Far Western University
Faculty of Humanities & Social Sciences
Bachelor of Arts
Course Title: Fundamentals of Computer and Information Technology

Course No.: **CCIT 241.1** Credit Hours: 3
Nature of Course: Theory and Practical Total Marks: 100 (40+40+20)
Pass Marks: 45 Total Hours: 45 Theory + Practical
Level: Fourth Semester

1.Course Introduction

This course is designed to equip students of diverse disciplines like Nepali, English, Rural Development, Geography, and Sociology with the foundational knowledge and practical skills in Information Technology. The course emphasizes everyday usefulness, collaborative digital tools, and the role of technology in academics, careers, and society. It focuses on real-life application of IT tools in writing, data handling, online learning, communication, and research. No prior technical background is assumed.

2.Course Objectives

- To provide basic understanding of computer systems and software.
- To develop hands-on skills in MS Word, Excel, and PowerPoint.
- To introduce practical use of Internet, Email, Search engine and Google tools
- To explain the role of Information Systems, Networks, and Databases in an organization.
- To introduce modern technologies like AI, Cloud Computing, and Digital Collaboration tools.
- To raise awareness about online security, ethics, and responsible digital use.

3.Detailed Course Outline

Objectives	Contents
1. Define the basic components and characteristics of a computer system. 2. Describe the evolution and types of computers. 3. Identify the functional units and memory types in a computer. 4. Compare primary and secondary memory devices	**Unit 1: Understanding Computer Fundamentals(4hr)** 1. Introduction to Computer, Characteristics of Computer, Brief History of Computer (Generations of Computer), Applications of Computer 2. Types of computer: Based on Work, Size and Brand 3. Functional Components of Computer: Input, Processing, Memory and Output unit 4. Memory in Computer System: Primary and secondary (RAM, ROM, cache, HDD, SSD, mas storage devices).
1. Explain the need for software and its types. 2. Differentiate between system and application software.	**UNIT 2: Classifying and Using Computer Software(5hr)** 2.1 Software and its Need, Types of Software: System software and Application software. 2.2 System Software: Operating System,

3. Illustrate the functions of operating systems and utility software. 4. Classify programming languages based on levels and purpose.	Language Processor (Compiler, Interpreter and Assembler) Utility software. 2.3 Types and Functions of Operating System, 2.4 Files & directory structure in Computer System 2.5 System Booting and its types (Cold Boot, Warm Boot) 2.6 Programming languages and Types: Low level (Machine and Assembly), High (Procedural and problem oriented) and Natural Language and their merits and demerits.
1. Demonstrate the use of word processing tools for document creation and formatting. 2. Use spreadsheet functions for data analysis and visualization. 3. Create presentations using design, animation, and templates. 4. Integrate citations, mail merge, and macros in documents.	**Unit 3: Applying Office Productivity Tools (10 hr)** 3.1 Introduction 3.2 Word Processor 3.2.1 Characteristics of word processor 3.2.2 Creating and formatting documents 3.2.3 Managing page number, header and footer 3.2.4 Proofing a documents 3.2.5 Inserting Object from other applications 3.2.6 Mail merge, Macro, hyper link 3.2.7 Inserting table and other objects 3.2.8 Inserting citation in APA and other formats 3.3 Spreadsheet Application and characteristics 3.3.1 Creating, formatting and printing worksheets 3.3.2 Working with mathematical, logical, financial and statistical functions. 3.3.3 Creating, formatting and printing graphs 3.3.4 Sorting, filtering, and conditional formatting 3.3.5 Using Pivot Tables for data summarization 3.3.6 Applying Goal Seek and Data Validation 3.4 Presentation Software and its Characteristics 3.4.1 Creating presentation 3.4.2 Working on design, animation and slide transition 3.4.3 Working on Slide template and master slide
1. Define the concept and components of an information system. 2. Describe different types of information systems and their roles. 3. Analyze how information systems support organizational functions	**Unit 4: Analyzing Information Systems in Organizations (4 hr)** 4.1 Introduction to Information System 4.2 Components of Information System 4.3 Computer Based Information system and its components 4.4 Types of Information System: TPS, MIS, DSS, ESS 4.5 Roles of IS in an Organization
	UNIT 5: Exploring Computer Networks and Communication (5 hr)

1. Explain the basics of telecommunication and networking. 2. Differentiate between types of networks and communication modes. 3. Identify network topologies and transmission media. 4. Describe the purpose and use of networking devices.	5.1 Introduction Computer Network and Telecommunication 5.2 Communication Process(model). 5.2 Mode of Communication (Simplex, Half Duplex, Full Duplex), 5.3 Types of Computer Network (Based on Geographical area and Architecture) 5.4 Network Topology and Types: Bus, Ring, Star, Tree, Mesh and Hybrid with merits and demerits. 5.5 Transmission Media: Wired and Wireless 5.6 Networking Connecting Devices (Switch, Router, Hub, NIC) 5.7 Purpose of Networking in an Organization
1. Explain the limitations of file systems and the advantages of DBMS. 2. Compare centralized and distributed DBMS. 3. Describe the applications of DBMS in real-world scenarios. 4. Introduce the concepts of data warehousing and data mining.	**6. Managing Data with DBMS (4 hr)** 6.1 File System and its limitations 6.2 DBMS and its advantages 6.3 Types of DBMS Centralized and Distributed 6.4 Applications of DBMS 6.5 Introduction and uses of Data Warehouse and Data -Mining
1. Describe the history and structure of the internet. 2. Use email and search engines effectively. 3. Demonstrate the use of Google tools and online platforms for collaboration. 4. Evaluate the usefulness of digital tools in academic and professional settings.	**7. Utilizing Internet and Digital Collaboration Tools (5hr)** 7.1 Introduction and History of the Internet 7.2 Uses of Internet 7.3 Internet Terminologies (Client, Server, URL, web site, web pages, DNS, IP address etc) 7.4 Search Engine and Effective Searching Techniques 7.5 Email: Creating, Sending, Attaching Files 7.6 Google Tools: Docs, Sheets, Drive, Forms, Meet, Translate 7.7 Online Platforms: Zoom, MS Teams
1. Define artificial intelligence and its applications. 2. Use AI tools for writing, summarizing, and translation. 3. Explain the benefits of cloud computing, e-governance, and e-commerce. 4. Assess the impact of emerging technologies on society.	**Unit 8: Exploring Emerging Technologies in IT(5hr)** 8.1 Introduction to AI: Uses, Benefits, Limitations 8.2 AI Tools: ChatGPT, Grammarly, QuillBot, cahtpdf, Gamma AI etc. 8.3 Applications of AI in Writing, Summarizing, Translation 8.4 Introduction to Cloud Computing 8.5 E-Governance and E-Commerce: Types and Benefits
1. Identify common digital threats and security risks.	**Unit 9: Understanding Digital Security and Ethical Use(3hr)**

2. Describe tools and practices for digital protection. 3. Apply safe and ethical practices in digital environments. 4. Evaluate the importance of cybersecurity in personal and professional life.	**9.1 Introduction to Digital Security and Ethics** 9.1.1 Importance of cybersecurity in daily life 9.1.2 Ethical use of digital resources **9.2 Common Digital Threats** 9.2.1 Viruses, worms, and malware 9.2.1 Hacking and unauthorized access 9.2.3 Cyber theft and cyber terrorism 9.2.3 Workplace misuse and digital piracy **9.3 Security Tools and Practices** 9.3.1 Antivirus software and firewalls 9.3.2 Password management and multi-factor authentication 9.3.3 Encryption and decryption (basic cryptography) 9.3 **Digital Ethics and Responsible Use** 9.4.1Intellectual property and copyright 9.4.2 Ethical behavior in online communication 9.4.3 Privacy, consent, and data protection

4. Methodology and Techniques

Modes of Instruction:
Lecture, seminar, exercise course, guided personal study, tutorial, independent study, project work, assignments on various topics, group discussion, and reflective writing.

Types of Learning Activities:
Attending lectures, completing specific assignments, writing papers, independent and private study, reading books, journals, and articles, providing constructive feedback, group study, and peer discussions.

5. Evaluation Scheme

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by the course instructor based on the following components:

a) Attendance and Participation in Class Activities:
5 + 5 = **10 marks**

b) Assignment I: Reflective Notes and Class Presentation:
5 + 5 = **10 marks**
(Reflective notes on 2 to 4 questions provided by the instructor at the end of each unit, and a presentation on any two of those questions.)

c) Assignment II: Term Paper/Essay/Project and Interview:
5 + 5 = **10 marks**
(A logical essay, term paper, or project on a topic chosen by the student and approved by the instructor, followed by an interview.)

d) Mid-term Examination:
10 marks

5.2 External Evaluation (Final Examination) – 40%

The Office of the Controller of Examinations will conduct the final examination at the end of the semester.

Types of Questions	Total Questions	Questions to be Answered & Marks	Total Marks
Group A: Short Answer Questions	6 with 2 'or' options	6 × 4	24
Group C: Long Answer Questions	2 with 1 'or' option	2 × 8	16

5.3 External Practical Evaluation 20%

The Office of the Controller of Examinations will conduct the final practical examination after the theoretical exams. An external examiner will assess the practical exam, assisted by an internal examiner. The exam will last three hours, during which students must demonstrate their subject knowledge.

Evaluation Criteria:

- Practical Report Copy: 5 marks
- Viva: 5 marks
- Practical Exam: 10 marks

6. Laboratory Work:

The instructor should divide the students into groups of 30. Each group will be allocated a total of 15 hours of laboratory time to complete the required practical sessions.

Lab Manual

This lab manual outlines the key areas students should work on for practical understanding of the course 'Fundamentals of Computer and Information Technology'. Follow the instructions under each unit to complete your lab exercises.

Unit 3: Applying Office Productivity Tools

Students should practice the following aspects of office package:

- Create and format documents using MS Word.

- Insert tables, images, and use mail merge features.

- Use spreadsheet functions in MS Excel for calculations and data analysis.

- Create charts, apply filters, and use pivot tables.

- Design presentations using MS PowerPoint with animations and transitions.

Unit 6: Managing Data with DBMS

Students should practice the following aspects of the DBMS:

- Understand the structure of a database and its components.

- Create simple databases using MS Access or LibreOffice Base or SQL Environment.

- Enter, update, and retrieve data using queries.

- Generate reports from the database.

Unit 7: Utilizing Internet and Digital Collaboration Tools

Students should practice the following aspects of Internet and Collaboration Tools:

- Use search engines effectively for academic research.

- Create and manage email accounts.

- Use Google Docs, Sheets, and Forms for collaborative work.

- Participate in virtual meetings using Google Meet or Zoom.

Unit 8: Exploring Emerging Technologies in IT

Students should practice on the following aspect of AI tools:

- Use AI tools like ChatGPT for writing and summarizing.

- Explore Grammarly and QuillBot for grammar and paraphrasing.

- Use Google Translate for multilingual communication.

- Understand the basics of cloud storage using Google Drive or OneDrive.

Prescribed Books

1. Norton, P. (2006). *Introduction to Computers*. McGraw-Hill.
2. Rajaraman, V. (2018). *Introduction to Information Technology*. Prentice-Hall of India.
3. O'Brien, J. A. (2017). *Introduction to Information Systems*. Tata McGraw-Hill.

References

1. Turban, E., Rainer, R. K., & Potter, R. E. (2001). *Introduction to Information Technology*. John Wiley & Sons.
2. Bhatt, B. P., Chataut, G. P., & Bhatt, H. S. (2076 B.S.). *Fundamentals of Computer and Information Systems*. Dreamland Publication.