



Madhav Institute of Technology & Science, Gwalior

B.Tech. Information Technology

Vision

“To create world class quality Engineers and Technocrats capable of providing leadership in all spheres of life and society”

Mission

To provide quality education

To organize and arrange innovative courses / training programs /Workshops in the field of Computer Science & Engineering and Information Technology

To Promote research in the fields of Computer Science & Engineering and Information Technology

Programme Educational Objectives

PEO1 Work productively as Information Technology professional including supportive and leadership roles on multidisciplinary teams.

PEO2 Communicate effectively, recognize and incorporate societal needs and constraints in their professional endeavors with high regard to legal and ethical responsibilities.

PEO3 Engage in life-long learning to remain current in their profession and be ready to undertake challenging problems.

PO1 Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems

PO2 Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences

PO3 Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and

PO4 Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions

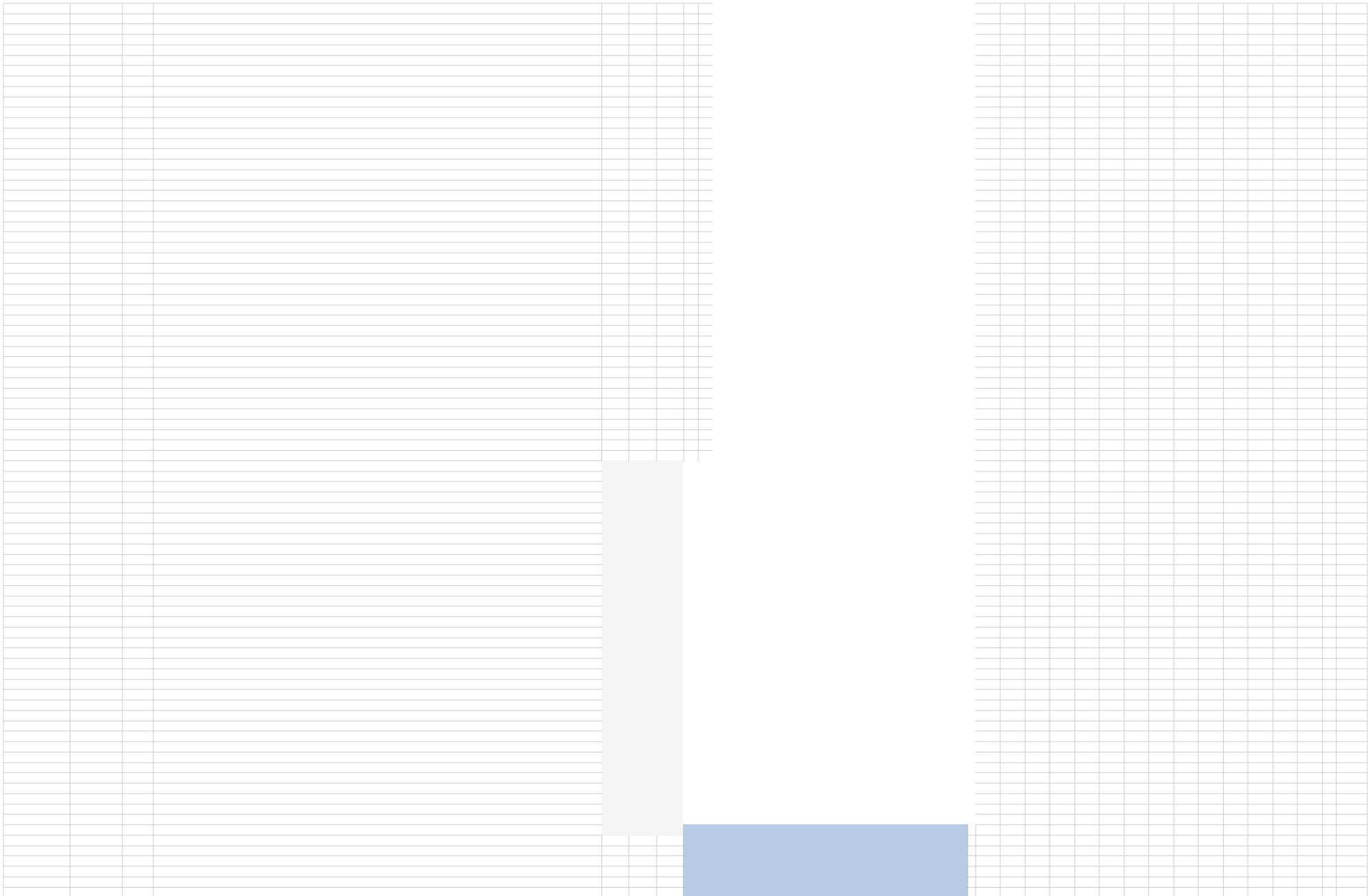
PO5 Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations

PO6 The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice

PO7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice
PO9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions
PO11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and Leader in a team, to manage projects and in multidisciplinary environments.
PO12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change
PSO1	Students are able to exhibit analytical & logical skills and apply knowledge of Information Technology.
PSO2	Students are able to identify, formulate and resolve real life/social problems by using current development in the field of information technology.

Semester 4	160402: main system	CO4	Analyze the evaluation of transaction processing and concurrency control.	2.6	3	2.68	2	3	2	2	1	1	2	2	2	2	3	5.36	8.04	5.36	5.36	2.68	2.68	5.36	5.36	5.36	8.04			
		CO5	Determine the optimize database for real world applications.	2.5	3	2.6	3	2	2	2	2	2	1	2	2	3	3	2	7.80	5.20	5.20	5.20	5.20	2.60	5.20	5.20	7.80	5.20		
		CO6	Design a database system for a real world application.	2.4	3	2.52	2	3	2	2	2	1	3	2	2	2	2	2	5.04	7.56	5.04	5.04	2.52	2.52	5.04	5.04	7.56	5.04		
	160402: Database management system																													
	160403: Operating system	CO1	Outline the basic concept of operating systems	2	2.2	2.0	3	2	1	3	1	1	2	3	1	3	2	3	6.12	4.08	2.04	6.12	2.04	2.04	2.40	4.08	6.12	4.08	6.12	
		CO2	Analyze the working of operating system	2	3	2.2	3	2	2	2	1	2	2	2	3	2	2	2	6.60	4.40	4.40	4.40	2.20	4.40	4.40	4.40	6.60	4.40	6.60	
		CO3	Examine the working of various scheduling/allocation approaches	2	3	2.2	2	2	1	1	2	3	1	2	2	2	2	2	4.40	4.40	2.20	4.40	6.60	2.20	4.40	6.60	4.40	4.40	4.40	
		CO4	Measure the performance of various scheduling/allocation approaches	1.1	3	1.5	2	3	2	2	2	1	2	2	3	2	2	2	2.96	4.44	2.96	2.96	1.48	2.96	2.96	2.96	4.44	2.96	4.44	
		CO5	Compare the various operating system problems/issues	1.5	3	1.8	3	2	2	2	2	2	2	2	2	3	3	3	4.26	4.26	1.42	2.84	1.42	2.84	1.42	2.84	4.26	2.84	4.26	
		CO6	Develop the Solution of various operating system problems/issues	1.5	1.1	1.4	3	3	1	1	2	2	1	3	2	2	3	2	1.52	1.54	1.72	1.93	1.68	1.31	1.54	1.47	1.43	1.79	1.34	1.43
160403: Operating system																														
160404: Computer System Organization	CO1	Demonstrate the computer architecture for defining basic component and functional unit.	2.5	2.5	2.5	3	1	1	2	2	2	2	2	1	1	1	7.50	2.50	2.50	5.00	5.00	5.00	5.00	5.00	5.00	2.50	5.00	2.50		
	CO2	Recall different number system and solve the basic arithmetic operations of signed and unsigned numbers.	2.5	3	2.6	3	1	1	1	2	1	2	1	2	1	1	1	7.80	2.60	2.60	2.60	5.20	2.60	5.20	2.60	2.60	2.60	2.60		
	CO3	Develop the fundamental concept to understand the working of microprocessor.	1.4	1.8	1.48	3	1	1	1	1	1	1	2	2	2	2	2	4.44	1.48	1.48	1.48	1.48	1.48	1.48	1.48	2.96	1.48	2.96	1.48	
	CO4	Explain the basic concept of input output organization.	3.0	1.4	2.68	2	2	2	2	1	1	1	1	2	2	2	2	5.36	5.36	2.68	5.36	2.68	2.68	2.68	2.68	5.36	2.68	5.36		
	CO5	Compare various memory and mapping techniques.	2.5	2	2.4	2	2	2	3	2	3	2	2	2	2	1	2	4.80	4.80	4.80	7.20	4.80	7.20	4.80	4.80	4.80	2.40	4.80	2.40	
	CO6	Develop the skill of writing assembly language programming.	2.5	1.5	2.3	2	2	2	2	3	2	3	2	3	2	2	2	4.60	4.60	4.60	6.90	4.60	6.90	4.60	6.90	4.60	6.90	4.60	6.90	
160404: Computer System Organization																														
160401: Design and Analysis of Algorithm Lab	CO1	Label basic algorithms and different problem solving strategies.	3.0	2.4	2.9	3	2	2	3	1	2	2	3	1	3	2	3	8.65	5.76	5.76	8.65	2.88	5.76	5.76	8.65	2.88	8.65	5.76	8.65	
	CO2	Demonstrate methods to solve non-conventional problems and expertise for analysing existing solutions.	3.0	2.2	2.8	3	2	1	2	1	2	2	2	3	2	3	2	8.54	5.70	2.85	5.70	2.85	2.85	5.70	5.70	8.54	5.70	8.54		
	CO3	Experiment with the algorithms as a precise mathematical concept.	3.0	2.0	2.8	3	2	1	2	2	2	2	2	3	2	3	2	8.40	5.60	2.80	5.60	5.60	5.60	5.60	8.40	5.60	8.40	5.60		
	CO4	Examine the design algorithms; establish their correctness, their efficiency and memory requirements.	3.0	2.7	2.9	2	3	2	2	1	2	2	2	2	3	2	3	5.87	8.80	5.87	5.87	2.93	5.87	5.87	5.87	8.80	5.87	8.80		
	CO5	Solve the problems using different algorithm solving paradigm.	2.4	2.2	2.4	3	2	1	2	3	2	1	2	2	3	3	2	7.05	4.70	2.35	4.70	2.35	4.70	2.35	4.70	7.05	4.70	7.05		
	CO6	Develop programming skills to practice well-known algorithms and design data structures to solve real-life problems.	3.0	1.9	2.8	2	3	2	2	1	3	2	3	2	2	3	2	5.56	8.34	5.56	5.56	2.78	5.56	5.56	8.34	5.56	5.56	8.34	5.56	
160401: Design and Analysis of Algorithm Lab																														
160402: Database management system Lab	CO1	Construct database schema for a given problem domain.	1.2	3	1.6	2	2	2	3	3	3	2	3	2	2	2	3.28	3.12	3.12	4.68	4.68	4.68	3.28	3.12	4.68	3.12	4.68	3.12		
	CO2	Apply integrity constraints on a database schema using a state-of-the-art RBMS.	1.3	3	1.6	2	2	2	2	2	2	2	2	3	2	2	2	4.40	6.60	4.40	4.40	2.20	2.20	4.40	4.40	6.60	4.40	6.60		
	CO3	Apply SQL queries using DDL and DML to design and access database system.	2	3	2.2	2	3	2	2	2	1	2	2	2	3	2	2	7.80	5.20	5.04	5.04	2.52	2.52	5.04	5.04	7.80	5.20	7.80		
	CO4	Make use of operators and functions used in query.	2.5	3	2.6	3	2	2	2	2	2	2	2	3	3	3	3	7.56	7.56	5.04	5.04	2.52	7.56	7.56	5.04	5.04	7.56			
	CO5	Distinguish Tables and Views for database system.	2.4	3	2.5	3	3	2	1	3	3	3	1	2	3	2	2	3.12	4.68	3.12	3.12	1.56	1.56	3.12	3.12	4.68	3.12	4.68		
	CO6	Develop a small project for real world scenario.	1.2	3	1.6	2	3	2	2	1	3	2	2	2	3	2	2	2.18	2.09	2.09	1.77	1.99	2.36	1.82	2.25	1.64	1.98	2.02	2.13	2.23
160402: Database management system Lab																														
160405: Programming Lab	CO1	Demonstrate the fundamentals of computer programming	1.2	2.4	1.4	3	2	2	3	1	2	2	3	1	3	2	3	4.32	2.88	2.88	4.32	1.44	2.88	2.88	4.32	1.44	4.32	2.88	4.32	
	CO2	Read, understand and trace the execution of program	1.3	3	1.6	3	2	1	2	1	2	2	2	3	2	2	2	4.92	3.28	1.64	3.28	1.64	3.28	3.28	4.92	3.28	4.92			
	CO3	Develop Conditional and Iterative Statements	1.4	3	1.7	3	3	2	2	2	3	2	3	2	3	2	2	5.16	5.16	3.44	3.44	3.44	3.44	3.44	5.16	3.44	5.16			
	CO4	Design the program using functions	1.5	2.8	1.8	3	2	2	1	1	2	2	2	3	2	3	2	3.52	5.28	3.52	3.52	1.76	1.76	3.52	3.52	5.28	3.52	5.28		
	CO5	Implement the programs using Derived and User defined data types	2.4	2.4	2.4	3	2	2	2	2	1	2	2	3	3	3	2	7.20	4.80	4.80	4.80	2.40	4.80	4.80	4.80	7.20	4.80	7.20		
	CO6	Design program for a given problem using computer programming	2.2	3	2.2	3	2	1	2	3	2	2	3	2	3	2	2	6.60	6.60	4.40	2.20	4.40	6.60	4.40	6.60	4.40	6.60			
160405: Programming Lab																														
160503: Theory of Computation	CO1	Explain the basic concepts of switching and finite automata theory and languages.	2.3	2.4	2.3	3	2	1	2	1	2	1	3	1	3	2	2	6.96	4.64	2.32	4.64	2.32	4.64	2.32	6.96	2.32	6.96	4.64		
	CO2	Relate practical problems to languages, automata, computability, and complexity.	3	2.3	2.9	3	2	1	2	1	2	2	2	3	2	2	2	8.56	5.71	2.85	5.71	2.85	5.71	5.71	8.56	5.71	8.56			
	CO3	Construct abstract models of computing and analyse their power to recognize the languages.	3	3.0	3.0	3	2	2	1	3	3	3	1	2	3	3	2	9.00	9.00	6.00	3.00	9.00	9.00	6.00	9.00	6.00	9.00			
	CO4	Construct and analyze the grammar.	2	2.9	2.2	3	2	2	2	1	1	2	2	3	2	2	2	4.35	6.53	4.35	4.35	2.18	2.18	4.35	4.35	6.53	4.35	4.35		
	CO5	Apply mathematical models and descriptors in various computing theories	1.2	2.4	1.4	3	2	2	2	2	3	1	2	2	3	3	2	4.35	2.90	2.90	2.90	1.45	2.90	2.90	2.90	4.35	2.90	4.35		
	CO6	Solve problems in computer science using mathematical and formal techniques.	2.5	3.0	2.6	2	3	2	2	2	3	2	2	3	2	2	2	5.20	7.80	5.20	5.20	7.80	5.20	5.20	7.80	5.20	7.80			
160503: Theory of Computation																														
160502: Software Engineering	CO1	List various software models with respect to their accuracy and needs of the customer requirement.	2	3	2	3	2	1	2	2	1	2	1	3	1	3	2	2	6.60	4.40	2.20	4.40	2.20	4.40	2.20	6.60	4.40	6.60		
	CO2	Explain the real world problems using software engineering concepts.	1.5	3	2	3	2	1	2	1	2	2	2	3	2	2	2	5.40	3.60	1.80	3.60	1.80	3.60	3.60	5.40	3.60	5.40			
	CO3	Develop the technique and results with customer expectations.	2.3	3	2	3	2	2	1	3	3	2	1	2	3	2	2	7.32	7.32	4.88	4.88	2.44	7.32	7.32	4.88	4.88	7.32			
	CO4	Identify and how to use various cost estimation techniques used in software engineering.	1.7	3	2	2	3	1	3	1	2	2	2	3	2	2	2	3.92	3.92	5.88	1.96	5.88	1.96	1.96	3.92	3.92	5.88			
	CO5	Compare design of a system, component, or process to meet desired needs within realistic constraints	1.3	3	2	3	2	3	1	2	2	3	1	2	3	3	2	4.88	3.26	4.88	1.63	3.26	3.26	4.88	1.63	3.26	4.88			
	CO6	Develop the techniques, skills and software engineering tools necessary for engineering domain.	3	3	3	2	2	2	2	3	2	2	3	2	2	3	2	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00			
160502: Software Engineering																														
160504: Microprocessor & Interfacing	CO1	Classify the concepts of different advanced microprocessors and microcontroller.	1.5	2.8	1.8	3	2	1	2	3	1	2	1	3	1	3	2	5.28	3.52	1.76	3.52	1.76	3.52	1.76	3.52	1.76	3.52			
	CO2	Illustrate the various peripheral interfaces, controllers and bus standards.	2	1.9	2.0	3	2	1	2	2	2	2	3	2	3	2	2	5.94	3.96	1.98	3.96	3.96	3.96	3.96	5.94	3.96	5.94			
	CO3	Build a system using peripheral devices and controllers for 8086 microprocessor.	2	3	2.2	3	2	1	1	3	3	3	1	2	2	2	2	6.60	6.60	4.40	2.20	6.60	6.60	4.40	6.60	4.				

160604: Microprocessor and interfacing LAB	CO1	Explain types of instructions and addressing modes.	3	3	3.0	3	1	1	2	1	2	1	2	1	3	1	3	2	2	9.00	3.00	3.00	6.00		3.00	6.00		3.00	9.00	3.00	9.00	6.00	6.00		
	CO2	Make use of Hex code needed in assembly language	3	3	3.0	3	2	1	2	1	2	2	2	2	3	2	3	2	3	9.00	6.00	3.00	6.00		3.00	6.00		6.00	9.00	6.00	6.00	9.00	6.00		
	CO3	Experiment with various peripheral devices to interface with microprocessor.	2.8	3	2.8	3	3	2	2	1	1	3	3		1	2	3	2	3	8.52	8.52	5.68		2.84	8.52		8.52	6.00	6.00	6.00	6.00	9.00	6.00	8.52	
	CO4	Simplify the arithmetic, Logical, etc. problems using instruction set of 8086/8051 microprocessor.	3	3	3.0	2	3	2	2	2	1	1	2	2	2	3	2	2	2	6.00	9.00	6.00	6.00		3.00	3.00		6.00	6.00	6.00	6.00	9.00	6.00	6.00	
	CO5	Determine the process required in interfacing with 8086/8051.	2.8	3	2.8	3	2	2	2	2	2	3	1	2	2	2	3	3	2	8.52	5.68	5.68			5.68	8.52		2.84	5.68	5.68	5.68	8.52	8.52	8.52	
	CO6	Develop the assembly language programs in 8086/8051 to solve a real world problem.	3	3	3.0	2	3	2	2	2	2	3	2	2	2	2	3	2	3	6.00	9.00	6.00		6.00			9.00	6.00	6.00	6.00	9.00	6.00	6.00		
160604: Microprocessor and interfacing LAB																																			
160601: Compiler Design	CO1	Recall the concepts of finite automata and context free grammar	3	2.2	2.8	3	2	1	2	1	2	2	2	2	3	2	3	2	3	8.52	5.68	2.84	5.68		2.84	5.68		5.68	5.68	5.68	5.68	8.52	5.68	8.52	
	CO2	Build the concept of working of compiler	3	3	3.0	3	3	2	1	1	3	3			1	2	3	2	3	9.00	9.00	6.00		3.00	3.00		9.00	6.00	6.00	6.00	9.00	6.00	6.00	9.00	
	CO3	Examine various parsing techniques and their comparison	3	2.9	3.0	2	3	2	2	1	1	2	2	2	2	3	2	2	2	5.96	8.94	5.96	5.96		2.98	2.98		5.96	5.96	8.94	5.96	5.96	5.96	5.96	
	CO4	Compare various code generation and code optimization techniques.	3	2.2	2.8	3	2	2	2	1	1	2	2	2	2	3	2	3	1	2	8.52	5.68	5.68		5.68	2.84		5.68	5.68		5.68	8.52	2.84	5.68	
	CO5	Analyze different tools and techniques for designing a compiler	2	3	2.2	2	1	2	2	2	3	1	2	1	3	2	2	2	3	4.40	2.20	4.40		4.40	6.60		2.20	6.60	4.40	6.60	4.40	6.60	4.40	6.60	
	CO6	Design various phases of compiler	1.5	3	1.8	3	3	2	1	1	1	2	2	2	2	2	2	2	3	5.40	5.40	3.60		1.80	1.80	1.80	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60
160601: Compiler																																			
160602: Computer Networks	CO1	Define Security and its requirement at different levels & in different cases.	3	3	3.0	3	1	1	2	1	2	1	3	1	3	2	2	2	9.00	3.00	3.00	6.00		3.00	6.00		3.00	9.00	3.00	9.00	6.00	6.00			
	CO2	What are security principles and how they can be achieved.	3	3	3.0	3	2	1	2	1	2	2	2	2	3	2	2	3	9.00	6.00	3.00	6.00		3.00	6.00		6.00	6.00	6.00	6.00	9.00	6.00	6.00		
	CO3	Outline the characteristics and working of infected/ malicious system or person.	3	2.9	3.0	3	3	2	2	1	1	3	3		1	2	3	1	2	8.94	8.94	5.96		2.98	2.98	8.94	8.94		2.98	5.96	8.94	5.96	8.94		
	CO4	Analyze the different attacks and perform security algorithm/ solution accordingly.	2	2.5	2.4	3	2	2	2	1	1	2	2	2	2	2	3	2	2	4.84	7.26	4.84	4.84		2.42	2.42		4.84	4.84	7.26	4.84	4.84			
	CO5	Explain the mechanisms/ techniques for various attacks against security or more specifically principles of security.	2	2.4	2.3	3	2	2	2	2	3	1	2	2	2	3	3	3	2	4.59	6.89	4.59		4.59			6.89	4.59		4.59	6.89	4.59			
	CO6	Justify the role of Government and thirty party in security.	2	3	2.3	3	2	2	2	2	2	3	2	2	2	3	2	3	3	2.27	2.29	2.14	2.81	2.52	1.90	1.93	2.00	2.28	2.72	1.98	2.19	2.12	2.22		
160602: Computer Networks																																			
160602: Agile Methodology	CO1	Demonstrate Scrum Release Planning and Scrum Sprint Planning	2.5	3	2.6	1	2	3		1	3	3	2	3					2.59	5.19				7.78			7.78	5.19	7.78	5.19					
	CO2	Apply user stories into tasks and ideal day estimates.	3.0	3	3.0	3	3	3			2	3	3	3					9.00	9.00	9.00			6.00	9.00		9.00	9.00							
	CO3	Classify a Sprint with Sprint Reviews and Sprint Retrospectives	2.5	3	2.6		2	3	1			2	3	3	3	2			9.00	9.00				6.00	9.00		9.00	9.00							
	CO4	Examine the Scrum with multiple team or distributed project teams.	2.5	2.9	2.6	1	3	2	2	3	1	2	3	2	3	3			2.57	7.72		5.15		7.72	2.57		7.72	5.15	7.72	7.72					
	CO5	Design test driven and agile principle based software.	3.0	3	3.0		2					2	3	2	2					5.75					8.62			8.62	8.62						
	CO6	Develop any application using agile methodology.	2.8	3	2.9	2				3				3	3				2.84	2.74	1.30	2.70	2.59	2.72	2.79	2.03	2.59	2.57	2.27	2.74	1.85				
160602: Agile Methodology																																			
160611: Network and Web security	CO1	Explain cryptographic algorithms, hash algorithms and authentication mechanisms.	3.0	3	3.0	3	2	2	3	1	2	2	2	3	1	3	2	3	9.00	6.00	6.00	9.00		3.00	6.00		6.00	9.00	3.00	9.00	6.00	9.00			
	CO2	Illustrate fundamentals of number theory, attacks and security principles.	3.0	3	3.0	3	2	1	2	1	2	2	2	2	2	3	2	3	9.00	6.00	3.00	6.00		3.00	6.00		6.00	6.00	6.00	6.00	9.00	6.00	9.00		
	CO3	Apply number theory and various algorithms to achieve principles of security.	3.0	3	3.0	3	3	2	2	2	3	2	2	2	2	2	2	2	3	9.00	9.00	6.00		6.00	9.00		6.00	9.00	6.00	6.00	9.00	6.00	9.00		
	CO4	Analyze the cause for various existing network attacks and describe the working of available security controls	1.9	3	2.1	2	3	2	2	1	1	2	2	2	2	3	2	3	2	4.19	6.28	4.19	4.19		2.09	2.09		4.19	4.19	6.28	4.19	6.28			
	CO5	Examine the vulnerabilities in IT infrastructure.	1.7	3	2.0	3	2	2	2	2	2	1	2	2	2	3	3	3	2	5.96	3.97	3.97		3.97	3.97	1.99	3.97	3.97	5.96	3.97	5.96	3.97			
	CO6	Predict the attacks and controls associated with IP, transport-level, web and e-mail security.	1.7	1.9	1.8	2	3	2	2	1	1	2	3	2	2	3	2	3	2	3.53	5.30	3.53		3.53	1.77		5.30	3.53	3.53	5.30	3.53				
160611: Network and Web security																																			
160711: Networking with TCP/IP	CO1	define the concept of computer network and various layered architecture.	3	3.0	3.0	1	3	2	2	3	1	2	2	1	2	1	2	3	3.00	9.00		6.00	6.00	9.00	3.00	6.00	3.00	3.00	6.00	6.00	9.00	6.00	6.00		
	CO2	compare the classless and class full addressing of IPV4.	3	2.5	2.9	1	3	2	2	2	2	2	2	2	2	2	2	2	2	2.90	8.70	5.80	5.80		5.80	5.80		5.80	5.80	5.80	5.80	5.80	5.80		
	CO3	identify the different types of networking devices and their functions within a network.	2.4	3.0	2.5	3	3	2	3	3	3	2	2	2	2	2	2	2	2	5.04	7.56			7.56	7.56	5.04	5.04	5.04	5.04	5.04	5.04	5.04			
	CO4	analyze various protocols of computer networks for assisting network design and implementation.	3	3.0	3.0	1	1	2	1	1	2	2	3	2	2	3	2	2	2	3.00	3.00	6.00	3.00	3.00	6.00	6.00	9.00	6.00	9.00	6.00	9.00	6.00	6.00		
	CO5	design client server applications and communication model and protocols for communication.	3	3.0	3.0	2	3	1	3	2	3	2	2	3	2	2	2	2	2	6.00	9.00	3.00	9.00		6.00	9.00	6.00	6.00	9.00	6.00	6.00	6.00	6.00		
	CO6	elaborate various TCP/IP protocol for achieving multimedia and security services.	2.5	3.0	2.6	2	2	2	2	2	2	3	3	2	2	2	2	2	2	5.20	5.20	5.20		5.20	5.20	7.80	7.80	5.20	5.20	5.20	5.20	5.20	5.20		
160711: Networking with TCP/IP																																			
BITL801: Image Processing	CO1	Explain different modalities and current techniques in image acquisition.	2.7	1.9	2.5	3	1	1	2	1	2	1	3	1	3	2	2	2	7.62	2.54	2.54	5.08		2.54	5.08		2.54	7.62	2.54	7.62	5.08	5.08			
	CO2	Classify spatial and frequency domain techniques in image processing.	2.7	1.8	2.5	3	2	1	2	1	2	2	2	2	3	2	2	3	7.56	5.04	2.52	5.04		2.52	5.04	5.04	5.04	7.56	5.04	7.56					
	CO3	Apply image processing techniques to enhance visual images.	2.7	3.0	2.8	3	2	2	1	1	3	3			1	2	3	2	8.28	8.28	5.52		2.76	2.76	8.28	8.28		2.76	5.52	8.28					
	CO4	Analyze the constraints in image processing when dealing with real problems	2.5	2.8	2.6	2	3	2	2	1	1	2	2	2	2	3	2	2	2	5.12	7.68	5.12	5.12		2.56	2.56		5.12	5.12	7.68	5.12	5.12			
	CO5	Evaluate various enhancement, restoration and retrieval techniques of image processing	2.1	3.0	2.3	3	2	2	2	2	3	1	2	2	2	3	3	3	2	6.84	4.56	4.56		4.56	6.84	2.28	4.56	4.56	6.84	6.84	6.84	6.84			
	CO6	Design a system using mathematical models and principle of digital image processing for real world problems	1.9	3.0	2.1	2	3	2	2	2	2	3	2	2	2	3	2	2	3	4.24	6.36	4.24		4.24			6.36	4.24	4.24	6.36	4.24				
BITL801: Image Processing																																			
BITL802: Data warehouse and data Mining	CO1	Tell various methods for storing & retrieving data from different data sources	1.6	2.9	1.9	3	2	2	3</																										



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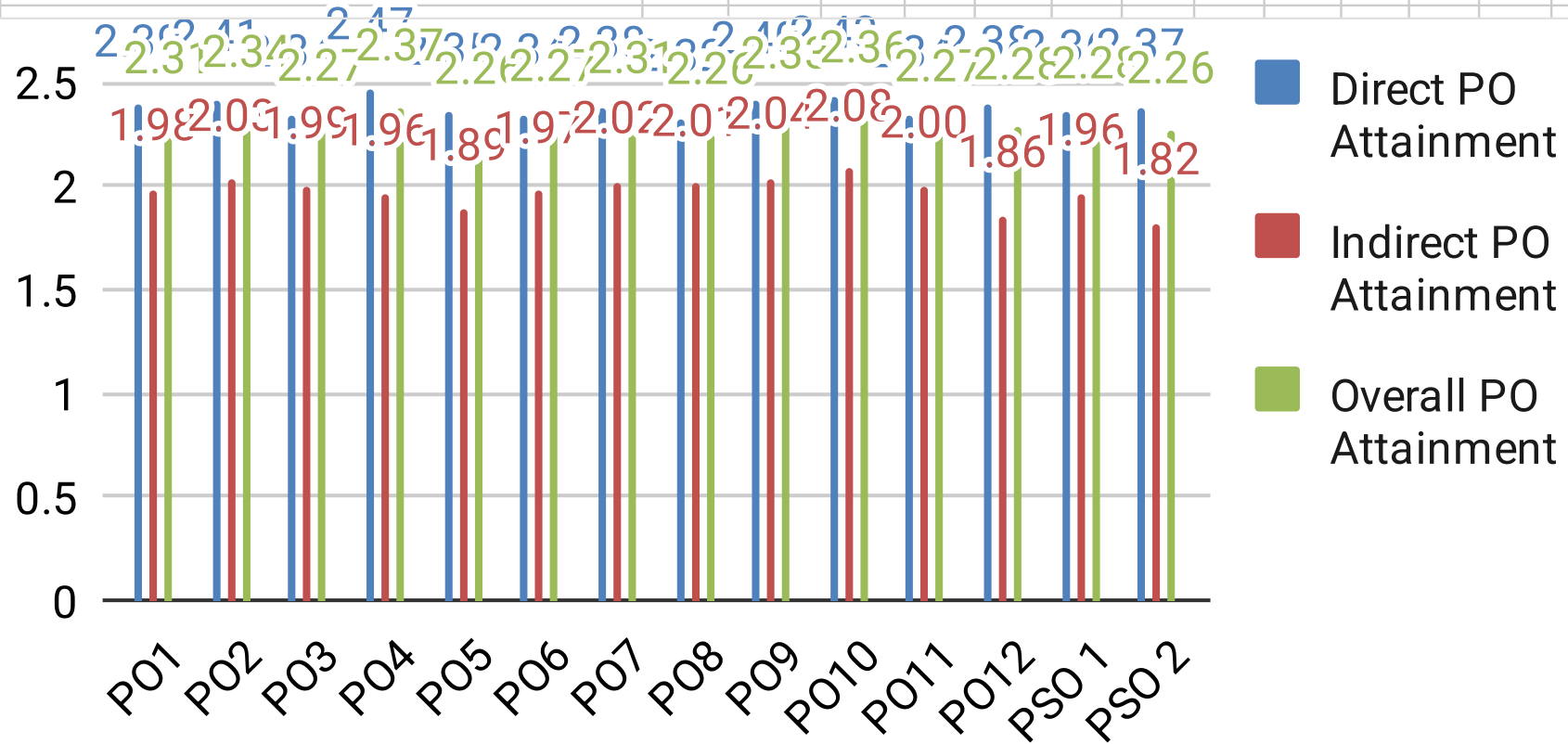
Department :		Information Technology						Year 2017-2021								
S.No.	Course Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	
1	160301: Digital Electronics	2.43	2.55	2.52	2.53	2.38	2.52	2.26	2.58	2.36	2.42	2.48	2.50	2.55	2.46	
2	160302: Data Structures	2.54	2.47	2.50	2.66	2.36	2.50	2.45	2.79	2.51	2.36	2.68	2.46	2.45	2.56	
3	160304: OOPs and methodology	2.77	3.00	2.08	2.74	2.04	2.60	3.00	2.47	2.68	3.00	2.56	2.62	2.47		
4	160303: Computer Graphics and Multimedia	1.68	1.81	1.71	2.21	1.64	1.56	1.61	1.36	1.73	1.87	1.64	1.72	1.61	1.74	
5	160302: Data Structure LAB	2.80	2.77	2.76	2.69	2.72	2.82	2.79	2.97	2.78	2.65	2.78	2.78	2.79	2.78	
6	160303: Computer Graphics LAB	2.81	2.82	2.83	2.73	2.84	2.82	2.75	2.99	2.85	2.69	2.85	2.82	2.84	2.83	
7	160304: Object Oriented Programming LAB	2.84	2.76	2.83	2.76	3.00	2.81	2.80	3.00	2.78	2.68	2.99	2.81	2.76	2.84	
8	160305: Hardware LAB	1.96	1.82	2.02	2.07	0.77	2.28	2.49	1.50	1.98	2.09	1.80	1.98	2.25	2.11	
9	160402: Database management system	2.50	2.58	2.51	2.21	2.52	2.57	2.57	2.39	2.49	2.52	2.42	2.69	2.47	2.54	
10	160403: Operating system	1.52	1.54	1.72	1.93	1.68	1.31	1.54	1.47	1.43	1.79	1.34	1.43	1.44	1.53	
11	160404: Computer System Organization	2.30	2.37	2.42	2.49	2.35		2.48	2.35		2.48	2.30	2.28	2.42	2.31	
12	160401: Design and Analysis of Algorithm Lab	2.75	2.78	2.80	2.89	2.78	2.68	2.75	2.68	2.77	2.84	2.74	2.76	2.74	2.76	
13	160402: Database management system Lab	2.18	2.09	2.09	1.77		1.99	2.36	1.82	2.25	1.64	1.98	2.02	2.13	2.23	
14	160405: Programming Lab	1.87	1.87	1.88	1.59	1.88	1.94	1.93	1.89	1.86	1.44	1.86	1.86	1.90	1.86	
15	160503: Theory of Computation	2.40	2.44	2.36	2.45	2.60	2.21	2.24	2.39	2.47	2.43	2.18	2.31	2.35	2.41	
16	160502: Software Engineering	2.13	2.19	2.14	1.93	2.18	1.94	2.06	1.74	2.25	2.52	1.85	2.08	2.19	2.13	
17	160504: Microprocessor & Interfacing	2.09	2.15	2.17	2.10	1.94	2.09	2.11	2.00	2.16	1.94	2.10	2.10	2.12	2.10	
18	160501: Discrete Structures	2.08	2.49	2.95	2.68	2.48	2.71	2.23	2.65	2.52		2.62	2.56	2.69	2.21	
19	160503: Theory of Computation LAB	2.74	2.77	2.72	2.90	3.00	2.74	2.63	2.76	2.74	3.00	2.82	2.81	2.75	2.75	
20	160502: Software Engineering LAB	2.44	2.60	2.40	3.00	3.00	2.00	2.00	2.00	2.54	3.00	2.14	2.40	2.36	2.40	
21	160601: Compiler	2.61	2.64	2.59	2.91	2.62	2.55	2.55	2.84	2.68		2.62	2.61	2.59	2.57	
22	160602: Computer Networks	2.27	2.29	2.14	2.81	2.52	1.90	1.93	2.00	2.28	2.72	1.98	2.19	2.12	2.22	
23	160602: Agile Methodology	2.84	2.74	1.30	2.70	2.59	2.72	2.79	2.03	2.59	2.57	2.27	2.74	1.85		
24	160611: Network and Web security	2.54	2.44	2.43	2.74	1.77	2.48	2.63	2.66	2.42	2.51	2.45	2.49	2.39	2.52	
25	160711: Networking with TCP/IP	2.79	2.79	2.89	3.00	2.81	2.78	2.80	2.98	2.78	2.83	2.84	2.89	2.89	2.84	
26	BITL801: Image Processing	2.48	2.46	2.45	2.54	2.33	2.49	2.53	2.44	2.45	2.37	2.47	2.45	2.43	2.47	

27	BITL802: Data warehouse and data Mining	2.30	2.35	2.25	2.05	2.45	2.27	2.04	2.40	2.36	2.16	2.45	2.23	2.32	2.23
28	BITL803: Neural Network and Fuzzy systems	2.24	2.25	2.25	2.15	2.27	2.20	2.32	1.95	2.26	2.55	2.09	2.22	2.28	2.22
29	BITL804: Internet of things and Application	2.36	2.34	2.35	2.51	2.27	2.37	2.29	2.39	2.33	2.55	2.46	2.44	2.38	2.35

	INDIRECT PO ATTAINMENT	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2
Survey 1	(Exit Survey)	2.02	2.06	2.02	2.00	2.05	2.17	2.12	2.00	2.15	2.14	2.05	2.03	2.08	1.78
Survey 2	(Alumni Survey)	2.10	2.10	2.06	2.14	2.01	2.08	2.06	2.12	2.14	2.19	2.26	2.23	2.15	2.10
Survey 3	(Employer Survey)	1.84	1.93	1.90	1.74	1.61	1.66	1.87	1.89	1.82	1.90	1.68	1.31	1.66	1.58
	Indirect PO Attainment	1.98	2.03	1.99	1.96	1.89	1.97	2.02	2.01	2.04	2.08	2.00	1.86	1.96	1.82

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Department :	Information Technology			Year	2017-2021										
	PO ATTAINMENT	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2
	Direct PO Attainment	2.39	2.41	2.34	2.47	2.35	2.34	2.38	2.32	2.40	2.43	2.34	2.38	2.36	2.37
	Indirect PO Attainment	1.98	2.03	1.99	1.96	1.89	1.97	2.02	2.01	2.04	2.08	2.00	1.86	1.96	1.82
	Overall PO Attainment	2.31	2.34	2.27	2.37	2.26	2.27	2.31	2.26	2.33	2.36	2.27	2.28	2.28	2.595726



S.No.	Name of your Organization	[Level of technical contribution] [PEO 1 & 3]	[Level of success in learning new areas, engaging in professional development, and adapting to technological change] [PEO 1, 2, 3, 4]	[Have they been deserved for elevation to higher level ?] [PEO 1, 2, 4]	[Level of ethical and social responsibility] PEO 1,2,4	[Demonstrated ability to work well on a team] PEO 1,2,4	Any Other Comment / Suggestions	Category	[Level of technical contribution] [PEO 1 & 3]	[Level of success in learning new areas, engaging in professional development and adapting to technological change] [PEO 1, 2, 3, 4]	[Have they been deserved for elevation to higher level ?] [PEO 1, 2, 4]	[Level of ethical and social responsibility] PEO 1,2,4	[Demonstrated ability to work well on a team] PEO 1,2,4	
1	MPMKVVCL BHOPAL	Excellent	Very Good	Excellent	Excellent	Excellent	Good technical knowledge	Excellent	10	11	11	12	14	
2	The Indian Hume Pipe Co. Ltd.	Very Good	Excellent	Very Good	Excellent	Very Good	GOOD. KEEP IT UP	Very Good	12	12	13	11	11	
3	Jamma Auto Industries Limited	Very Good	Very Good	Excellent	Very Good	Excellent	Hardworking & smart students	Good	12	12	13	11	11	
5	Lovely Professional University	Excellent	Very Good	Excellent	Excellent	Excellent	Mr Tushar is sincere and hard working and is an as	Poor	0	2	1	1	1	
6	Quirk	Very Good	Excellent	Very Good	Very Good	Very Good	Nicholas is a great addition to the team. He has sh							
7	Britannia Industries Limited	Very Good	Very Good	Very Good	Very Good	Very Good	Overall Good Candidates	Feedback Response	73.00	73.50	74.63	74.87	77.95	
8	HCIL, gurgaon	Fair	Very Good	Fair	Very Good	Very Good	Please make your study environment as per private							
9	Schneider Electric Infrastructure Ltd	Very Good	Very Good	Excellent	Very Good	Very Good	Positive, dynamic, fast learner, good team performe							
10	Department of Revenue, MP	Very Good	Excellent	Excellent	Very Good	Excellent	Require more Co -Operation and Co-Ordination.	Column1	Question 1	Question 2	Question 3	Question 4	Question 5	Indirect % Attainment
11	Delhi International Airport Ltd	Fair	Fair	Fair	Fair	Fair		PE01	1	1	1	1	1	74.79
12	GPC sheopur	Excellent	Very Good	Very Good	Fair	Very Good		PE02	1	1	1	1	1	75.24
13	Persistent Systems Ltd.	Very Good	Very Good	Very Good	Very Good	Very Good		PE03	1	1				73.25
14	IVEM Technologies	Fair	Excellent	Very Good	Very Good	Excellent		PE04						
15	PERSISTENT SYSTEMS PRIVATE L	Excellent	Excellent	Excellent	Excellent	Excellent								
16	samrat ashok technological institute	Very Good	Very Good	Very Good	Very Good	Very Good								
17	Zensar Technologies Pvt. Ltd.	Fair	Fair	Fair	Fair	Fair								
18	Gartner	Fair	Poor	Poor	Very Poor	Very Poor								
19	MPWRD	Fair	Poor	Very Good	Fair	Very Good								
20	Xavent Digital Powered by Telus Inter	Very Good	Very Good	Very Good	Very Good	Very Good								
21	MP Rural Road Development Authori	Excellent	Excellent	Excellent	Excellent	Excellent								
22	Accenture	Excellent	Excellent	Excellent	Excellent	Excellent								
23	DILIP BUILDCON LIMITED BHOPAL	Very Good	Excellent	Excellent	Very Good	Excellent								
24	BORL	Very Good	Very Good	Very Good	Very Good	Very Good								
25	Madhya Pradesh Rural Engineering S	Very Good	Very Good	Very Good	Excellent	Excellent								
26	Food Corporation of India	Excellent	Fair	Very Good	Excellent	Very Good								
27	SPU Balaghat	Excellent	Excellent	Very Good	Excellent	Excellent								
28	Wipro Technologies	Excellent	Excellent	Excellent	Excellent	Excellent	Jai is an excellent team player and a fast learner.H							

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Department : Information Technology

Year 2017-2021

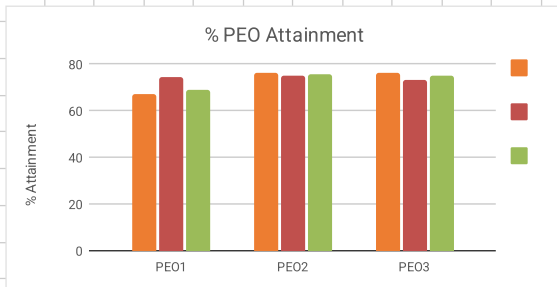
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
PEO1	3	3	3	3	2		3	3	3	3	2	2	2	2
PEO2				3	3							3	3	3
PEO3	3	3	3		3	3								
PO Attainment	2.31	2.34	2.27	2.37	2.26	2.27	2.31	2.26	2.33	2.36	2.27	2.28	2.28	2.26

PEO1	Graduates of the programme will have successful technical and professional careers
PEO2	Graduates of the programme will continue to learn and adapt in a world of constantly evolving technology
PEO3	Graduates of the programme will be able to apply, analyze, design and create products and solutions for real life Electrical Engineering problems

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
PEO1	2.31	2.34	2.27	2.37	1.50		2.31	2.26	2.33	2.36	1.51	1.52	1.52	1.51
PEO2				2.37	2.26							2.28	2.28	2.26
PEO3	2.31	2.34	2.27		2.26	2.27								

2.31 2.34 2.27 2.37 2.01 2.27 2.31 2.26 2.33 2.36 1.51 1.90 1.90 1.88
 76.91 77.92 75.70 78.97 66.86 75.66 76.94 75.19 77.68 78.66 50.41 63.28 63.41 62.77

% PEO Attainment			
	Direct	Indirect	Total
PEO1	66.93	74.79	69.29
PEO2	76.30	75.24	75.99
PEO3	76.28	73.25	75.37



Feedback Response (Alumni)

Category	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
Low	3	1	4	2	6	3	2	3	1	2	2	2	3	2
Moderate	15	10	14	9	14	8	13	5	9	6	4	2	6	11
Adequate	20	35	21	29	23	35	32	36	33	29	27	31	31	34
Substantial	34	27	36	32	31	27	25	28	27	33	33	36	31	23
Highly Substantial	15	14	12	15	13	14	15	15	17	17	21	16	16	17
% PO Attainment Indirect	69.89	69.89	68.74	71.26	67.13	69.43	68.74	70.80	71.49	73.10	75.40	74.25	71.72	69.66
	2.10	2.10	2.06	2.14	2.01	2.08	2.06	2.12	2.14	2.19	2.26	2.23	2.15	2.09

Submitted answers: 39								
Questions: 14								
Label	Question	Responses						
PO 1	PO1. Graduate will	Low (Slight)	Moderate(Medium)	Adequate	Substantial(High)	Highly Substantial		
		0	12	10	8	9		
		0	0.3076923077	0.2564102564	0.2051282051	0.2307692308	2.01538461	
PO 2	PO2. Graduate will	Below Average	Average	Good	Very Good	Excellent		
		0	6	16	11	6		
		0	0.1538461538	0.4102564103	0.2820512821	0.1538461538	2.06153846	
PO 3	PO3. Graduate will	Below Average	Average	Good	Very Good	Excellent		
		0	6	20	6	7		
		0	0.1538461538	0.5128205128	0.1538461538	0.1794871795	2.01538461	
PO 4	PO4. Graduate will	Below Average	Average	Good	Very Good	Excellent		
		0	7	20	4	8		
		0	0.1794871795	0.5128205128	0.1025641026	0.2051282051	2	
PO 5	PO5. Graduate will	Below Average	Average	Good	Very Good	Excellent		
		0	7	17	7	8		
		0	0.1794871795	0.4358974359	0.1794871795	0.2051282051	2.04615384	
PO 6	PO6. Graduate will	Below Average	Average	Good	Very Good	Excellent		
		0	4	15	12	8		
		0	0.1025641026	0.3846153846	0.3076923077	0.2051282051	2.16923076	
PO 7	PO7. Graduate will	Below Average	Average	Good	Very Good	Excellent		
		0	6	15	9	9		
		0	0.1538461538	0.3846153846	0.2307692308	0.2307692308	2.12307692	
PO 8	PO8. Graduate will	Below Average	Average	Good	Very Good	Excellent		
		0	5	16	8	10		
		0	0.1282051282	0.4102564103	0.2051282051	0.2564102564	2.15384615	
PO 9	PO9. Graduate will	Below Average	Average	Good	Very Good	Excellent		
		0	5	15	11	8		
		0	0.1282051282	0.3846153846	0.2820512821	0.2051282051	2.13846153	
PO 10	PO10. Graduate will	Below Average	Average	Good	Very Good	Excellent		

		0	5	20	7	7		
		0	0.1282051282	0.5128205128	0.1794871795	0.1794871795		2.04615384
PO 11	PO11. Graduate will	Below Average	Average	Good	Very Good	Excellent		
		0	6	19	7	7		
		0	0.1538461538	0.4871794872	0.1794871795	0.1794871795		2.03076923
PO 12	PO12. Graduate will	Below Average	Average	Good	Very Good	Excellent		
		0	5	20	6	8		
		0	0.1282051282	0.5128205128	0.1538461538	0.2051282051		2.06153846
PSO 1	PSO1. Graduate will	Below Average	Average	Good	Very Good	Excellent		
		1	4	18	8	8		
		0.02564102564	0.1025641026	0.4615384615	0.2051282051	0.2051282051		2.07692307
PSO2	PSO2. Graduate will	Below Average	Average	Good	Very Good	Excellent		
		0	20	5	9	5		
		0	0.5128205128	0.1282051282	0.2307692308	0.1282051282		1.78461538