Course Code …….	Application of Information and Communication Technology	Credit Hours: 03

Objective:
The objective of this course to provide essential knowledge of computer organization and types, hardware and software components, the internet and World Wide Web, and Network infrastructure. Students will get basic understanding of application softwares with special focus on business analytics and data management. It will help students to develop contextual thinking and program development skills with vital concepts of computer ethics.

Learning Outcomes:
This course is aimed to introduce fundamental concepts of computer, software and hardware including the concepts of office applications, managing data in spreadsheets, using business intelligence applications, databases, and networks. The students will be able to understand the internet and various applications including search engine, email, social media and websites. Students will be introduced to contextual thinking process and problem solving skills. Students will learn ethical considerations using computer systems and internet with awareness of computer and cybercrimes.

TOPICS
Unit-I: Introduction to Computers: (2 Lectures):
Generations of computers, Classifications of computers, Users of computers,. Elementary Components, Categories, Input / Output and related peripheral Devices, Central Processing Unit, Buses, expansion Slots, Instruction cycle, Boot sequence, Why computers are fast, Factors that make computers fast. Motherboards and processors, Ports, Interfacing Cards, Modems, Memory and Storage

Unit-II: Software Applications (4 Lectures):
Operating System, Operating system functions, Types of programming languages, Introduction of office applications, word application using MS Word (Report Writing TOC , TOF, List of Tables, Index) and (Academic Referencing Zotero / Mendeley), spreadsheet application using MS Excel(basic organization, statistical formula, pivot table and analytics), presentation using MS Powerpoint , managing data using MS Access (data representation, data types and data management and retrieval) , basic project management applications.

Unit-III: Internet and Networks (2 Lectures):
What is the internet, intranet and extranet?, WWW, websites, search engines, social media platforms and future of internet, utility applications, Networking Essentials, types of networks, fundamentals of information and communication technology network infrastructure, Network Protocols and Communications, how network works.

Unit IV: Computational Thinking: (1 Lecture):
Structured Problem Solving, Breaking a problem down into sub problems, logic flow, Build Problem statement, deciding Input / Output, how to invoke processes and business logic, approach for problem solving, Solution design

Unit V: Business Informatics using Power BI: (2 Lectures):
BI- Excel Pivots, Power BI – Introduction, example Datasets, queries, Insights and metrics, dashboards, reporting and Creating dashboards for intelligent use and applications

Unit VI: Intelligent & Contextual Search: (2 Lectures):
How search engine works, basics of Google search engine, Intelligent & Contextual Search, Introduction to ChatGPT and Google Bard, How to perform intelligent contextual search? How to write effective prompts, Issues with Generative AI based search engines / tools.

Unit VII: Computer Ethics (1 Lectures):
Professional and Ethical Responsibilities, Risks and liabilities of computer based systems, Computer Crime and abuse, Economic issues in computing, intellectual property rights, professional code of conduct.

Recommended Books:

1. Introduction to Computers by Peter Norton, International Edition (McGraw HILL)
2. Using Information Technology: A Practical Introduction to Computer & Communications by Williams Sawyer, latest Edition (McGraw HILL)
3. Computers, Communications & information: A user's introduction by Sarah E. Hutchinson, Stacey C. Swayer
4. Fundamentals of Information Technology by Alexis Leon, Mathewsleon Leon press.
5. Sherman, R. (2014). Business intelligence guidebook: From data integration to analytics. Newnes.
6. Foulkes, L. (2020). Learn Microsoft Office 2019: A Comprehensive Guide to Getting Started with Word, PowerPoint, Excel, Access, and Outlook. Packt Publishing Ltd.