SIDO KANHU MURMU UNIVERSITY, DUMKA

(A State University recognized under Section 2(f) & 12(B) of the UGC Act, 1956)

FOUR-YEAR UNDER GRADUATE PROGRAMME (FYUGP)

SYLLABUS

OF

SKILL ENHANCEMENT COURSE

(COMMON COURSE FOR SEMESTER-I, II & III)

Accordance with the

Implementation of FYUGP in State Universities of

Jharkhand Regulations, 2024

Implemented from
Academic Session 2025-2029 Onwards

Syllabus Committee Meeting Proceedings

A meeting of the Syllabus Committee for the revision and finalization of the SKILL ENHANCEMENT COURSE (COMMON COURSE FOR SEMESTER-I, II & III) syllabus for the Four-Year Undergraduate Programme (FYUGP), in accordance with the Implementation of FYUGP in State Universities of Jharkhand Regulations, 2024, was convened on 07.11.25.

The following members of the Syllabus Committee were present in this meeting. The committee unanimously accepted and recommended the syllabi, incorporating major modifications.

Members of the Syllabus Committee:

S. NO.	MEMBERS	SIGNATURE
1	**Dr. Rajesh Kumar Yadav (Chairperson)** Co-Ordinator MCA & HOD, University Department of Physics, SKMU, Dumka	07.11.25
2		
3	**Rajesh Kumar (Member)** Assistant Professor, Model College, Dumka SKMU, Dumka	Rajesh 07-11-25
4	**Dr. Indrajit Kumar (Member)** Assistant Professor, S.P. College, Dumka SKMU, Dumka	Kumar 07/11/2025
5	**Dr. Zillur Rahman (Member)** Faculty, Department of MCA, SKMU, Dumka	07.11.25
6	**Dr. Amresh Bosh (Member)** Faculty, Department of MCA, SKMU, Dumka	7/0/25
7	**Dr. Bimal Marandi (Member)** Faculty, Department of MCA, SKMU, Dumka	07/11/25
8	**Dipak Kumar Das (Invitee Member)** Coordinator of NEP, SKMU, Dumka	07/11/25

Dr. Rajesh Kumar Yadav

(Chairperson)

SEMESTER	COURSE CATEGORY	CODE	PAPERS	CREDITS
SEMESTER I	SKILL ENHANCEMENT COURSE	SEC-I	**INTRODUCTION TO COMPUTER &** IT	4
SEMESTER II		SEC-II	**DIGITAL COMMUNICATION AND DATA MANAGEMENT**	4
SEMESTER III		SEC-III	**COMPUTER SOFTWARE, PROGRAMMING & AI**	4

INSTRUCTIONS FOR QUESTION SETTER

1. **End Semester Examination (75 Marks)**

The **End Semester Examination (ESE)** will be of **75 marks** and will also have **two groups**.

Group A is compulsory and will have:

- **Question 1:** Five very short answer questions (1 mark each, total 5 marks)
- **Questions 2 and 3:** Two short answer questions (5 marks each, total 10 marks)

Group B will have **six descriptive questions**, each carrying **15 marks**. Students need to answer **any four** (total 60 marks).

Question format for **75 Marks**:

Subject/ Code

F.M. = 75 **Time**=3Hrs. Exam Year

General Instructions:

i. **Group A** carries very short answer type **compulsory** questions.
ii. **Answer 4 out of 6** subjective/ descriptive questions given in **Group B**.
iii. Answer in your own words as far as practicable.
iv. Answer all sub parts of a question at one place.
v. Numbers in right indicate full marks of the question.

Group A

1. [5x1=5]
   i. .....
   ii. .....
   iii. .....
   iv. .....
   v. .....
2. ..... [5]
3. ..... [5]

Group B

4. ..... [15]
5. ..... [15]
6. ..... [15]
7. ..... [15]
8. ..... [15]
9. ..... [15]

Note: There may be subdivisions in each question asked in Theory Examination.

Note: Some questions may be divided into smaller parts if needed.

SEMESTER – I

COURSE: SKILL ENHANCEMENT COURSE(SEC-I)	**TOTAL CREDITS:** THEORY-03
PAPER: INTRODUCTION TO COMPUTER & IT	**TEACHING HOURS:** THEORY-45

EVALUATION **(Only the End Semester University Examination will be conducted)**	
Full Marks	75 Marks
Duration of Exam	3 Hours
Pass Marks	30 Marks

COURSE OBJECTIVES: To provide a basic understanding of computer and information technology. To introduce key component of hardware and software, networking and operating system.

COURSE OUTCOMES: This fundamental course outcomes provide students with a solid foundation in computer science and Technology and prepare them for more advanced coursed in this field.

COURSE CONTENTS:

UNIT-I: Introduction to Computers

Computer system: characteristics and capabilities. Hardware and Software: Block Diagram of a Computer, Types, Purpose, Components, Generation of Computers. Functional unit: input CPU (CU, ALU), output storage, number system: Binary, Decimal, Octal, Hexadecimal.

UNIT-II: Computer Hardware, Software & Office Applications

Basics of input/output devices, storage, memory types, system and application software. Overview of operating systems. Introduction to MS Word, Excel, and PowerPoint for document editing, data handling, and presentations.

UNIT-III: Networking and Internet

Computer Network: Definition, need, Types (LAN, MAN, WAN) Network devices: modem, router, switch, Hub IP addressing, DNS, HTTP, Email, web Browsing search Engines. Emerging Technologies: AI, Big Data, Block Chain.

SUGGESTED READINGS:

1. Computer Fundamentals, P. K. Sinha, BPB Publications, Sixth Edition.
2. Introduction to Information Technology, V. Rajaraman, PHI, Second Edition.
3. Fundamental of Information Technology, ChetanShrivastava, Kalyani Publishers.

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SEMESTER – II

COURSE: SKILL ENHANCEMENT COURSE(SEC-II) **TOTAL CREDITS:** THEORY-03

PAPER: DIGITAL COMMUNICATION AND DATA MANAGEMENT **TEACHING HOURS:** THEORY-45

EVALUATION (Only the End Semester University Examination will be conducted)	
Full Marks	75 Marks
Duration of Exam	3 Hours
Pass Marks	30 Marks

COURSE OBJECTIVES: Understand the fundamentals of digital communication. Learn about various transmission media and data transfer methods. Acquire knowledge about data storage, processing, and database systems.

COURSE OUTCOMES: After successful completion of this course, students know about digital communication and their types and how data can be managed in database.

COURSE CONTENTS:

UNIT-I: Basics of Digital Communication:

Introduction, Components: sender, Receiver, medium, message, Types, analog vs Digital, Characteristics and advantages, Digital transmission: Bits, Baud rate, Bandwidth. Modulation technique.

UNIT-II: Transmission Media & Data Transmission

Wired Media: twisted pair, Coaxial cable, optical Fiber, Wireless Media: Radio waves, Microwaves, infrared, satellite. Transmission Mode: Simplex, Half duplex, Full duplex. Serial vs Parallel transmission. OSI and TCP/IP layer.

UNIT-III: Data Management Basics:

Difference between data information and knowledge. Types of data: text, numeric, Image, video. Data collection method, File types .txt, .csv, xls, .pdf -uses and applications. Importance of Data Security and Privacy, Threats: virus, Malware, Phishing, Hacking, Cyber Ethics and IT act.

SUGGESTED READINGS:

1. Data Communication and Networking – Dr. Prakash C. Gupta
2. Data Communications and Networking – Achyut Godbole

3. Information Technology and Its Applications in Business – Rajaraman & Siva Ram Murthy
4. Fundamentals of Information Technology – Chetan Shrivastava
5. Cyber Security: Understanding Cyber Crimes, Computer Forensics and Legal Perspectives – Nina Godbole & Sunit Belapur
6. Computer Networks – Bhushan Trivedi
7. Computer Networks– U.Bakshi & A. Bakshi

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SEMESTER – III

COURSE: SKILL ENHANCEMENT COURSE(SEC-III) **TOTAL CREDITS:** THEORY-03
PAPER: COMPUTER SOFTWARE, PROGRAMMING & AI **TEACHING HOURS:** THEORY-45

EVALUATION (Only the End Semester University Examination will be conducted)	
Full Marks	75 Marks
Duration of Exam	3 Hours
Pass Marks	30 Marks

COURSE OBJECTIVES: This course objective is to provide a solid foundation in the concepts and components of computer software systems. To equip students with practical programming knowledge using Python. To introduce core concepts of Artificial Intelligence and its integration with real-world. To foster awareness of the societal impacts of emerging AI technologies.

COURSE OUTCOMES: Identify and differentiate between types of software. Python program's using fundamental and intermediate programming constructs. Understand the theoretical foundation of AI. Analyze the influence of AI technologies on industries, society, and decision-making.

COURSE CONTENTS:

UNIT-I: Introduction to Computer Software

Introduction to Computer Software: Importance, Classification, Application Software vs Utility Software, Software Development Life Cycle (SDLC). Phases: Requirement Analysis, Design, Implementation, Testing, Deployment, Maintenance Translators: Compilers, Interpreters, Assembler

UNIT-II: Introduction to Python Programming and Object-Oriented Concepts

Introduction to Python: Features, Installation, Syntax, First Python Program, Variables, Keywords, and Data Types, Input/Output. operations and type conversion. Operators: Arithmetic, Logical, Relational, Bitwise. Conditional Statements: if, if-else, elif. Looping Constructs: for, while, break, continue.

Introduction to Object-Oriented Programming: Classes and Objects, Constructors, self keyword, Inheritance, Polymorphism, Encapsulation Searching and Sorting Algorithms: Linear Search, Binary Search, Bubble Sort, Insertion Sort, Selection Sort (with Python implementation).

UNIT-III: Introduction to AI

Introduction to AI: History & Evolution of AI, Definition, Scope, Goals & Types of AI: Narrow, General, Super AI,

Subfields of AI, Applications of AI: Healthcare, Finance, Education, Transportation, Agriculture. Ethical consideration in AI, Intelligent Agent, Agent architecture, Environment type, Rational Agent.

SUGGESTED READINGS:

1. "Learning Python" by Mark Lutz (O' Reilly)
2. "Artificial Intelligence: A Guide for Thinking Humans" by Melanie Mitchell.
3. "Code: The Hidden language of Computer Hardware and Software" by Charles Petzold.
4. "Artificial Intelligenc" By Saroj Kaushik, publisher- Cengage.

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