Far Western University
Faculty of Education
Bachelor's in Computer Science Education

Course Title: Artificial Intelligence
Course No.: CS. Ed. 476
Semester: Seventh Semester
Level: Undergraduate

Nature of the Course: Theory and Practical
Credit Hour: 3
Teaching Hrs: 48+16
Full marks: 40+40+20

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1. Course Introduction

This course is designed to provide conceptual and practical knowledge of Artificial Intelligence with special focus on educational applications. The course introduces intelligent agents, problem-solving techniques, knowledge representation, expert systems, machine learning, deep learning, natural language processing, and computer vision.

The course enables students to implement simple AI modules using basic algorithms and tools to solve real-world educational problems such as student performance prediction, classification, recommendation systems, chatbot development, and simple image-based applications. The course maintains a moderate level by focusing on conceptual clarity and guided implementation rather than heavy mathematics.

2. Objectives

The main objective of this course is to develop foundational and practical understanding of Artificial Intelligence and enable students to design and implement basic AI-based applications.

Objectives are:

- To understand the fundamental concepts and scope of Artificial Intelligence
- To learn intelligent agents and AI problem-solving techniques
- To understand knowledge representation and rule-based expert systems
- To implement basic FOPL operations in Prolog
- To understand neural networks and deep learning concepts
- To explore NLP and Computer Vision processing techniques
- To use AI tools in teaching-learning environments
- To develop small AI modules for real-world educational problems
- To understand ethical and social issues in AI

3. Specific Objectives and Contents

Specific Objectives	**Contents**
	UNIT I: Introduction to Artificial Intelligence (4 hr)
• Define AI and Identify real-world applications	1.1 Introduction to Artificial Intelligence and Applications of AI
• Describe history and evolution of AI	1.2 History and development of AI
• Define knowledge and learning	1.3 Definition and importance of knowledge and learning
• Different types of learning	1.4 Various forms of learnings
• Compare AI and human intelligence	1.5 AI vs Human Intelligence
	UNIT II: Intelligent Agents and Problem Solving (9hr)
• Explain the concept of intelligent agents	2.1 Introduction to intelligent agents
• Identify types of agents	2.2 Types: Simple reflex, Model-based, Goal-based, Learning agents
• Understand agent–environment	2.3 AI Agent architecture and PEAS model in AI

interaction	
• Understand problem formulation in AI	2.4 Problem-solving concepts: initial state, goal state, actions
• Understand the concept of CSP including variables, domains, and constraints. • Formulate and solve problems like 8-Puzzle, N-Queen, Graph Coloring, Water Jug, Missionaries and Cannibals, and Crypt-Arithmetic using CSP techniques. • Apply appropriate search and backtracking methods to find valid solutions.	2.5 Concept of CSP: variables, domains, and constraints; state-space representation; backtracking and search strategies. 2.5.1 Applications of CSP including: • 8-Puzzle Problem • N-Queen Problem • Graph Coloring Problem • Missionaries and Cannibals Problem • Water Jug Problem • Crypt-Arithmetic Problem
• Explain search methods and their role	2.6 Search techniques: Uninformed search(Breadth First Search, Depth First Search),Informed search methods (Greedy search, A* search, Genetic Algorithm)
• Apply the Alpha-Beta pruning technique to optimize adversarial search and improve game-playing efficiency.	2.7Adversarial Search Techniques: Min-Max Algorithm, Alpha-Beta Pruning
	UNIT III: Knowledge Representation and Expert Systems (5 hr)
• Understand knowledge representation methods	3.1 Knowledge and types of knowledge
• Explain rule-based reasoning	3.2 Knowledge representation: Semantic networks, Rule-based systems, frames(concept)
• Understand expert system, Explain its components and architecture	3.3 Expert system, Components and Architecture of Expert System
• Explain inference engine methods	3.4 Reasoning techniques: forward chaining and backward chaining
• Understand rule-based algorithmic approach	3.5 IF–THEN rule formation
• Understand development steps	3.6 Steps to develop a simple expert system and educational applications
	UNIT IV: FOPL and Prolog(9 hr)
• Understand the basics of FOPL and its importance in representing knowledge in AI.	4.1 Introduction to First Order Predicate Logic (FOPL)
• Learn about constants, variables, predicates, functions, and use of universal and existential quantifiers in logical statements.	4.2 Basic Elements of First-Order Logic, Quantifiers (Universal ∀ and Existential ∃)
• Apply logical connectives (AND, OR, NOT, IMPLIES, EQUIVALENT) and inference rules (Modus Ponens, Modus Tollens) to derive conclusions.	4.3Logical Connectives and Inference Rules
• Understand the resolution method and use it to prove or refute logical statements in AI.	4.4Resolution Refutation System (RRS)
• Learn Prolog as a logic programming language and its applications in AI problem-solving.	4.5Introduction to Prolog and its role in AI

• Represent knowledge in Prolog using facts, rules, variables, and execute queries for reasoning.	4.6 Facts, Rules, Variables and Queries in Prolog
• Install Prolog and write basic programs to practice logical reasoning and problem-solving.	4.7 Installation of Prolog, Simple Prolog Programs
	UNIT V: Neural Networks and Deep Learning Basics(8 hr)
Understand inspiration of neural networks	5.1 Biological Neuron vs Artificial Neuron
• Understand neural network concepts	5.2 Artificial Neural Network basics, (Input Layer, Hidden Layer, Output Layer)
Learn working process	5.3 Neural network learning process: weights, activation and training concept
• Understand perceptron model, Single layer perceptron with basic logic gates	5.4 Perceptron, Implement Basic Logic Gates with Perceptron
• Understand deep learning idea	5.5 Introduction to Deep Learning
• Introduce deep learning models	5.6 Introduction to CNN and RNN (conceptual)
• Identify DL tools	5.7 Introduction to TensorFlow and Keras
	UNIT VI: Natural Language Processing (5 hr)
• Understand language processing steps	6.1 Introduction to NLP
• Learn text preprocessing methods	6.2 Text preprocessing techniques: (tokenization, stop-word removal, stemming)
• Understand language representation	6.3 Text representation techniques :(TF-IDF and Bag-of-Words concept)
• Learn NLP processing pipeline	6.4 Text processing flow: Input → cleaning → feature extraction → output
Develop simple NLP-based applications	6.5 Implementation concepts (such as rule-based chatbot OR simple sentiment analyzer using basic machine learning techniques)
	UNIT VII: Computer Vision and Image Processing (5 hr)
• Understand digital image basics	7.1 Introduction to computer vision and images as pixel data
• Learn image preprocessing steps	7.2Image preprocessing methods (Image resizing, cropping, grayscale conversion)
• Understand feature extraction concept	7.3 Feature extraction and object recognition (Pattern recognition and object detection: Concept)
• Learn vision processing pipeline	7.4 Image input → preprocessing → feature extraction → classification
• Identify applications	7.5 Face detection, object recognition, attendance systems
	UNIT VIII: AI Tools in Education and Ethics (3 hr)
• Use AI tools for teaching-learning	8.1 AI tools for content creation and assessment
• Understand personalized learning	8.2 Smart classrooms and adaptive learning systems
• Identify ethical concerns	8.3 AI ethics, bias, privacy, and responsible use

4. Methodology and Techniques

Modes of instruction*:* Lecture, seminar, exercise course, guided personal study, tutorial, independent study, project work, Assignments in different topics, group discussion, reflective writing

Types of learning activities

Attending lectures, performing specific assignments, writing papers, independent and private study, reading books, journals and papers, providing constructive feedback, group study and peer discussion.

5. Evaluation Scheme

5.1 Internal Evaluation 40%

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

a) Attendance and Participation in class activities: 5+5=10marks

b) Assignment I: Reflective Notes and Class presentation: 5+5=10marks
(Reflectivenoteson2to4questionsgivenbyteacherattheend of the every unit and presentation on any two questions among them)

c) Assignment II: One Term paper/Essay/Project and Interview: 5+5=10marks
(Logical essay /term paper /project on the topics chosen by students and approved by the teacher and interview)

d) Mid-term exam: 10marks

5.2 External Evaluation (Final Examination) 40%

Types of questions	**Total questions to be asked**	**Number of questions to be answered and marks allocated**	**Total marks**
Group A: Multiple choice items	8 questions	8×1	8
Group B: Short answer questions	6 with 2 'or' questions	6×4	24
Group C: Long answer questions	1 with 1 'or' question	1×8	8

5.3 External Practical Evaluation (20%)

Office of the Controller of Examinations will conduct final practical examination at the end of final examination.After completing the end semester theoretical examination, practical examination will be held. External examiner will conduct the practical examination according to the following evaluation criteria. There will be an internal examiner to assist the external examiner. Three hours' time will be given for the practical examination. In this examination Students must demonstrate the knowledge of the subject matter.

6. Evaluation System:

Practical	Weightage	Marks
Practical Report Copy	5	
Viva	5	
Practical Exam	10	20

7. Prescribed Books

1. Russell, S., & Norvig, P. (2020). *Artificial intelligence: A modern approach* (4th ed.). Pearson.
2. Ivan Bratko(2011). *Prolog Programming for Artificial Intelligence*. Pearson Education Canada)
3. Rich, E., Knight, K., & Nair, S. (2019). *Artificial intelligence* (3rd ed.). McGraw-HillEducation.

Laboratory Work (Separate Section – 15 Practical Sessions)

Students will implement guided practical exercises using Prolog, Python/Google Colab and simple datasets.

Lab 1: Introduction to Python environment, Google Colab and libraries
Lab 2: Game 1 – Solve 8-Puzzle problem
Lab 3: Game 2 – Solve N-Queen problem
Lab 4: Game 3–Solve Graph Coloring problem
Lab 5: Game 4 – Solve Missionaries & Cannibals Problem
Lab 6: Game 5 –Solve Water Jug Problem
Lab 7: Build a simple rule-based expert system using IF–THEN logic
Lab 8: Demonstrate Breadth-First Search (BFS) and Depth-First Search (DFS) on a simple problem
Lab 9: Write logical statements using predicates, constants, and variables; convert statements to Prolog facts
Lab 10: Implement logical connectives in Prolog and apply Modus Ponens for inference
Lab 11: Write Prolog program using facts, rules, and queries for simple problem-solving
Lab 12: Build a simple perceptron model (simulate AND/OR gates) using Python
Lab 13: Preprocess text: tokenization, stop-word removal, and stemming using Python
Lab 14: Perform image preprocessing: resize, grayscale conversion, and cropping using OpenCV/Python
Lab 15: Explore an AI educational tool (like ChatGPT or Quillionz) and discuss ethical considerations in its use

Online Learning Platforms and Simulation Tools

To enhance conceptual understanding and practical implementation of Artificial Intelligence, students are encouraged to utilize the following interactive platforms, simulation tools, and development environments:

1. Google Colab

A cloud-based Python programming environment that allows students to write, execute, and share AI and Machine Learning code without local installation. It supports libraries such as NumPy, Pandas, Scikit-learn, TensorFlow, and Keras.

2. Kaggle

An online data science platform providing real-world datasets, notebooks, and ML competitions. Useful for practicing student performance prediction and classification problems.

3. Orange Data Mining

A visual, drag-and-drop data mining and machine learning tool. Suitable for beginners to understand classification, clustering, and regression without heavy coding.

4. Weka

A GUI-based machine learning software that allows students to experiment with algorithms like Decision Tree, KNN, and clustering techniques.

5. TensorFlow Playground

An interactive neural network simulator used to visualize how hidden layers, activation functions, and weights affect learning.

6. Teachable Machine

A web-based tool for creating simple image, sound, or pose classification models without programming. Useful for demonstrating AI concepts in education.

7. OpenCV

An open-source computer vision library used for image processing tasks such as grayscale conversion, resizing, face detection, and object recognition.

8. NLTK

A Natural Language Processing library in Python used for tokenization, stop-word removal, stemming, and basic sentiment analysis.

9. spaCy

An advanced NLP library designed for efficient text processing and language modeling tasks.

10. CLIPS

A rule-based expert system development environment used for implementing IF–THEN rules and demonstrating forward and backward chaining.

11. Visualgo

An interactive algorithm visualization platform useful for demonstrating search techniques such as BFS and DFS.

Far Western University
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Course Title: Project Work Nature of the Course: Project
Course No.: CS. Ed 477 Credit Hour: 3
Level: Undergraduate
Semester: Seventh Semester

1. Course Introduction

This course will allow students who are taking the any course to expand their programming knowledge and work on significant projects of their choice. Lessons on software development processes, project design & management, and other topics will assist in completing the projects as well as advance their programming skills. There is no set syllabus. Students identify their chosen project area and are allocated a supervisor who is a member of the academic staff, and is responsible for providing support and guidance. Students are responsible for organizing themselves and their work, with advice from their supervisor with whom they should meet on a regular basis, as agreed with the supervisor.

2. General Objectives

- Experienced and empowered in undertaking significant project work in a self disciplined, organized, and professional manner from conception to documentation.
- Skilled in analyzing, designing and developing of meaningful and efficient real world application

3. Phases of Project

The following are the phases of project work:

1) **Proposal Submission and Presentation:** Students must submit and present project proposal on 3rd to 4th week of start of the seventh semester.
2) **Mid-Term:** Students must submit progress report and defend midterm progress of their project work on the 10th to 11th week of the seventh semester.
3) **Final Submission:** Students must submit and defend the project work during last week of the seventh semester but before final board examination. The final defense will include a viva voice followed by a demonstration of the project. The final defense will be conducted by an evaluation committee with an external from the university. Students must have to submit the project final report to their respective department of college/campus before at least 10 days of final defense date. The report should be submitted in standard format as prescribed. The hard/soft copy of report should be made available to the external before a week of presentation date.

4. Evaluation Scheme:

1) **Proposal Defense** - 10% Marks of 100 (2 Marks Head/Program Coordinator + 6 Marks Supervisor + 2 Marks Internal Examiner)
2) **Midterm -** 20% Marks of 100 (3 Marks Head/Program Coordinator + 14 Marks Supervisor + 3 Marks Internal Examiner)
3) **Final Defense -** 70% Marks of 100 (5 Marks Head/Program Coordinator + 40 Marks Supervisor + 5 Marks Internal Examiner + 20 Marks External Examiner)

The evaluation committee and evaluation criteria should be as follow:

a. Evaluation committee

- HOD/Coordinator of the campus/college

- Project Supervisor (Regular faculty of the campus/college)
- Internal Examiner (Regular faculty of the campus/college)
- External Examiner (Allocated from university at the final defense)

b. Marks Allocation:

- Head / Program Coordinator – 10
- Project Supervisor – 60
- Internal Examiner – 10
- External Examiner – 20

Total – 100

c. Focus of the evaluation:

-Presentation Skills
- Level of Work and Understanding (Level of Analysis, Design, Implementation, Testing, Result Analysis done for the project)
- Project Report
- Viva/Question Answer
- Demonstration of the project
- Teamwork and Contribution

Report Contents:

1. Prescribed content flow for the project proposal

1. Introduction
2. Problem Statement
3. Objectives
4. Methodology
   a. Requirement Identification
      i. Study of Existing System / Literature Review
      ii. Requirement Analysis
   b. Feasibility Study
      i. Technical
      ii. Operational
      iii. Economic
      iv. Schedule (Gantt chart showing the project timeline)
      c. High Level Design of System (Methodology of the proposed system/ Flow Charts/ Working Mechanism of Proposed System / Description of Algorithms)
5. Expected Outcome
6. References

2. Prescribed content flow for the project report

The final report documents the results of the project and should be submitted within 15 days after finishing final examination. Students should use Times New Roman Font and Line spacing 1.5 while formatting their project report. Tentative project report format should be as per following outline:

– Cover Page and Title page
– Students Declaration
– Supervisors Recommendation
– Letter of Approval
– Acknowledgement
– Abstract

– Table of Contents
– List of Figures
– List of Tables
– List of Abbreviations
–Main Report
–References
–Bibliography (if any)
–Appendices (Screenshots + Snippets of major source code components)

Prescribed chapters in the main report

1. Chapter 1: Introduction
- 1.1. Introduction
- 1.2. Problem Statement
- 1.3. Objectives
- 1.4. Scope and Limitation
- 1.5. Development Methodology
- 1.6. Report Organization

2. Chapter 2: Background Study and Literature Review
- 2.1. Background Study (Description of fundamental theories, general concepts and terminologies related to the project)
- 2.2. Literature Review (Review of the similar/relevant projects, theories and results by other researchers)

3. Chapter 3: System Analysis
- 3.1. System Analysis
  - 3.1.1. Requirement Analysis
    - i. Functional Requirements (Illustrated using use case diagram/use case descriptions)
    - ii. Non Functional Requirements
  - 3.1.2. Feasibility Analysis
    - i. Technical
    - ii. Operational
    - iii. Economic
    - iv. Schedule
  - 3.1.3. Analysis (May be Structured or Object Oriented)

If structured approach:
- Data modelling using ER Diagrams
- Process modelling using DFD

If object oriented approach:

Object modelling using Class and Object Diagrams:
- Dynamic modelling using State and Sequence Diagrams
- Process modelling using Activity Diagrams

4. Chapter 4: System Design
- 4.1. Design (May be Structured or Object Oriented as per the approach followed in analysis chapter)

If structured approach:
- Database Design: Transformation of ER to relations and normalizations
- Forms and Report Design
- Interface and Dialogue Design

If object oriented approach:
- Refinement of Class, Object, State, Sequence and Activity diagrams
- Component Diagrams
- Deployment Diagrams

- 4.2. Algorithm Details

5. Chapter 5: Implementation and Testing

5.1. Implementation

5.1.1. Tools Used (CASE tools, Programming languages, Database platforms)

5.1.2. Implementation Details of Modules (Description of classes/procedures/functions/methods/algorithms)

5.2. Testing

5.2.1. Test Cases for Unit Testing

5.2.2. Test Cases for System Testing

5.3. Result Analysis

6. Chapter 6: Conclusion and Future Recommendations

6.1. Conclusion

6.2. Future Recommendations

Citation and Referencing:

The listing of references should be listed in the references section. The references contain the list of articles, books, urls, etc. that are cited in the document. The books, articles, and others that are studied during the study but are not cited in the document can be listed in the bibliography section. The citation and referencing standard should be IEEE referencing standard. The text inside the document should be cited in IEEE style. The IEEE referencing standard can be found in the web

Report Format Standards:

A. Page Number

The pages from certificate page to the list of tables/figures/abbreviations/approvals should be numbered in roman starting from i. The pages from chapter 1 onwards should be numbered in numeric starting from 1. The page number should be inserted at bottom, aligned center.

B. Page Size and Margin

The paper size must be a page size corresponding to A4. The margins must be set as

- Top = 1 in (2.54 cm)
- Bottom = 1 in (2.54 cm)
- Left = 1.25 in (3.17 cm)
- Right = 1 in (2.54 cm)

C. Paragraph Style

- All paragraphs must be justified and have spacing of 1.5.

D. Text Font of Document

- The contents in the document should be in Times New Roman font
- The font size in the paragraphs of document should be 12

E. Section Headings

- Font size for the headings should be 16 for chapter headings, 14 for section headings, 12 for sub-section headings. All the headings should be bold faced.

F. Figures and Tables

- Position of figures and tables should be aligned center. The figure caption should be centered below the figure and table captions should be centered above the table. All the captions should be of bold face with 12 font size.

Final Report Binding and Submission:

No of Copies: 3 (College Library + Self + Dean Office)

Look and Feel: Golden Embracing with Black Binding

Far Western University
Faculty of Education
Bachelor's in computer science education

Course Title: Teaching Methods in ICT | Nature of the Course: Theory
Course No.: CS. Ed 478 | Credit Hour: 3
Semester: Seventh Semester | Teaching Hrs: 48
Level: Undergraduate

1. Course Introduction

Teaching methods in Information and Communications Technology (ICT) include the various instructional approaches and strategies applied to deliver ICT-related knowledge and skills to students efficiently. The methods used could include hands-on computer lab sessions, interactive multimedia presentations, online learning modules, collaborative projects, and problem-based learning activities that actively involve students in the practical implementation of ICT ideas. The course aims to give students a comprehensive understanding of ICT tools, software, programming, and digital literacy, and endow them with the necessary understanding and abilities for the digital era.

2. Objectives

The general objectives of this course are as follows:

- To explore innovative teaching methods to enhance instructional effectiveness and engage students in a technology-rich environment.
- To create comprehensive lesson plans to optimize student learning experiences.
- To design and apply strategies for utilizing ICT tools effectively in the classroom.
- To utilize ICT tools for student assessment, online assessments, and digital portfolio management, providing constructive feedback.
- To explore emerging technologies in education to stay updated with advancements and best practices in teaching methods.

3. Specific Objectives and Contents

Specific Objectives	Contents
• Explain pedagogy and andragogy concepts for effective teaching strategies across age groups. • Describe flipped classroom models • Explain online and face-to-face instruction to create flexible, cohesive blended learning experiences. • Explain gamification elements to enhance motivation and engagement. • Explore real-world problems, collaboration, and critical thinking concept.	**Unit I: Innovative teaching methods (8 hrs)** 1.1 Concept of Pedagogy, Andragogy and Heutagogy 1.2 Project-Based Learning (PBL) (Characteristics, Benefits and Challenges) 1.3 Inquiry-Based Learning (Types and Benefits) 1.4 Flipped Classroom (Characteristics and benefits) 1.5 Blended Learning (Types, Benefits and Challenges) 1.6 Gamification (Benefits, Disadvantages and Examples in Education) 1.7 Application of Innovative Teaching Methods in Nepalese ICT Classrooms
•Create learning objectives to guide session planning and measure student progress effectively.	**Unit II: Session Planning and Design (12 hrs)** 2.1 Determine Learning Objectives (Benefits,

• Create lesson plans that align with objectives, ensuring structured and engaging content delivery. • Incorporate ICT tools seamlessly into lesson plans to enhance learning and student interaction. • Develop strategies for effective time management and pacing to maintain lesson flow and student engagement. • Design lessons with interactive elements to actively involve students and promote hands-on learning.	Characteristics of effective learning objectives, Types of learning objectives, How to write effective learning objective) 2.2 Designing Effective Lesson Plans(Types of lesson plan, Steps to build an effective lesson plan) 2.3 Integrating ICT Tools into Lesson Plans(TPACK model, Components of TPACK model, Example of TPACK in class room setting, Challenges and implementing of TPACK, Practical steps for integrating ICT tools) 2.4 Time Management and Pacing(Strategies for effective time management and pacing in lesson) 2.5 Designing Interactive Lessons 2.6 2.5 Lesson Planning Based on National Curriculum Framework (NCF 2019 Nepal) 2.7 Micro-Teaching with ICT Integration (Peer feedback, Reflection , Improvement cycle)
•Design strategies for effective ICT tool use in the classroom. •Plan management for a technology-enhanced classroom environment. •Create a plan for facilitating collaborative learning among students. •Use gamification, quizzes, and polls to enhance student engagement. •Engage students using social media for interactive learning.	**Unit III: Classroom Teaching Strategies (12 hrs)** 3.1 Strategies for effective use of ICT tools 3.2 Design Technology-enhanced classroom 3.3 Design collaborative learning(Features of collaborative learning, Strategies for collaborative learning, Types of collaborative learning, Importance of collaborative learning) 3.4 Student engagement using gamification, interactive quizzes and polls 3.5 Post-class engagement using social media
•Assess student performance using ICT tools effectively. • Implement online assessments and manage e-portfolios efficiently. • Provide feedback to students through digital channels. • Use data-driven insights for educational decision-making.	**Unit IV: Evaluation and Feedback (6 hrs)** 4.1 Assessing Student Performance with ICT (Roles of ICT in assessment in learning) 4.2 E-Portfolios and Continuous Assessment (Types of E-portfolios, Advantages of online assessment, Challenges of online assessment 4.3 Digital Feedback and Learning Analytics 4.4Challenges of ICT-Based Assessment in Nepal(Connectivity issues, Digital literacy gaps, Equity issues)
•Explore emerging technologies for future educational applications. • Prepare strategies for future classroom technology integration. • Analyze case studies of innovative ICT classroom practices. •Develop a comprehensive semester plan incorporating ICT method.	**Unit V: Emerging Trends and Future Direction of ICT Teaching in Nepal (10 hrs)** 5.1 Emerging Technologies in Education 5.2 National ICT Policies and Educational Reform in Nepal (ICT Masterplan in Education Nepal, Role of MoE, digital Nepal Framework) 5.3 Case Studies of Innovative ICT Practices in classroom 5.4 Semester ICT Integration Project

4. Methodology and Techniques

Modes of instruction*:* Lecture, seminar, exercise course, guided personal study, tutorial, independent study, project work, Assignments in different topics, group discussion, reflective writing

Types of learning activities

Attending lectures, performing specific assignments, writing papers, independent and private study, reading books, journals and papers, providing constructive feedback, group study and peer discussion.

5. Evaluation Scheme

5.2 Internal Evaluation 40%

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

a) Attendance and Participation in class activities: 5+5=10marks

b) Assignment I: Reflective Notes and Class presentation: 5+5=10marks

(Design one ICT lesson using any innovative method suitable for a rural government school Nepal.)

c) Assignment II: One Term paper/Essay/Project and Interview: 5+5=10marks

(Logical essay /term paper /project on the topics chosen by students and approved by the teacher and interview)

d) Mid-term exam: 10marks

5.2External Evaluation (Final Examination) 60%

Types of questions	Total questions to be asked	Number of questions to be answered and marks allocated	Total marks
Group A: Multiple choice items	10 questions	10×1	10
Group B: Short answer questions	6 with 2 'or' questions	6×5	30
Group C: Long answer questions	2 with 1 'or' question	2×10	20

6. Recommended Books and Reference Materials

6.1 Recommended Books:

1. Author Name. (2019). Educational Technology. (2019). New York, NY: Springer Berlin Heidelberg.
2. Agarwal, J.C. (2008): Essentials of Educational Technology: Innovations In Teaching Learning. New Delhi: Vikas Publishing House Pvt. Ltd.

6.2 References materials:

1. Kolb, L. (2017). Learning first, technology second: The educator's guide to designing authentic lessons (First edition). Portland, Oregon: International Society for Technology in Education.
2. Radha Mohan. (2007). Innovative science teaching. New Delhi: Prentice-Hall of India Private Limited.
3. Mangal, S. K., & Mangal, U. (2012). Essentials of educational technology. New Delhi: PHI Learning Pvt. Ltd.