outer surface arising from an incident wave of given amplitude.  5.4 Amplitude as a function of angle between radii drawn from hypocenter and from a point on the surface (∆)  5.5 Loss of energy during transmission through medium.  5.6 Amplitudes corresponding to cusps in (T, ∆)  5.7 Amplitudes of surface seismic waves. | (5 pds) |
| * Explain elastic rebound model: Causes of earthquake. * Describe strain energy before an earthquake. * Derive and explain strain energy before an earthquake. * Explain dip, rake and discuss earthquake faults. * Explain double couple model with moment tensor. * Explain focal mechanism. * Explain modern Seismograph. * Explain near field term, far field term with P and S waves. * Explain near field, far field, spectrum. * Explain rupture, directivity effects. * Explain energy released in earthquakes using Jeffreys formula and Gutenberg and Richter. * Write down formula to find earthquake magnitude and discuss it. * Write down Gutenberg and Richter formula to establish relation between magnitude energy and frequency and explain. * Define and explain fore shocks and aftershocks. * Explain earthquake prediction with precursors. * Solve simple numerical problems related to above topics. | **Unit VI: The earthquake and statistics**  6.1 Elastic rebound model: Causes of earthquakes.  6.2 Strain energy before an earthquake.  6.3 Earthquake faults.  6.4 Double couple model.  6.5 Focal mechanism and plotting focal mechanism.  6.6 Modern seismograph,  6.7 Radiation pattern and beach balls.  6.8 Far field pulse shapes.  6.9 Directivity.  6.10 Energy released in earthquake.  6.11 Earthquake magnitude.  6.12 Magnitude, energy and frequency.  6.13 Fore shocks and after shocks.  6.14 Earthquake prediction. | (7 pds) |

|  |  |  |
| --- | --- | --- |
| * Explain Himalayan and plate tectonic with disappearance of Tethys sea. * Define Seismicity and explain Seismicity of Nepal Himalaya regarding faulting and thrusting. * Explain Seismic network in Nepal with map. * Discuss major earthquake in Nepal. * Explain the term earthquake Hazards and risk. * Discuss the Mitigation of earthquake risk. * Discuss Seismic zoning and microzoning. * Explain Design of earthquake- resisting structure. * Solve simple numerical problems related to above topics. | **Unite VII: Seismicity of Himalayas and Earthquake Hazard**  7.1 Himalayan tectonics and plate tectonic view.  7.2 Seismicity of Nepal Himalaya.  7.3 Seismic network in Nepal.  7.4 Major earthquake in Nepal.  7.5 Earthquake Hazards and risk.  7.6 Mitigation of earthquake risk.  7.7 Seismic zoning and microzoning.  7.8 Design of earthquake- resisting structure. | (5pds) |

1. **Instructional Techniques**

Discussion (Discussion among peers, discussion with teachers and with the experts)

Demonstration method and power point presentation

Inquiry method

Project method

Cooperative and collaborative methods

Paper writing and presentation in the classrooms

Home assignments and class participation

Internet (web) surfing

Report writing and presentation

Team teaching and feedback session

Survey method

## Evaluation

### Internal Evaluation

Forty percent of total marks are allocated to internal evaluation. Internal evaluation will be conducted by course teacher based on the following activities:

|  |  |  |
| --- | --- | --- |
| 1. | Attendance | 5 points |
|  | Classroom activities | 5 points |
| 2. | First assignment | 10 points |
| 3 | Second assignment | 10 points |
| 4. | Third assignment | 10 points |
| **Total** |  | 1. **points** |

### External Evaluation (Final Examination)

Examination Division of the office of the Dean, Faculty of Education will conduct final examination at the end of semester. Sixty percent of the marks are allocated to the final examination. The types and number of questions to be included in the final examination are as follows:

|  |  |  |
| --- | --- | --- |
| 1. | Objective type question (Multiple choice: 10 questions x1 point) | 10 points |
| 2. | Short answer questions (6 questions x 5 points) | 30 points |
| 3. | Long answer questions (2 questions x 10 points) | 20 points |
| ***Total*** |  | ***60 points*** |

***Note: The marking system will be changed to CGPA system as per the rule and regulation of the Academic council.***

**RecommendedBooks:**

Bhatia V.B. (2001), Textbook of Astronomy and Astrophysics with Elements of Cosmology, Narosa Publishing House New Delhi. (Unit I, II)

Bullen K.E. and Bolt B.A. (1985), An introduction to the theory of seismology, Cambridge University Press, London. (Unit IV, V, VI)

Hannu Karttunen, Pokka Kroger, Heikki, Oja, Markku Poutanen, Karl, J. Punner (2007), Fundamental Astronomy 5th edition. Springer , Berlin, Heidelberg, New York. (Unit I, II)

http://skyview.gsfc.nasa.gov (Unit III)

Journal National seismological Network and its contribution in seismological Research in Nepal Himalaya, Department of Mines and Geology (2007, 2012) (Unit VII)

Seismonepal.gov.np (Unit VII)

Shearer, Peter M. (2009), An introduction to the theory of seismology, second edition. Cambridge University Press. London. (Unit IV, V, VI, VII)

Stacy Palen (2004), Schaum's outlines astronomy. MC Graw Hill. (Chapter II, III)

**Reference Book**

Richer C.F. (1995). Elementary Seismology, Narosa Publishing House,India.

# Course Title: Advanced Research Methodology in Science

# Education

# Course code : Phy. Ed. 538 Nature : Theoretical

# Level : M.Ed in Physics Periods/ week : 3

# Credit Hours: 3 Teaching hours : 48

Semester: Fourth

# Course Description

This course on "Advanced Research Methodology in Science Education" aims to provide students with an in-depth insight into the pursuit of research in qualitative and quantitative approach in Science education. It intends to develop their skills on statistical analysis with a focus on Science and Science education research, application of descriptive and inferential statistics in analyzing quantitative and qualitative data. It further deals with research proposal including report writing procedures in Science education.

1. **General Objectives**

The general objectives of this course are to:

* provide students with an opportunity to understand inquiry based research with its application.
* interpret the nature and fundamentals of research in Science education.
* carry out an academic research as a cohesive and coherent piece of work.
* provide the students with hands on experience on statistical tools in data analysis.
* enable the students to prepare research report using appropriate methods and approaches.

1. **Specific Objectives and Contents**

|  |  |
| --- | --- |
| **Specific Objectives** | **Contents** |
| * Introduce scientific method of research. * Elaborate the meaning of inductionism and deductionism in terms of Science education research. * Appraise critically the oriental and western philosophy of Science and research traditions. * Apply qualitative and quantitative methods in Science education research. * Analyze the Science education with respect to scientific research approaches. * Explain the role of theories in Science education research. * Illustrate the research approaches and methods. * Discuss the sampling strategies and sources of data collection techniques. | **Unit 1. Science and Science Education Research (13 hrs.)**   * 1. Nature of sciences, non-science and pseudoscience   2. Types of research and inquiry methods   3. Concept of scientific methods and research methods in Science education   4. Scientific methods: * Induction and inductivism * The scientific revolution * Kuhn's revolutionary theory * Relativism in science   1. Principles of scientific methods in Science   1.6. Oriental and western philosophy in Science research traditions   * 1. Concept of theories and models in Science   2. Roles of theories in Science education   3. Research approaches and methods * Survey research in Science education * Comparative and correlational research in   Science education   * Experimental research in Science education * Interpretive and qualitative research in Science education * Action research in Science education * Mixed method research in Science education   1. Basic steps in the process of research   2. Sampling strategies   3. Sources and types of data in Science education |
| * Use appropriate statistical tools in research in science education. * Interpret different approaches of data analysis in quantitative research. * Calculate the mean, median and standard deviation and apply it in the science education research. * Identify the confidence limit for small and large samples. * Use SPSS for calculating and visualizing the descriptive data. * Identify the procedure of hypothesis testing. * Test hypothesis by Z-test, t-test and χ2-test. * Apply parametric and non-parametric tests in scientific research. * Use SPSS for calculating and visualizing the inferential data. | **Unit 2. Application of descriptive and inferential statistics in analyzing quantitative data (21 hrs.)**   * 1. **Data management and Descriptive statistics**      1. General principles of data analysis      2. Data management and processing: Data checking, editing, coding, recoding, data entry      3. Data entry in SPSS programme      4. Displaying data in frequency and cross tables, and figures using SPSS      5. **An overview of descriptive statistics** * Measures of central tendency * Measures of dispersion * Measures of correlation * Simple regression   **2.2 Inferential Data Analysis**  2.2.1 Parametric tests   * Hypothesis testing * t-test * Z-test   2.2.2 Non-parametric test  χ2-test |
| * Interpret qualitative data analysis process in science education. * Explain approaches of qualitative data analysis. * Demonstrate skills required for qualitative data analysis. * Describe the use of software in qualitative data analysis. | **Unit 3. Qualitative Data Analysis (5 hours)**   * 1. Concept of qualitative data analysis   2. Approaches of qualitative data analysis:   Thematic, inductive and domain   * 1. Steps in qualitative data analysis   2. Introduction to qualitative data analysis software: Atlas/ti and Nvivo |
| * Outline the format of research proposal and requirements for research report. * Describe the components of research proposal and report writing. * Prepare research proposal in Science education. * Use APA format in thesis writing. | **Unit 4. Research Proposal and Report Writing (9 hrs.)**   * 1. **Proposal development** * Select appropriate title/problem for Science education research * Components of research proposal * Steps in developing research proposal * Formulation of research work schedule   1. **Report Writing Techniques** * Format of research report * Steps in research report writing * Techniques of citation and referencing: APA style |
|  |  |

***Note:*** *The figures in the parenthesis indicate the appropriate teaching hours for the respective units*.

1. **Instructional Techniques**

* Lecture method
* Discussion
* Inquiry method
* Project method
* Cooperative and collaborative learning methods
* Proposal writing and presentation in the classroom
* Home assignments
* Team teaching and feedback session
* Group activities

## Evaluation

### Internal Evaluation

Forty percent of total marks are allocated to internal evaluation. Internal evaluation will be conducted by course teacher based on the following activities:

|  |  |  |
| --- | --- | --- |
| 1. | Attendance | 5 points |
|  | Classroom activities | 5 points |
| 2. | First assignment | 10 points |
| 3 | Second assignment | 10 points |
| 4. | Third assignment | 10 points |
| **Total** |  | 1. **points** |

### External Evaluation (Final Examination)

Examination Division of the office of the Dean, Faculty of Education will conduct final examination at the end of semester. Sixty percent of the marks are allocated to the final examination. The types and number of questions to be included in the final examination are as follows:

|  |  |  |
| --- | --- | --- |
| 1. | Objective type question (Multiple choice: 10 questions x1 point) | 10 points |
| 2. | Short answer questions (6 questions x 5 points) | 30 points |
| 3. | Long answer questions (2 questions x 10 points) | 20 points |
| ***Total*** |  | ***60 points*** |

***Note: The marking system will be changed to CGPA system as per the rule and regulation of the Academic council.***

**Recommended books**

American Psychological Association (2010). *Publication Manual of American Psychological Association* (6th edition). Washington DC: APA. (For unit 4)

Best, W. & Kahn V. (2000). *Research in Education*. 7th Edition; Prentice Hall of India Pvt. Ltd. New Delhi. (For unit 3)

Guba, E. and Lincoln, S. Y. (1998). *The landscape of qualitative research: Theories and Issues*, Thousand Oaks: Sage Publication. (For unit 1)

Fraser, B J., et. all. (2012). *Second International Hand Book of Science Education*. Springer International Handbooks of Education. Vol II. New York, USA. (For units I and II)

Joshi, P. R. (2010). *Research Methodology* (4th edition). Buddha Academic Publishers and Distributors Pvt. Ltd., Kathmandu, Nepal. (For units 1 and 2)

**Reference Books**

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