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Model curriculum structure for 4 year UG programs with fixed subjects for Minor in Computer

Sem	Major (Offline)	Minor (Blended Mode) (Computer chain)	Inter Disciplinary (Offline)	Ability Enhancement (Offline)	Skill Enhancement (Online /Sessional)	Common Value added Course (SESSIONAL)	Total credits
I	2 sub x 5 credits	M01: Computer Fundamental (3 credits)	Any one from GE baskets Basket A or D (3 credits)	English & Professional Communication (2 credits)	Life Skills & Personality Development (2 credits)	Yoga/ Health & Wellness/ Sports / Physical Fitness and Wellness/Community Services (2 credits)	22
II	2 sub x 5 credits	M02: Management Information System (3 credits)	Any one from GE baskets Basket B or E (3 credits)	Modern Indian Languages and Literature (2 credits)	IT Skills / Monetizing Social Media or Design Thinking (2 credits)	Critical Thinking / NSS/ Mental Health/ Environmental Studies (2 credits)	22
III	2 sub x 5 credits	M03: Word and PowerPoint & Spreadsheet Application with Excel/ R programming & Data Analytics (4 credits)	Any one from GE baskets Basket C or F (3 credits)	The Constitution, Human Rights and Law (2 credits)	Understanding basics of Cyber Security (2 credits)		21
IV	2 sub x 4 credits 1 sub x 5 credits	M04: Basics of Operating System/ Database Management with SQL/ PHP Programming & Web Development (4 credits) M05: Graphic Design with Photoshop and Illustrator/ Unix And Shell		Society Culture and Human Behavior / Universal Human Values (UHV) (2 credits)			23

		Programming/ Advanced Excel & Data Analytics (4 credits)					
V	2 sub x 5 credits	M06: Cloud Computing /Introduction to Computer Network (4 credits) M07: E-commerce and Application (4 credits)			Internship to be started after exam of 4th sem (sem break) and completed within 5th sem (weekends) (4 credits)		22
VI	2 sub x 5 credits 1 sub x 4 credits	M08: Web Development with HTML and CSS/ Data Mining & Data Warehousing (4 credits) M09: Internet and Networking /ERP (4 credits)					22
VII	2 sub x 5 credits 1 sub x 4 credits	M10: Software Project Management /Introduction To Cyber Security and Cyber Laws/ Machine Learning with Python (4 credits) M11: Digital Marketing/ Data Analysis and Interpretation// Data Analysis & Reporting using SAS (4 credits)					22
VIII	2 sub x 5 credits				Research project 12 credits		22

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	19 sub - 91 credits	**11 sub – 42 credits**	**3 sub – 09 credits**	**4 sub – 08 credits**	**3 sub & Int & Proj - 22 credits**	**2 sub – 4 credits**	**176**

Note:

Normally all 5 credit courses will be either theory (3) + practical (2) [100+100 marks] or theory (4) + tutorial (1) [100 marks]

Normally all 4 credit courses will be either theory (3) + tutorial (1) or theory (4) [100 marks]

Normally all 3 credit courses will be theory (3) – Inter disciplinary (5 to 6 baskets) [100 marks]

Normally all 2 credit courses AEC/SEC/CVA would be theory or online/sessional course

4th year subjects could be foundation of Master's program (as masters would be of 1 year after 4 years UG)

7/8th semester Major subjects could include Projects in core, if required

100/200/300/400 level should be maintained as per UGC document

For online course (Skill Enhancement Course) 2 credits=30 hours.

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Programme Outcomes for Minor Courses

	Programme Outcomes	MINOR-1	MINOR-2	MINOR-3	MINOR-4	MINOR-5	MINOR-6	MINOR-7	MINOR-8	MINOR-9	MINOR-10	MINOR-11
1	Values for life and character building			✔				✔		✔	✔	✔
2	Disciplinary knowledge	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
3	Communication skills		✔	✔	✔		✔	✔	✔	✔		✔
4	Critical thinking	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
5	Problem Solving	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
6	Analytical Reasoning	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
7	Research related skills	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
8	Cooperation/Teamwork	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
9	Scientific Reasoning	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
10	Reflective Thinking	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
11	Information/Digital Literacy	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔

12	**Self-directed Learning**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
13	**Moral and Ethical Awareness/Reasoning**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
14	**Leadership Readiness/Qualities**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
15	**Lifelong learning**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
16	**Professional Skills**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔

Legend: MINOR-1: Computer Fundamental; MINOR-2: Management Information System; MINOR-3: Word, PowerPoint & Spreadsheet Application; MINOR-4: Basics of Operating System/ Database Management with SQL; MINOR-5: Graphic Design with Photoshop & Illustrator; MINOR-6: Cloud Computing; MINOR-7: E-commerce and Application; MINOR-8: Web Development with HTML and CSS; MINOR-9: Internet and Networking; MINOR-10: Software Project Management; MINOR-11: Digital Marketing

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Semester I

Detailed Syllabus

Course: Computer Fundamental	
Course Code: MIC101	**Semester: I**
	Maximum Marks: 100
Teaching Scheme	**Examination Scheme**
Lecture: 3	End semester Exam: 70
Tutorial: 0	Attendance: 5
Practical: 0	Continuous Assessment: 25
Credit: 3	Practical/Seasonal internal continuous evaluation: 0
	Practical/Seasonal external examination: 0

Sl. No.	Course Objective
1	To develop understanding of computer hardware and software components.
2	To develop understanding of different operating systems and their functionalities.
3	To develop understanding of computer networking and its importance in modern computing.

4	To develop understanding of algorithm/pseudocode concepts and develop problem-solving skills.	
	Course Outcomes	**Mapped module/Unit**
CO 1	Student should have a solid understanding of computer hardware and software components.	U1, U2
CO 2	Student should have a good knowledge of various operating systems and their functionalities effectively.	U3
CO 3	Student should have a good knowledge of networking principles and configurations.	U2, U5
CO 4	Student should have a good knowledge of implementing the basic algorithm concepts to solve computational problems.	U4

Learning Outcome/Skills:

The candidate will be able to gain a thorough knowledge on the fundamental concepts of computer and its allied factors like hardware, software and programming languages for the random application in practical life.

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Unit	Total Hours	% of Questions	Bloom's Taxonomy	Remarks, if any
THEORY				
U1	**8**	**15**	**1**	**NA**
U2	**10**	**20**	**1, 2**	**NA**
U3	**8**	**25**	**1, 2, 3**	**NA**
U4	**12**	**25**	**1, 2**	**NA**
U5	**7**	**15**	**1, 2**	**NA**
	45	**100%**		

Course Code:	**MIC101**	
Course:	**Computer Fundamental** Credits:3.0	
Contents		
Chapter	**Name of the topic**	**Hours**
Unit-I	Basic Computer Concepts – Different generations of computer hardware, Modern taxonomy of computers; Hardware and software; Programming languages, Overview of computer systems and their components, Evolution of computers and their impact on society, Classification of computers (mainframes, personal computers, mobile devices), General idea of information and communication technologies, Information	**8**

	system development process.	
Unit-II	Computer Hardware – Input and Output devices; Memory (or storage) devices; Central Processing Unit. Input / Output devices: keyboard, mouse, light pen, barcode readers, scanners, MICR, OCR, voice recognition and handwriting recognition systems; visual display terminals, printers, plotters etc. Storage devices: Primary storage – RAM, ROM, EEROM, PROM, EPROM; Secondary storage – direct access devices, serial access devices: hard disks, floppy disks, magnetic tape, CD-ROM, DVD; Cache memory and Virtual memory. Central Processing Unit – Control Unit; Arithmetic and Logic Unit; Decoders; Registers; Machine Instructions; Stored program concept; Program execution: Fetch-Decode-Execute cycle; Arithmetic, logical and shift operations.	**10**
Unit-III	Meaning of software; broad classification of software; system software and application software; utilities. Systems software – Operating systems: Basic idea of an OS; OS as a resource manager – memory management, input/output management, secondary storage management, processor management, program management, network management; Brief introduction to different types of operating systems like DOS, Windows, Unix, Linux etc. Application software – System development tools, Utilities, Application packages, User- written programs.	**8**
Unit-IV	Programming languages and Algorithms – The concept of programming; pseudocode and flowcharts; structure of programs; program development guidelines; programming languages – machine language, assembly languages, high-level languages (procedural and object-oriented languages), fourth generation languages; object code and executable codes; compilers, translators, assemblers; Algorithms – Basic concept; Some typical algorithms – Finding the sum of a series, checking whether a number is prime or not, creating an array of numbers and displaying the largest element in the list, sorting a given set of numbers. (The algorithms may be	**12**

	implemented using either pseudocode or a high-level programming language).	
Unit-V	Computer Applications: Essential features of computer systems and structures required for office automation, communications, control systems, data acquisition, interactive multimedia, LAN, WAN, MAN networking.	**7**
	Total	**45**

List of Books

Name of Author	Title of the Book	Name of the Publisher
N.S. Gill	Handbook of Computer Fundamentals	Khanna Publishing House
P.K.Sinha	Computer Fundamentals	BPB Publication.
V.Rajaraman	Fundamentals of Computers	PHI, Sixth Edition

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Semester II

Detailed Syllabus

Course: Management Information System	
Course Code: MIC201	**Semester: II**
	Maximum Marks: 100
Teaching Scheme	**Examination Scheme**
Lecture: 3	End semester Exam: 70
Tutorial: 0	Attendance: 5
Practical: 0	Continuous Assessment: 25
Credit: 3	Practical/Seasonal internal continuous evaluation: 0
	Practical/Seasonal external examination: 0

Sl. No.	Course Objective
1	To gain an understanding of the role and importance of management information systems in organizations.
2	To understand fundamental concepts and theories related to information systems and their applications in management.
3	To understand the skills to analyse, design, and implement effective information systems to support decision-making and organizational processes.
4	To understand emerging trends and technologies in management information systems and their

	potential impact on organizational efficiency and competitiveness.	
	Course Outcomes	**Mapped module/Unit**
CO 1	Students should have a good understanding of the role and importance of management information systems in organizational decision-making and strategic planning.	U1
CO 2	Students should have a good understanding on different types of information system and ERP.	U1, U2
CO 3	Students should have a good understanding on technology to enhance operational efficiency and improve decision-making processes.	U1, U3, U4
CO 4	Student should stay updated with emerging trends and advancements in management information systems, enabling adaptation to changing business environments.	U4
CO 5	Students should have a good understanding on networking, security threads and understand risk management.	U5

Learning Outcome/Skills:

The candidate will be able to gain a detailed knowledge on the importance and the effectiveness of management information system including the concepts of software development, data communication and other relevant spheres and applications.

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Unit	Total Hours	% of Questions	Bloom's Taxonomy	Remarks, if any
THEORY				
U1	**6**	**20**	**1**	**NA**
U2	**8**	**15**	**1, 2**	**NA**
U3	**8**	**25**	**1, 2**	**NA**
U4	**11**	**15**	**1, 2, 3**	**NA**
U5	**12**	**25**	**1, 2, 3**	**NA**
	45	**100%**		

Course Code:	**MIC201**	
Course:	**Management Information System** Credits:3.0	
Chapter	**Name of the Topic**	**Hours**
UNIT I	Introduction, Data, Information, and Knowledge, Information Technology - Concept, Features and Components, Information Systems - Concept and types of Information Systems, Role of IT in business and society. MIS Concept, evolution and meaning of MIS; Information system for competitive advantage, MIS function in an organization. Limitations of MIS.	**6**

UNIT II	Information and Managerial Effectiveness: Information as a corporate resource, types of information – operational, tactical and strategic; Levels of management and information needs of management; Quality of information; Information systems for finance, marketing, manufacturing, human resource areas.	**8**
UNIT III	Understanding information system; concepts; sub-systems and super-systems; Types of information systems, Transaction processing systems, MIS decision support systems, Executive support system; Enterprise Resource Planning (ERP)(Features, merits, issues and challenges in implementation).	**8**
UNIT IV	System Development Life Cycle: Sequential Process of software development; Waterfall model. Development and Management of Data Bases: Relation databases, DDL, DCL, DML, Data Base Management Systems (DBMS) and their components, Concept of entity and relationships, ER Diagram, Data Model, Data dictionary, Introduction to SQL Queries.	**11**
UNIT V	Data Communication and Networking: Uses of computer networks, types of networks, network topologies; Network Devices, Intranets, Internet and Extranet. Security Issues Relating to Information Systems: Threats to information systems; Vulnerability, risk and control measures, Firewall, Antivirus, Risk Management,	**12**
	Total:	**45**

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List of Books

Sr. No.	Name of Author	Title of the BOOK	Publication
1	C. S. V. Murti	Management Information System	Himalaya Publishing House.
2	A.K. Gupta	Management Information System	S Chand.
3	Oka Miland M & Murty	Management Information System	Oxford University Press
4	Laudon, Laudon, Dass,	Management Information Systems	Pearson