MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

(A Govt. aided UGC Autonomous NAAC Accredited Institute Affiliated to RGPV, Bhopal)

Department of Computer Science and Engineering

Change in Syllabus and Scheme for B.Tech Computer Science and Engineering(2017-2022)

SEMESTER	2019-2023 BATCH		2020-2024 BATCH		Change	Semester Wise Overall Percentage Change	Percentage change in syllabus	Percentage change due to change in contant
	COURSE CODE	COURSE NAME	OURSE COD	COURSE NAME				
I	100201	Engineering Physics	230102	Introduction to Computer Programming	YES			
	100202	Energy, Environment, Ecology & Society	100022	Basic Electrical & Electronics Engineering	NO			
	100203	Basic Computer Engineering	100020	Basic Civil Engineering & Mechanics	NO			
	100204	Basic Mechanical Engineering	100021	Basic Mechanical Engineering	NO			
	100205	Basic Civil Engineering & Mechanics	100015	Energy, Environment, Ecology & Society	NO			
	100206	Language Lab. & Seminars	150111	IT workshop	YES			
						3.278688525		
II	100101	Engineering Chemistry	100011	Engineering Mathematics –I	NO			
	100102	Engineering Mathematics-I	150211	Data Structures	NO			
	100103	Technical English	150212	Object Oriented Programming & Methodology	NO			
	100104	Basic Electrical & Electronics Engineering	150213	Digital Electronics	NO		**5**	**0.09433962264**
	100105	Engineering Graphics	100016	Technical Language	YES			
	100106	Manufacturing Practices	100017	Language Lab	YES			
						3.278688525		**0.09433962264**
III	100001	Mathematics-II	100025	Engineering Mathematics-II	YES			
	150301	Digital Electronics	150311	Computer System Organization	NO			
	150302	Data Structures	150312	Operating System	NO			
	150303	Computer Graphics	150313	Computer Graphics	NO			
	150304	Object Oriented Programming and	150314	Design & Analysis of Algorithms	NO			
	150305	Hardware Lab	150315	Computer Hardware & Troubleshooting	YES			
	150306	Self-learning/Presentation	150316	Self-learning/Presentation	NO			
	150307	Summer Internship Project–I (Institute	200XXX	Novel Engaging Course	YES			
	100002	Biology for Engineers	150317	Summer Internship Project–I (Institute	NO			
			1000002	Biology for Engineers	NO			
						4.918032787		
IV	100003	Engineering Mathematics- III	150411	Computer Networks	NO			
	150401	Design & Analysis of Algorithms	150412	Database Management System	NO			
	150402	Database Management System	150413	Software Engineering	NO			
	150403	Operating System	150414	Theory of Computation	NO			
	150404	Computer System Organization	150415	Programming Lab Python Programming	YES			
	100004	Cyber Security	150416	Discrete Structures	YES			
	150405	Programming Lab	200XXX	Novel Engaging Course	YES			
			1000001	Indian Constitution and Traditional	YES			
						6.557377049		
V	100005	Ethics, Economics, Entrepreneurship &	150511	Data Science	YES			
	150501	Discrete Structures	150512	Networking with TCP/IP	YES			
	150502	Software Engineering	150513	Information Security	YES			
	150503	Theory of Computation	150514	Compiler Design	NO			
	150504	Microprocessor & Interfacing	150515	Artificial Intelligence	YES			
	150505	Minor Project-I	150516	Minor Project-I	NO			
	150506	Summer Internship Project-II (Evaluation)	150517	Summer Internship Project-II (Evaluation)	NO			
	150507	Self-learning/Presentation	200XXX	Novel Engaging Course (Informal	YES			
	100006	Indian Constitution & Traditional	150518	Self-learning/Presentation (SWAYAM/NPTE	NO			
			1000005	Project Management & Financing	YES			
			1000006	Disaster Management	YES			
						11.47540984		
VI	150601	Compiler Design	150611	Cloud Computing & Virtualization	YES			
	150602	Computer Networks	150612	Digital Image Processing	YES			
	DE	150611 Network & Web Security	150613	Machine Learning	YES			
	DE	150656 Introduction to Internet of Things 150657 Object Oriented System Development Using UML, Java And Patterns 150654 An Introduction to Artificial	DE	150658 Ethical Hacking 150651 Data Analytics using Python 150659 Blockchain and its Application	YES			
	OC	900106 Data Structures 900107 Python Programming	OC	910100 Data Structures 910101 Python Programming	NO			
	100007	Disaster Management	150614	Minor Project-II	NO			
	150603	Minor Project-II	200XXX	Novel Engaging Course (Informal	YES			
			1000007	Intellectual Property Rights (IPR)	YES			
						9.836065574		
	DE	150711 Networking with TCP/IP 150712 Data Mining & Warehousing 150713 Distributed Systems	DE	150711 Networking with TCP/IP 150712 Data Mining & Warehousing 150713 Distributed Systems	NO			
	DE	150756 Software Testing 150757 Big Data Computing 150758 Introduction to Machine Learning	DE	150756 Software Testing 150757 Big Data Computing 150758 Introduction to Machine Learning	NO			

VII	OC	900208 Soft Computing 900209 Network Security	OC	900208 Soft Computing 900209 Network Security	NO			
	OC	900220 R Programming 900222 Computer Networks	OC	900220 R Programming 900222 Computer Networks	NO			
	100008	Intellectual Property Rights (IPR)	100008	Intellectual Property Rights (IPR)	NO			
	150701	Departmental Lab	150701	Departmental Lab	NO			
	150702	Summer Internship Project-III (04 weeks)	150702	Summer Internship Project-III (04 weeks)	NO			
	150703	Creative Problem Solving (Evaluation)	150703	Creative Problem Solving (Evaluation)	NO			
						0		
VIII	DE	150859 Information Security -5- Secure Systems Engineering 150852 Privacy and Security in Online Social Media 150856 Blockchain and its Applications	DE	150859 Information Security -5- Secure Systems Engineering 150852 Privacy and Security in Online Social Media 150856 Blockchain and its Applications	NO			
	OC	Data Science for Engineers Introduction to Internet of Things An Introduction to Artifical Intelligence	OC	Data Science for Engineers Introduction to Internet of Things An Introduction to Artifical Intelligence	NO			
	150801	Internship/Project	150801	Internship/Project	NO			
	150802	Professional Development	150802	Professional Development	NO	**0**		
				Total Change	**39.344262**	**39.3442623**		**0.09433962264**
						OVERALL PERCENTAGE CHANGE		**39.43860192**

OLD SYLLABUS

DIGITAL ELECTRONICS
150213 (DC-3)

COURSE OBJECTIVES

- To perform the analysis and design of various digital electronic circuits.
- To learn various number systems, boolean algebra and logic gates.
- To understand the concept of counters, latches and flip-flops.

Unit-I

Introduction to Digital Electronics, Needs and Significance, Different Number System: Binary Numbers, Octal and Hexadecimal Numbers, Conversions, Complement's, Signed Binary Numbers, Binary Arithmetic's, Binary Codes: BCD, ASCII Codes.

Unit-II

Basic Theorems and Properties of Boolean Algebra, Boolean Functions, Boolean Relations. Digital Logic Gates, De Morgan's Theorem, Karnaugh Maps and simplifications.

Unit-III

Combinational Circuits, Half Adder, Full Adder, Binary Adder- Subtractor, Binary Multiplier, Comparator, Decoders, Encoders, Multiplexers.

Unit-IV

Sequential Circuits, Latches, Flip-Flops: RS Latches, Level Clocking, D Latches, Edge-triggered D Flip-flop, Edge-triggered JK Flip-flop, JK Master-slave Flip-flop; Registers, Shift Registers, Counters, Ripple Counters, Synchronous Counters.

Unit-V

Introduction to Memory, Memory Decoding, Error Detection and Correction, Programmable Logic Array, Programmable Array Logic, Sequential Programmable Devices, RTL and DTL Circuits, TTL, ECL, MOS, CMOS, Application Specific Integrated Circuits.

REVISED SYLLABUS

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Unit-II

Basic Theorems and Properties of Boolean Algebra, Boolean Functions, Boolean Relations, Digital Logic Gates, De Morgan's Theorem, Karnaugh Maps and simplifications, Prime Implicants and Essential Prime Implicants definition.

Unit-III

Combinational Circuits, Half Adder, Half Subtractor, Full Adder and Full Subtractor, Binary Adder-Subtractor, Binary Multiplier, Comparator, Decoders, Encoders, Multiplexers, Demultiplexer.

Unit-IV

Sequential Circuits, Latches, Flip-Flops: RS Latches, Level Clocking, D Latches, Edge-triggered D Flip-flop, Edge-triggered JK Flip-flop, JK Master-slave Flip-flop; Registers, Shift Registers, Counters, Ripple Counters, Synchronous Counters.

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Devices, RTL and DTL Circuits, TTL, ECL, MOS, CMOS, Application Specific Integrated Circuits.

RECOMMENDED BOOKS

- Digital Design, Morris Mano M. and Michael D. Ciletti, IV Edition, PearsonEducation.
- Digital Electronics: Principles, Devices and Applications, Anil K. Maini, Wiley.

COURSE OUTCOMES

After completion of the course students would be able to:

CO1. Explain the computer architecture for defining basic component and functional unit.
CO2. Recall different number system and solve the basic arithmetic operations.
CO3. Develop the understanding of combinational circuits.
CO4. Analyze the basic concept of sequential circuits.
CO5. Compare various memories.
CO6. Solve the Boolean functions using logic gates.

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