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2.6.2 – Attainment of Programme Outcomes and Course Outcomes are Evaluated by the Institute

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Principal

Indore Institute of Science and Technology, Indore

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INTRODUCTION

Programme Outcomes POs

POs are statements about the knowledge and skills the graduate/postgraduate of an institution should have. POs deal with the general aspect of Graduation/Post Graduation for a particular programme, and the competencies and expertise a graduate/postgraduate will possess after completion of the program. These are broad and cover a wider area than of COs. Programme Specific Outcomes

Programme Specific Outcomes (PSOs)

PSOs are specifically defined outcomes of the programme which the graduates have to acquire by the end of the programme.

Course Outcome

They are the resultant knowledge skills the student acquires at the end of a course. It defines the cognitive processes a course provides. It is the statement which indicates, that a student can do after the successful completion of a course. Every Course leads to some Course Outcomes. The CO statements are defined by considering the course content covered in each module of a course. For every course, teacher may prepare six or less course outcomes. The keywords used to define COs are based on Bloom's Taxonomy

Method of Attainment of POs. PSOs. and Cos

The attainment of COs is based on continuous internal assessment and semester examinations. Attainment of CO in the course is set at 30 % from continuous internal assessment and 70% from end-semester examinations. Program Outcomes and Program-Specific Outcomes Assessment Process COs are mapped to POs in matrix form. Correlation levels I2. and 3 are defined as low. moderate. and high, respectively blank is used if there is no correlation. The largest level and level of attainment tor any subject will be based on the previous year's attainment and finalized by the concerned subject lately Two methods are adopted for attainment: Direct methods represent the student's knowledge and skills based on their performance in the continuous assessment test, semester examinations, assignments, quizzes. group discussions. And lab practical to assess practical knowledge, Indirect methods include surveys from stakeholders to reflect on students learning in IST, all faculty members from all programs use all direct and indirect assessment tools throughout the semester. All faculty members compute the attainment of course outcomes for their respective courses using direct assessment tools with a weightage to 80 and various survey s with weightage of 20. The HoD of each program collects this information from the subject faculty and computes the attainment of POs.



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Department of Computer Science and Engineering: Course Outcomes Description

Sem	S. No.	Univ. Subject Code	Subject Name	СО	CO Description
				1.1.1.1	Differentiate hard and soft water; solve the related numerical problems on water purification and its significance in industry and daily life.
				1.1.1.2	Select the lubricant for various purposes based on the type of Machines.
		BT-101	Engineering	1.1.1.3	Equipped with basic knowledge of polymer, methods of polymerization and various industrial applications of polymers
	1	D1-101	Chemistry	1.1.1.4	Draw the Phase diagrams of one & amp; two component systems and causes, consequences and methods to minimize corrosion to improve industrial designs.
				1.1.1.5	Identify the structure of unknown/new compounds with the help of spectroscopy and understand periodic properties such as ionization potential, oxidation states and electro negativity
				1.1.2.1	To introduce the fallouts of Rolle's Theorem that is fundamental to application of analysis to Engineering problems.
		DT 100	Mathematics-I	1.1.2.2	To introduce the idea of applying differential and integral calculus to notions of curvature and to improper integrals. Apart from some applications it gives a basic introduction on Beta and Gamma function
	2	BT-102		1.1.2.3	To develop the tool of power series and Fourier series for learning
Ι				1.1.2.4	To familiarize the student with functions of several variables that is
				1.1.2.5	To develop the essential tool of matrices and linear algebra in a
			English for Communication	1.1.3.1	Effective use of verbal and non-verbal communication for enhanced
	3	BT-103		1132	Write the different kinds of letters reports and technical writing
		D1 105		1.1.3.3	Apply basic rules of grammar in both written as well as oral communication
	-		_	1.1.4.1	To introduce the concept of Basics of DC electrical Network including network theorems.
			Basic Electrical	1.1.4.2	To introduce the concept of Basics of AC electrical Network(single phase & 3 phase).
	4	BT-104	& Electronics	1.1.4.3	To study of law of Electromagnetism, introduction of transformer,
			2	1.1.4.4	To study of various electrical Machines.
	_			1.1.4.5	To study Basic Concept Digital Electronics.
				1.1.5.1	Draw various types of scales, and curves.
				1.1.5.2	Draw orthographic projections of points & lines
		D. 10.	Engineering	1.1.5.3	Draw orthographic projections of Planes & Solids
	5	BT-105	Graphics	1.1.5.4	Draw sections and development of solids including cylinders, cones, prisms and pyramids.
				1.1.5.5	Draw isometric views of Planes and Solids, Drawing using
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-			(Institute
				1.1.6.1	Use hand and power tools for different manufacturing processes
				1.1.6.2	Operate machine tools while preparing any component
	6	BT-106	Manufacturing	1.1.6.3	Select the appropriate tools required for specific operation.
	0	D1-100	Practices	1.1.6.4	Comprehend the safety measures required to be taken while using the tools.
				1.1.6.5	Prepare Foundry, Fitting, Carpentry, Welding and smithy Job.
				1.1.7.1	Demonstrate the application of knowledge and skill sets acquired from the course and workplace in the assigned job functions.
		2	Internship-I (60	1.1.7.2	Solve real life challenges in the workplace by analysing work environment and conditions, and selecting appropriate skill sets acquired from the course.
	7	BT-107	Hrs Duration) at the Institute	1.1.7.3	Exhibit critical thinking and problem solving skills by analysing the challenges.
,		level	1.1.7.4	Demonstrate appreciation and respect for diverse groups of professionals by engaging harmoniously with different company stakeholders.	
				1.1.7.5	Exhibit professional ethics by displaying positive disposition during internship.
				1.2.1.1	The Coursework is designed to provide students the opportunity to learn key concepts of Wave nature of particles and the Schrodinger equation.
	0	BT-201	Engineering Physics	1.2.1.2	Student will able to understand the knowledge of Wave optics i.e. interference and diffraction.
	,	D 1-201		1.2.1.3	To introduce the idea of solids like semiconductors etc.
				1.2.1.4	To develop the understanding of Lasers, fiber optics and their applications in field of engineering sciences.
				1.2.1.5	To provide you to basic understanding of Electrostatics in vacuum,
		BT-202	Mathematics-II	1.2.2.1	To introduce effective mathematical tools for the solutions of ordinary and partial differential equations that model physical processes.
	10			1.2.2.2	To introduce the tools of differentiation and integration of functions of complex variable those are used in various techniques dealing engineering problems.
II				1.2.2.3	To acquaint the student with mathematical tools available in vector calculus needed various field of science and engineering.
				1.2.3.1	Understand the properties of material, stress strain. Properties of alloys and cast iron.
				1.2.3.2	Understand the concept measurement and machine tools their operations and their applications.
	11	BT-203	Basic Mechanical	1.2.3.3	Understand the concept of fluid flow, properties of fluid, Bernoulli's equation, Pascal's law,
			Engineering	1.2.3.4	To Understand the concept of heat and temperature, law of thermodynamics, boilers and their mountings and accessories, basic Refrigeration cycles and its applications.
				1.2.3.5	To Understand the working of different cycles and 4 strokes, 2 stroke engines and their applications.
			Basic Civil	1.2.4.1	Students will acquire the basic knowledge in different fields of civil engineering and materials used in construction.
	12	BT-204	Engineering & Mechanics	1.2.4.2	Gain the ability to use modern survey equipment to measure angles and distances.
				1.2.4.3	Students will understand the basic of contour lines and map
-		disco de la constante de la consta			

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							Institute
						1.2.4.4	Students will have the ability to identify, formulate and solve
	- 0					_	engineering problems related to Engineering Mechanics: Statics
			- 1			1.2.4.5	moment
	1	340				1.2.5.1	Able to understand the basic applications of computers in various fields, describe operating system, its role and functionalities and to apply concepts of MS word, MS power point, MS Excel efficiently.
						1.2.5.2	Discuss and apply simple algorithms for arithmetic and logical
	13	BT-	205	Basic		1.2.4.3	Translate the algorithms to programs applyingobject-oriented concepts in C++ programming language.
	15	DI	200	Engineeri	ıg	1.2.4.4	Understand basics of computer networks, OSI layers and protocols, E commerce applications, impact of securitythreats and attacks on networking systems and also security measures
						1.2.4.5	Understand the different method for representing and processing data and to get awareness about the impact of cloud computing, its various type of services.
- 1						1.2.6.1	learners to develop good listening skills.
						1.2.6.2	Encourages learner to talk freely and lose their shyness when talking in front of the people
	14	BT-	206	Language I	Jab rs	1.2.6.3	To develop the overall personality of the students by the practical activities
				w Semina		1.2.6.4	Helps in confidence building, motivation to be more presentable and help in removing the stage fright
						1.2.6.5	, Develops speaking, writing, reading, listening and presentation skills.
						1.1.7.1	
- 8				Internship-I	(60	1.1.7.2	2
	15	BT-	107	Hrs Durati	on)	1.1.7.3	5
_				level	ute	1.1.7.4	
				iever		1.1.7.5	5
		ALC: NO					SEMESTER III
S.	Su	bject	Sut	oject Name	С	5	CO Description
		Joue			2.3.	1.1 ene	t the knowledge of energy carriers, energy technologies, renewable ergy resources, energy challenges and energy system integration and vironment sustainability.
			Б	norm l	2.3.	1.2 Lea	arn about the different types of ecosystems present in environment,
1	ES	5-301	Env	vironmental	2.3.	1.3 Un div	derstand the value of bio-diversity to human societies, threats to bio- ersity. In-situ and Ex-situ conservation of bio-diversity.
				Sucoring	2.3.	1.4 Act	quire knowledge of different types of environmental pollution, its effects life and its remedies.
		. 1			2.3.	1.5 Aw	are about the social issue related to the environment, environment ics, protection and conservation acts for the environment.
			1	Discrete	2.3.	2.1 alg for	dents will be able to understand the notion of mathematical thinking and orithmic thinking and be able to apply them in problem solving such as mula specifications, verifications and basic concepts of set theory.
2	CS	\$-302	5	Structure	2.3.	2.2 Un	derstand the basic principle of boolean algebra, logic and set theory.
					2.3.	2.3 Be ver	able to construct simple mathematical proof and possess the ability to
_					_		



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			2.3.2.4	Acquire ability to describe computing problems with the help of graph theory and finite state machines, also express its utility in solving and modeling real time problems.
			2.3.2.5	Apply basic counting techniques to solve combinatorial problem.
			2.3.3.1	To understand the concept of linear, non-linear data structures, the operations performed on them and the applications of various data structures.
2	00.202	Data Staratura	2.3.3.2	Understand the arrays, searching and sorting algorithms.
3	CS-303	Data Structure	2.3.3.3	Implement stacks, queues and its applications.
			2.3.3.4	Implement linked list and its variations.
			2.3.3.5	Solve problem involving graphs, trees and heaps.
-			2.3.4.1	Understand the concept of number systems & binary arithmetic.
			2.3.4.2	To study the boolean algebra and minimization of switching function.
	00.204	Distal Gratana	2.3.4.3	Understand logic gates, universal gate, adders & subtractors.
4	CS-304	Digital Systems	2.3.4.4	Demonstrate linear wave shaping circuits, logic families, multiplexers and memory.
			2.3.4.5	Understand basic digital communication system.
			2.3.5.1	Describe the procedural and object oriented paradigm with concepts of streams, classes, functions, data and objects.
			2.3.5.2	Understand dynamic memory management techniques using pointers, constructors, destructors etc.
5	CS-305	Object Oriented Programming & Methodology	2.3.5.3	Describe the concept of function overloading, operator overloading, virtual functions and polymorphism.
			2.3.5.4	Understand how to apply the major object-oriented concepts to implement object oriented programs in C++, encapsulation, inheritance and polymorphism.
			2.3.5.5	Classify inheritance with the understanding of early and late binding, usage of exception handling, generic programming.
			2.3.6.1	Understand the concepts of Java programming.
			2.3.6.2	Understand fundamentals of programming such as variables, conditional and iterative execution, methods, etc.
6	CS-306	Computer Workshop	2.3.6.3	Understand fundamentals of object-oriented programming in Java and be familiar of the important concepts like class, inheritance and multithreading, AWT and JDBC.
	1		2.3.6.4	Use the Java SDK environment to create, debug and run Java programs.
			2.3.6.5	Develop Java applet.
			1.1.7.1	To display the utility of information and talent units obtained from the path and place of business withinside the assigned task function.
		Evaluation of	1.1.7.2	Solve actual existence demanding situations withinside the path via way of means of analysing the area and choosing suitable ability units obtained from the path.
7	BT-107	Internship-I completed at I	1.1.7.3	Exhibit important questioning and hassle fixing talents via way of means of analysing underlying issues to challenges.
		year level	1.1.7.4	Demonstrate the capacity to harness assets with the aid of using analysing demanding situations and thinking about opportunities.
			1.1.7.5	Articulate profession alternatives via way of means of thinking about possibilities in company, sector, industry, expert and academic advancement.





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			2.3.8.1	Demonstrate the application of knowledge and skill sets acquired from the
				course and workplace in the assigned job functions.
		00 hrs Internetin	2382	Solve real life challenges in the workplace by analysing work environment
		based on using	2.5.6.2	course
8	BT-307	various		Exhibit critical thinking and problem solving skills by analysing the
	51 501	softwares –	2.3.8.3	challenges.
		Internship -II	2204	Demonstrate appreciation and respect for diverse groups of professionals
		-	2.3.8.4	by engaging harmoniously with different company stakeholders.
			2385	Exhibit professional ethics by displaying positive disposition during
-			2.5.0.5	internship.
	THE SHORE			Semester - IV
			2.4.1.1	Understand mathematical tools for the numerical solutions algebraic and transcendental equations.
				Describe mathematical knowledge to understand laplace transformation.
	9 BT-401		2.4.1.2	inverse laplace transformation and fourier transform which are used in
				various branches of engineering.
9		Mathematics- III	2413	Work with mathematical tools available in statistics needed in various field
		Wathematics- III	2.4.1.5	of science and engineering.
				Fulfill the needs of engineers to understand applications of numerical
			2.4.1.4	analysis, transform calculus and statistical techniques in order to acquire
				mathematical knowledge.
			2.4.1.5	Solve wide range of practical problems appearing in different sections of
			2421	Implement sorting and searching algorithms
		Analysis Design of Algorithm	2.4.2.1	Emplement with techniques for altering and searching and s
			2.4.2.2	efforts.
10	CS-402		2.4.2.3	Make use of dynamic program.
			2424	Solve 8 queens problem and others of the kind for application in real world
			2.7.2.7	scenario.
			2.4.2.5	Distinguish between NP-hard and NP-complete problems and develop their
				Solutions.
			2.4.3.1	process models used in software development
			2432	Understand various measures of software and generate project schedule
			2.7.3.2	Describe functional and nonfunctional requirements of software and
11	CS-403	Software	2.4.3.3	develop design modules of software.
		Engineering		Investigate the reasons for bugs and apply the software testing techniques
			2.4.3.4	in commercial environment.
			2125	Understand various activities to be performed for improving software
			2.4.3.3	quality and software maintenance.
			2.4.4.1	Define the structure, function and characteristics of computer systems.
8		Computer Ore	2.4.4.2	Design of the various functional units and components of computers.
12	CS-404	& Architecture	2.4.4.3	Identify the elements of input output in computers.
			2.4.4.4	Explain the function of each element of a memory hierarchy.
			2.4.4.5	Understand the function of multi processing and techniques to achieve it.
12	CS-405	Operating	2451	Gain knowledge of history of operating systems and understand design
13	05-403	Systems	2.4.3.1	issues associated with operating systems.





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Institute Understand issues related to file system interfaces and implementation, disk 2.4.5.2 management. Identify the process management policies and analyze and compare 2.4.5.3 scheduling of processes by CPU along with memory management. Understand concepts of memory management (including virtual memory), 2.4.5.4 I/O and concurrency control. 2.4.5.5 Understand network distributed and multiprocessing operating system. Use an integrated development environment to write, compile, run, and test 2.4.6.1 simple object-oriented Java programs. Read and make elementary modifications to Java programs that solve real-2.4.6.2 world problems. Programming CS-406 14 Practices 2.4.6.3 Validate input in a Java program. 2.4.6.4 Identify and fix defects and common security issues in code. 2.4.6.5 Document a Java program using Javadoc. 2.4.7.1 Exposure to organizational skills and professional practices. Efficiently completing tasks, fostering good relationship with seniors and 90 hrs Internship 2.4.7.2 subordinates based on using BT-407 15 Improved communication & interpersonal skills. 2.4.7.3 various software - Internship - II 2.4.7.4 Exposure to latest technology applications to the specific discipline. 2.4.7.5 Identification of relevant problems in the industry and innovative solutions. Semester - V Explain the basic concepts of switching and finite automata theory and 3.5.1.1 languages. Relate practical problems to languages, automata the computability and 3.5.1.2 complexity. Theory of Construct abstract models of computing and check their power to recognise 17 CS-501 3.5.1.3 Computation the languages. 3.5.1.4 Analyse the grammar, its types, simplification and normal form. Interpret rigorously formal mathematical methods to prove properties of 3.5.1.5 languages, grammars and automata. To understand the different issues involved in the design and 3.5.2.1 implementation of a database system. To understand and use data manipulation language to query, update, and 3.5.2.2 Database manage a database. CS-502 Management 18 3.5.2.3 To develop an understanding of essential Normalization concepts Systems To develop an understanding of essential DBMS concepts such as: 3.5.2.4 Transaction, concurrency 3.5.2.5 To become aware of current trends in DBMS 3.5.3.1 To understand the supervised learning and unsupervised learning. 3.5.3.2 Describe the various levels of classification models. Pattern CS-503 3.5.3.3 19 Describe the various levels of clustering and it's algorithms. Recognition 3.5.3.4 Understand this feature extraction and its models. 3.5.3.5 Construct various types of pattern recognition models. 3.5.4.1 Describe the concepts of WWW including browser and HTTP protocol. Internet and List the various HTML tags and use them to develop the user friendly web CS-504 20 Web 3.5.4.2 Technology pagesacience.



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Institute Define the CSS with its types and use them to provide the styles to the web 3.5.4.3 pages at various levels. Developed the modern web pages using the HTML and CSS features with 3.5.4.4 different layout as per the need of applications. Use of JavaScript to develop the dynamic web pages and PHP. 3.5.4.5 Understand Functions of operating system and its types and Unix system 3.5.5.1 architecture. Understand and make use of the basic commands of linux operating system 3.5.5.2 and Work confidently in Linux environment. CS-505 Lab (Linux) 21 Understand file systems and illustrate various file operations. 3.5.5.3 Create shell scripts to automate different tasks as Linux. 3.5.5.4 Understand installation of web servers and proxy servers. 3.5.5.5 Understand the basic concepts scripting and the contributions of scripting 3.5.6.1 language. Examine the core data structures like lists, dictionaries, tuples and sets in 3.5.6.2 Python to store, process and sort the data. Identify the external modules and import specific methods form them. 22 CS-506 Lab (Python) 3.5.6.3 3.5.6.4 Demonstrate proficiency in handling Strings and file systems. Explore python especially the object-oriented concepts, and the built in 3.5.6.5 objects of Python. To display the utility of information and talent units obtained from the path 3.5.7.1 and place of business withinside the assigned task functions. Solve actual existence demanding situations withinside the path via way of 3.5.7.2 means of analysing the area and choosing suitable ability units obtained from the path. Exhibit important questioning and hassle fixing talents via way of means of Evaluation of 3.5.7.3 CS-507 23 Internship-II analysing underlying issue/s to challenges. Demonstrate the capacity to harness assets with the aid of using analysing 3.5.7.4 demanding situations and thinking about opportunities. Articulate profession alternatives via way of means of thinking about possibilities in company, sector, industry, expert and academic 3.5.7.5 advancement. A fully engaged student shall be able to get exposure to undertake a short 3.5.8.1 research project. To enable the students to develop comprehensive solution of identified 3.5.8.2 problems. CS-508 Minor Project-I 24 To inculcate the ability to synthesize the results of the detailed analytical studies conducted, lay down validity and design criteria, interpret the result 3.5.8.3 for application to the problem, develop the concept and detailed design solution. Semester - VI Apply knowledge of computer and mathematics to machine learning 3.6.1.1 problems, models and algorithms. Analyse the problem and identify the computing requirements appropriate 3.6.1.2 for its solutions. Machine 3.6.1.3 Design, implement, and evaluate an algorithm to meet desired needs. CS-601 25 Learning Apply mathematical foundations, algorithmic principles, and computer science theory to the modelling and design of computer-based systems in a 3.6.1.4 way that demonstrates comprehension of the trade-offs involved in design





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				Institute
				Analyze the co-occurrence of data to find interesting frequent patterns and
			3.6.1.5	Preprocess the data before applying to any real-world problem and can
	×			evaluate its performance.
			3.6.2.1	components and from the viewpoint of services
				Display good understanding of the flow of a protocol in general and a
			3.6.2.2	network protocol in particular.
26	00.000	Computer	3.6.2.3	Model a problem or situation in terms of layering consent and map it to the TCP/IP stack.
20	CS-602	Networks	3.6.2.4	Select the most suitable application layer protocol such as (HTTP, STTP, SMTP, DNS bit torrent) and as per the requirements of the network application and work with available tools to demonstrate the working of these protocols.
			3.6.2.5	Design a reliable data transfer protocol and incrementally and develop solutions for the requirements of transport layer.
			3.6.3.1	Demonstrate an understanding of the compilation phases.
		Compiler Design	3.6.3.2	Specify and analyze the lexical, syntactic and semantic structures of advanced language features.
27	27 CS-603		3.6.3.3	Write a scanner, parser, and semantic analyser without the aid of automatic generators.
			3.6.3.4	Describe techniques for intermediate code and machine code optimization.
			3.6.3.5	Design the structures and support required for compiling advanced language features
		Project Management	3.6.4.1	Understanding the evolution and improvement of software economics according to the basic parameters and transition to the modern software management.
			3.6.4.2	Learning objectives, activities and evaluation criteria of the various phases of the life cycle of software management process.
28	CS-604		3.6.4.3	Gaining knowledge about the various artefacts, workflows and check points of the software management process and exploring the design concepts using model-based architecture from technical and management perspective.
			3.6.4.4	Develop an understanding of project planning, organisation, responsibilities, automation and control of the processes to achieve the desirable results.
			3.6.4.5	Develop a project scope while considering factors such as customer requirements and internal/external goals.
			3.6.5.1	Understand the basic of data analytics using concepts of statistics and probability.
		Data Analatian	3.6.5.2	Understand the needs of data processing techniques.
29	CS-605	Lab	3.6.5.3	Implement the data analytics techniques using R, Matlab and python.
		-	3.6.5.4	Apply the data analytics techniques in real life applications.
			3.6.5.5	Articulate the limitations and abuses of formal inference and modeling.
			3.6.6.1	Demonstrate the basics of software as a product.
20	00 (0)	Skill	3.6.6.2	Understand the current requirements of industries.
30	05-606	Lab	3.6.6.3	Implement the software as a product using different design patterns,
		19 H	3.6.6.4	Apply the software development techniques in real life applications.
31	CS-607	Internship-III	3.6.7.1	To display the utility of information and talent units obtained from the path and place of business withinside the assigned task functions.





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				Institute
				Solve actual existence demanding situations withinside the path via way of
			3.6.7.2	means of analysing the area and choosing suitable ability units obtained
		3		Exhibit important questioning and hassle fixing talents via way of means of
1	{		3.6.7.3	analysing underlying issue/s to challenges.
- 1		1	2671	Demonstrate the capacity to harness assets with the aid of using analysing
			3.0.7.4	demanding situations and thinking about opportunities.
				Articulate profession alternatives via way of means of thinking about
			3.6.7.5	possibilities in company, sector, industry, expert and academic
\rightarrow				A fully engaged student shall be able to get exposure to undertake a short
			3.6.8.1	research project.
			2602	To enable the students to develop comprehensive solution of identified
22	00 (00	Minor Droigot II	3.6.8.2	problems.
32	CS-008	Minor Project II		To inculcate the ability to synthesize the results of the detailed analytical
			3.6.8.3	studies conducted, lay down validity and design criteria, interpret the result
_	- 1			solution
				Semester - VII
1				Describe the fundamentals of software architecture, qualities and
		<	4.7.1.1	terminologies.
			4712	Understand the fundamental principles and guidelines for software
		Caftavana	4.7.1.2	architecture design, architectural styles, patterns, and frameworks.
33	CS-701	Architectures	4.7.1.3	Use implementation techniques of Software architecture for effective
		/ If entire et al es		software development.
			4.7.1.4	application development.
			4715	Describe software architecture documentation.
			4721	Decign and greate traditional networks
			4.7.2.1	The devetered the different issues in MAC and routing issues in multi hon
		Dig Data	4.7.2.2	wireless and ad-hoc networks and existing solutions for the same.
24	00 703			Evaluate the transport layer issues in wireless networks due to errors and
54	CS-702	Big Data	4.7.2.3	mobility of nodes and understand existing solutions for the same.
			4.7.2.4	Explain the architecture of GSM.
			4725	Discuss the services, emerging issues and future trends in m-commerce.
			4.7.2.3	Describe the fundamental principles and practices associated with each of
			4.7.3.1	the agile development methods.
			1.7.2.0	Compare agile software development model with traditional development
		Director	4.7.3.2	models and identify the benefits and pitfalls.
25	CS-703	management	4733	Use techniques and skills to establish and mentor Agile Teams for effective
55	05-705	System	4.7.5.5	software development.
			4.7.3.4	Apply core values and principles of Agile Methods in software
				Ludge and craft appropriate adaptations to existing practices or processes
			4.7.3.5	depending upon analysis of typical problems.
		D	1	Demonstrate wireless network with number of nodes and different
		Departmental	4.7.4.1	parameters using simulator.
36		LICOUVE LAU US.		The second of internet internet and internet include
	CS-704	702	4.7.4.2	Understand the basic concept of inter-networking devices.



Indore Institute of Science and Technology, Indore

Principal



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			-	Institute
			4.7.4.4	Execute the basic network command and Network configuration commands.
			4.7.4.5	Configure network using routing protocol.
			4.7.5.1	Understand agile development processes and the principles behind the Agile manifesto.
		Open Elective	4.7.5.2	Develop a product vision, customer journey, and roadmap.
37	CS-705	Lab CS-703	4.7.5.3	Build out a backlog and user stories.
51	05-705	Management System]	4.7.5.4	Leverage Scrum practices in small teams as you build out a working prototype for your class project.
		.,]	4.7.5.5	Explore advanced and emerging topics in the domain of software development.
			4.7.6.1	Demonstrate a sound technical knowledge of their selected project topic.
			4.7.6.2	Undertake problem identification, formulation and solution.
38	CS-706	Major Project-I	4.7.6.3	Design engineering solutions to complex problems utilising a systems approach.
			4.7.6.4	Communicate with engineers and the community at large in written and oral forms.
			4.7.6.5	Demonstrate the knowledge, skills and attitudes of a professional engineer.
_			4.6.7.1	Demonstrate awareness of the ethics involved in doing an internship.
		Evaluation of Internship -III	4.6.7.2	Describe, analyze, and synthesize their learning experience in the internship in the form of an internship paper.
39	CS-607		4.6.7.3	Articulate new learning from the internship experience in the form of an oral presentation.
			4.6.7.4	Show understanding and assess the challenges carrying out an internship in a cross cultural setting with limited language skills and in a short timeframe;
		3	4.6.7.5	Gain meaningful and practical experience in their chosen field,
				Semester - VIII
			4.8.1.1	Understand Internet of Things and its hardware and software components.
			4.8.1.2	Interface I/O devices, sensors & communication modules.
40	CS-801	Internet of Things	4.8,1.3	Analyze data from various sources in real-time and take necessary actions in an intelligent fashion.
			4.8.1.4	Remotely monitor data and control devices.
			4.8.1.5	Develop real life IoT based projects
			4.8.2.1	Apply object oriented principles in software design process.
		Object Oriented	4.8.2.2	Understand the phases involved in SDLC.
41	CS-802	Software	4.8.2.3	Describe the use case and activity diagrams.
		Engineering	4.8.2.4	Draw class, object and interaction diagrams.
		· · · · · ·	4.8.2.5	Understand testing strategies and test cases for OO software process.
			4.8.3.1	Students will be able to get knowledge to real-life organisational issues faced by those establishing and managing innovation-driven organisations.
42	CS-803	Managing Innovation and	4.8.3.2	Students will be able to know about the key concepts underpinning entrepreneurship and its application in the recognition and exploitation of product service process opportunities.
		P	4.8.3.3	Key concepts underpinning innovation and the issues associated with developing and sustaining innovation within organisations





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				Institute						
			4.8.3.4	How to design creative strategies for pursuing, exploiting and further developing new opportunities.						
			4.8.3.5	Issues associated with securing and managing financial resources in new and established organisations.						
			4.8.4.1	Configure various virtualization tools such as virtual box, VMware workstation.						
			4.8.4.2	Design and deploy a web application in a PaaS environment.						
43	CS-804	Cloud	4.8.4.3	Learn how to simulate a cloud environment to implement new schedulers.						
		computing	4.8.4.4	Install and use a generic cloud environment that can be used as a private cloud.						
			4.8.4.5	Manipulate large data sets in a parallel environment.						
	8	Major Project-II	4.8.5.1	earn about different software development process models and softwar regineering principles and develop an ability to apply them to softwar lesign of real life problems.						
			4.8.5.2	Plan, analyze, design and implement a software project using programming languages like Java, ASP, PHP etc.						
44	CS-805		4.8.5.3	Gain confidence at having conceptualized, designed and implemented a working major project with their team.						
			4.8.5.4	Understand the fundamental principles of Software Project management & will also have a good knowledge of responsibilities of project manager and how to handle these.						
			4.8.5.5	Be familiar with the different methods and techniques used for project management.						

CO PO and PSO Mapping: Department of Computer Science and Engineering

S. No	Subject Code	Subject Name	со	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 I	PO1 2	PSO 1	PSO 2	PSO 3
	Semester - III																	
Γ			2.3.1.1	3	2	3	2				3	2				3	2	1
			2.3.1.2	3	1		3	3								3	1	l
		Energy &	2.3.1.3	3		2	1		3	3						3		1
1	ES-301	Environmental Engineering	2.3.1.4	2	1	3		3	2							3	2	1
			2.3.1.5		3	2	3	3									2	1
			CO Avg	2.75	1.75	2,5	2.25	3	2.5	3	3	2				3	1,75	1
			2.3.2.1	2	2	3	2		1						1	2	3	1
			2.3.2.2	1			3									1	3	
2	CS-302	Discrete	2.3.2.3	2	1	3										2	3	
		Suuciure	2.3.2.4	1		-2m	mesone		3					2	1	1	2	3
			2.3.2.5		3	CIEI	-Sza	er.									3	

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						Inst	itute	e	A	2					0°	2		vi.
			CO Avg	1.5	2.5	2.6 7	2.3 3		2					2	1	1.5	2.8	2
			2.3.3.1	2	1	3			1						2	2	3	1
			2.3.3.2	2	1	2	3									2	3	
2	09.202	Data Structure	2.3.3.3	1	2	2										1	2	
3	CS-303		2.3.3.4	1	2	3			2							1	3	2
			2.3.3.5	1	2	3	3	1								1	3	
			CO Avg	1.4	1.6	2.6	3	1	1.5						2	1.4	2.8	1.5
			2.3.4.1	2	1											2	1	
			2.3.4.2	3	2		1									3	2	
4	05.204	D1.14.1.0	2.3.4.3	3	3											3	3	
4	CS-304	Digital Systems	2.3.4.4	3	1	2	2	1				2	1	3	1	3	3	2
			2.3.4.5	3	2											3	2	
			CO Avg	2.8	1,8	2	1.5		1			2	1	3	1	2.8	2.2	2
			2.3.5.1	3	2	1	2									3	2	
			2.3.5.2	3	2		2									3	2	
5	CS-305	Object Oriented Programming & Methodology	2.3.5.3	3	1		3							2		3	3	
5			2.3.5.4	3	2	2	3					2	1	3	2	3	3	2
			2.3.5.5	3	1		3	- 8				2		2	1	3	3	2
			CO Avg	3	1.6	1.5	2,6					2	1	2.33	1,5	3	2.6	2
			2.3.6.1	3	1											3	1	
			2.3.6.2	3	2		2									3	2	
6	CS-306	Computer Workshop	2.3.6.3	3	2	2	3				85	3		2	2	3	3	3
			2.3.6.4	3	1		2					1		3	1	3	3	1
			2.3.6.5	3		2	1					2		3	1	3	3	2
			CO Avg	3	1.5	2	2					2		2.67	1.33	3	2,4	2
			1.1.7.1	3	1			·				2		2		3		-
		Evaluation of	1.1.7.2	3	2		1	-				2		1		3	1	
7	BT-107	Internship-I	1.1.7.3	3			1									3	1	
		vear level	1.1.7.4	3	2		1			_		2		1		3	2	
			1.1.7.5	3	2					_		1	2	3	3	3	2	1
1100		1. 10/10/25/10/2010/26/2011/10/2511-00/2	CO Avg	3	1.75	_	1	College Las		IT-UTIVERS		1.75	2	1.75	3	3	1.5	1
			2411		2	3	mes	ler -			T	STATISTICS IN CONTRACTOR	0.000			-	3	
			2.7.1.1		- 1	2	2	5						2	2	2	3	1
			2.7.1.2	1	2	4	י ר	2			-	2		2	4	- 1	2	2
9	BT-401	Mathematics-	2.4.1.3	1	2	1	2	3	1			2	-	- 2		2	2	
			2.4.1.4	3	1	2	3		1						_	3	2	1
			2.4.1.5	1	2	3	2		2			1		3	1	1	5	2
			CO Avg	1.67	16	2.2	2.2	3	1,5			1.25		2 33	1.5	1.75	3	1,5
10	CS-402		2.4.2.1	1	2.00	2	1.1%					1		I 3∖		N	3	1

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						insu	lute				-							
			2.4.2.2	1	1	2	3									1	3	
			2.4.2.3	2	1	1	2			•		3		2		2	2	3
		Analysis Design	2.4.2.4	1	1	2	3					1		2	2	2	3	1
		of Algorithm	2.4.2.5	1	2	1	3					2	1	1	2	2	3	2
			CO Avg	1.2	1.4	1.6	2.4		1			1.75	1	2	2	1.6	2.8	1.75
			2.4.3.1	3	2											3	2	
			2.4.3.2	2	1	2	3				Ú					2	3	
111	CS 402	Software	2.4.3.3	3	2	1					1	2	1	3		3	3	2
11	C3-403	Engineering	2.4.3.4	3	1		2			1	1	3	2	3	1	3	3	3
			2.4.3.5	2		1	3						2	1	2	2	3	2
			CO Avg	2.6	1.5	1,33	2.67			1	1	2.5	1,67	2,33	1.5	2.6	2.8	2,33
			2.4.4.1	3	2											3	2	
			2.4.4.2	3	1	3										3	3	
10	09 404	Computer Org.	2.4.4.3	3	2		2									3	2	
14	CS-404	& Architecture	2.4.4.4	3	2		2					2				3	2	2
			2.4.4.5	3	2		3									3	3	
			CO Avg	3	1.8	3	2,33					2				3	2.4	2
			2.4.5.1	3	2	3		110								3	3	
		5 Operating Systems	2.4.5.2	3	2		3									3	3	
			2.4.5.3	3	3		2					3				3	3	3
13	CS-405		2.4.5.4	3	2											3	2	
			2.4.5.5	3	2		2							2	1	3	2	
			CO Avg	3	2.2	3	2.3 3					3		2	1	3	2.6	3
			2.4.6.1	3			3	2				2	1	3		3	3	2
			2.4.6.2	3		2	2							3	2	3	3	2
14	CS 406	Programming	2.4.6.3	3	1		1									3	1	
14	CS-400	Practices	2.4.6.4	3	2		3									3	3	
			2.4.6.5	3	3							2				3	3	2
			CO Avg	3	2	2	2.25	2				2	1	3	2	3	2.6	2
				10	Birlin I	, š	Seme	ster -	v							al the put		
			3.5.1.1	3	2					-						3	2	
			3.5.1.2	3			3	1				1				3	3	1
17	CS-501	Theory of	3.5.1.3	3	1		2			-					-	3	2	
¹ /	05-301	Computation	3.5.1.4	3	3		1				1		1	2		3	3	1
			3.5.1.5	3	2		3					2		3		3	3	2
			CO Avg	3	2		2.25	1			1	1,5	1	2.5		3	2.6	1,33
18	CS-502		3.5.2.1	3	1	3	2							3		3	3	





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						Inst	itute										-	
			3.5.2.2	3		3								2		3	3	
		Database	3.5.2.3	2	3	2				•		2	1	3	1	2	3	2
		Management	3.5.2.4	3			3	2				3	2		1	3	3	2
		Systems	3.5.2.5	3	2	3	3	2	ĺ			2	1	3	1	3	3	2
			CO Avg	2,8	2.5	2.67	3	2				2,33	1,33	2.67	1	2.75	3	2
			3.5.3.1	3	3											3	3	
			3.5.3.2	3			2									3	2	
10	00.500	Pattern	3.5.3.3	3		2	3					3	1	2		3	3	3
19	CS-503	Recognition	3.5.3.4	3		1	3					2		3		3	3	2
			3.5.3.5	3		2	2					2	2	3	2	3	3	2
			CO Avg	3	3	1.67	2,5					2.33	1.5	2.67	2	3	3	2.33
			3.5.4.1	3	2											3	2	
			3.5.4.2	3			2	1				2		3		3	3	2
20	00.504	Internet and	3.5.4.3	3	2											3	2	
20	CS-504	Technology	3.5.4.4	3		3	2							3		3	3	
			3.5.4.5	3	2	3	3							2	3	3	3	
			CO Avg	3	2	3	2.33	1				2		2.67	3	3	3	2
			3.5.5.1	3	1	3	2									3	3	
			3.5.5.2	3	2		2	2								3	2	
	00.00	1.1.41.	3.5.5.3	3	1		1									3	1	
21	CS-505	Lab (Linux)	3.5.5.4	3	1	2	3	2				2	1	3		3	3	2
			3.5.5.5	3	2		3	3 *							_	3	3	
			CO Avg	3	1.4	2.5	2.2	2,33				2	1	3		3	3	2
			3.5.6.1	3	2						1					3	2	
			3.5.6.2	3	1		2					1		1		3	2	1
000	09.506	L-h (D-thou)	3.5.6.3	3	2		2	1								3 *	2	
22	CS-506	Lab (Python)	3.5.6.4	3	2	1	1					2		2		3	2	2
			3.5.6.5	3		3	2	1								3	3	
			CO Avg	3	1.75	2	1.75	1				1.5		1.5		3	2	1.5
			3.5.7.1	3	1							2		2		3		
	l		3.5.7.2	3	2		1					2		1		3	1	
22	CS 507	Evaluation of	3.5.7.3	3			1									3	1	
23	CS-507	Internship-II	3.5.7.4	3	2		1					2	1	1		3	2	
			3.5.7.5	3	2							1	2	3	3	3	2	- 1
	5	8	CO Avg	3	1,75		1					1.75	2	1.75	3	3	1.5	1
			3.5.8.1	3	1	2	1	1	1			2	1	2	2	3	2	1
24	CS-508	Minor Project- I	3.5.8.2	3	2	2	3	2				1		3	2	3	1	1
			3.5.8.3	3	3	A	sche,	0.8	1			2	2	2	2	3	1	2

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						Insti	tute											
			CO Avg	3	2	2	2	2	1			2	2	2	2	3	I	1
				unut i	Real	Se	emest	er - V	/1	•								
			3.6.1.1	3	1	2	2							2		3	2	
			3.6.1.2	3	3		2									3	3	
		Machina	3.6.1.3	3		3	1					2		3	1	3	3	2
25	CS-601	Learning	3.6.1.4	3	2		3				1	3	1	2	1	3	3	3
			3.6.1.5	3	3		2					2		3	2	3	3	2
			CO Avg	3	2.25	2.5	2				1	2.33	1	2,5	1.33	3	2.8	2 33
			3.6.2.1	3	2									1		3	2	-
			3.6.2.2	3	3		1									3	3	
		Computer	3.6.2.3	3	2	3	2	2				1		3		3	3	1
26	CS-602	Networks	3.6.2.4	3	1	2	3	2				2	1	2		3	3	2
			3.6.2.5	3		3	2							3	2	3	3	
			CO Avg	3	2	2,67	2	2				1.5	1	2,25	2	3	2.8	1,5
			3.6.3.1	3	2		1							1		3	2	
			3.6.3.2	3	1		2					3				3	2	3
		Compilor	3.6.3.3	3		3	1	- 8				2		2		3	3	2
27	CS-603	Compiler Design	3.6.3.4	3	2		3							3		3	3	
			3.6.3.5	3	1		2					1	1	2		3	2	1
			CO Avg	3	1,5	3	1.8	<i>z</i> -				2	1	2		3	2.4	2
			3.6.4.1	3			1					2				3	1	2
			3.6.4.2	3	2		2	2			1	1		2		3	2	1
		Dusiant	3.6.4.3	3	2	3	2					2	1		1	3	3	2
28	CS-604	Management	3.6.4.4	3	1	2	2					1		2	1	3	2	1
			3.6.4.5	3	2	2	1							3		3	3	
			CO Avg	3	1.75	2.33	1,6	2			1	1.5	1	2.33	1	3	2.2	1,5
			3.6.5.1	3	3		1									3	3	
			3.6.5.2	3												3		
			3.6.5.3	3			2					2		3		3	3	2
29	CS-605	Data Analytics	3.6.5.4	3	2		1				1	1		2	1	3	2	1
		Lab	3.6.5.5	3	1							2	1	1		3	1	2
			CO Avg	3	2		1.33				1	1.67	1	2	1	3	2,25	1.67
1		S1-11	3.6.6.1	3	2											3	2	
30	CS-606	Development	3.6.6.2	3	Ja	5150	ienc	an				2				3	1	2
		Lab	3.6.6.3	3	15	2	3	20	A					3	2	3	3	

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-	4					In	stitu	te									e y		
			3.6.6.4	3	1		2								2	1	3	2	
			CO Avg	3	1.2	2 2	2.:	5 2	2				2		2.5	5 1.5	5 3	2	2
		(3.6.7.1	3	1			1		1	1	_	2	1	2	+	3	-	-
			3.6.7.2	3	2		1	T	1				2		1	-	3	1	-
			3.6.7.3	3		1	1	1						1	1	1	3	1	
31	CS-607	Internship-III	3.6.7.4	3	2		1	1			1		2	-	1	1	3	2	
			3.6.7.5	3	2						1		1	2	3	3	3	2	1
			CO Avg	3	1.75	5	1				T		1,75	2	1.75	3	3	1,5	1
			3.6.8.1	3	1	2	1	1					2	1	2	2	3	2	1
			3.6.8.2	3	2	2	3	2					1		3	2	3	1	1
32	CS-608	Minor Project I	3.6.8.3	3	3	2	3	3			+		2	2	2	2	3	1	2
ľ.			CO Avg	3	2	2	2	2	1		1		2	2	2	2	3	1	1
						S	emes	ter -	VII							and the second		and the second	
	-		4.7.1.1	3	2	3			T	T					1		3	3	
			4.7.1.2	3	1	2	2	2					1		2		3	2	1
22	00 701	Software	4.7.1.3	3	1	1	3	2		1					1		3	3	
33	CS-701	Architectures	4.7.1.4	3	2		2						2	1	2		3	2	2
			4.7.1.5	3	1								2		1		3	1	2
			CO Avg	3	1.4	2	2.33	2					1.67	I	1.67		3	2.2	1,67
			4.7.2.1	3	1	3											3	3	
		285	4.7.2.2	3	1		2			1			2	1			3	2	2
24	GO 702		4.7.2.3	3	1		3	1			T		1				3	3	1
34	CS-702	Big Data	4.7.2.4	3		1							2		2	I	3	2	2
			4.7.2.5	3	2										1	1	3	2	
			CO Avg	3	1.25	2	2.5	1					1.67	1	1.5	1	3	2,4	1.67
			4.7.3.1	3	2		1		1						1		3	2	
	-		4.7.3.2	3	1		2						2				3	2	2
25	CS 702	Disaster	4.7.3.3	3			2						2		1		3	2	2
55	CS-703	System	4.7.3.4	3	1		3			1			1	1	2	1	3	3	1
			4.7.3.5	3		1	2	1			1			1		1	3	2	1
			CO Avg	3	1.33	1	2				1	1	.67		1.33	1	3	2,2	1.5
		Departmental	4.7.4.1	3	1		2	1					2	1	2		3	2	2
6	CS-704	Elective Lab	4.7.4.2	3	2												3	2	
		CS-702	4.7.4.3	3	1		-								1	2	3	1	
			4.7.4.4	3		SC	ance.	an				1	2	-	1		3	2	2

2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the



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						mst	nun						(
			4.7.4.5	3	1		2					2		2		3	2	2
			CO Avg	3	1.25		2.33	1		,		2	1	1.67	2	3	2	2
			4.7.5.1	3	2							3				3	2	3
		Open Elective	4.7.5.2	3		3	1							2		3	3	
		Lab CS-703	4.7.5.3	3												3		
37	CS-705	[Disaster	4.7.5.4	3	1	1						2		3	1	3	3	2
		System]	4.7.5.5	3		2	11				1			2	2	3	2	1
			CO Avg	3	1,5	2	1				1	2.5		2,33	1.5	3	2,5	2
			4.7.6.1	3	2	2	3	1			2	3	2	3	1	3	2	1
			4.7.6.2	3	2	3	3	2	2		1	3	2	2	3	3	2	3
		1	4.7.6.3	3	2	1	2	2				3	1	2	2	3	1	2
38	CS-706	Major Project-I	4.7.6.4	3	1	2	3	2	1		2	2	2	1	2	3	2	2
			4.7.6.5	3	1	3	3	3	1		1	3	2	3	3	3	2	3
			CO Avg	3	1.6	2,2	2.8	2	1,33		1.5	2,8	1.8	2.2	2.2	3	1,8	2.2
			4.6.7.1			1												
		-	4.6.7.2									-						
	9 CS-607 Evaluation of Internship -III	4.6.7.3				-											· · · · · · · · · · · ·	
39		Evaluation of Internship -III	4.6.7.4			-												
			4.6.7.5										1					
			CO Avg								a.							
		and the second	1	Tus illi	1	Se	mest	er - \	/111	011- 5311)	ation for		a na statione					
			4.8.1.1	3	1	2	2	1								3	2	
			4.8.1.2	3	1		2					2		1		3	2	2
		Internet of	4.8.1.3	3	3									2		3	3	
40	CS-801	Things	4.8.1.4	3			2							3	1	3	3	2
			4.8.1.5	3		3	2	2			1	1	2	2	3	3	3	2
			CO Avg	3	1.67	2,5	2	1.5			1	1.5	2	2	2	3	2.6	2
			4.8.2.1	3			2							2		3	2	
			4.8.2.2	3	1	2	2	2	1					2	1	3	2	
		Object Oriented	4.8.2.3	3	2					r i						3	2	
41	CS-802	Software	4.8.2.4	3		2								1		3	2	
		Engineering	4.8.2.5	3	1	2	2	1			1	1				3	2	1
			CO Avg	3	1.33	2	2	1.5			1	1		1.67	1	3	2	1
	0.0	Managing	4.8.3.1	3	2								1	2	1	3	2	1
42	CS-803 Managing Innovation and	4.8.3.2	3	, to	Scie	125	5		1	1	2	1	3	2	3	3	2	

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						mst	nun	-										
		Entrepreneurshi	4.8.3.3	3	1		1					2		2	1	3	2	2
		p	4.8.3.4	3		3	1			•		1		3	2	3	3	1
			4.8.3.5	3		T.	2			1		2			2	3	2	2
-			CO Avg	3	1,33	3	1.5			1	1	1.75	1	2.5	1,6	3	2,4	1,6
- 00		1	4.8.4.1	3		1	3				-					3	3	
			4.8.4.2	3		3	2	2				2		3	1	3	3	2
		Cloud	4.8.4.3	3			3	1				1		2	į .	3	3	1
43	-3 CS-804 C	computing	4.8.4.4	3			3	2				2	1	2		3	3	2
			4.8.4.5	3	1	2	3	2				1	1	3		3	3	1
			CO Avg	3	1	2	2.8	1.75				1.5	1	2,5	1	3	3	1,5
			4.8.5.1	3	2	2	3	1			2	3	2	3	1	3	2	1
			4.8.5.2	3	2	3	3	2	2		1	3	2	2	3	3	2	3
			4.8.5.3	3	2	1	2	2				3	1	2	2	3	1	2
44	CS-805	Major Project-II	4.8.5.4	3	1	2	3	2	1		2	2	2	1	2	3	2	2
			4.8.5.5	3	1	3	3	3	1		1	3	2	3	3	3	2	3
		-	CO Avg	3	1.6	2.2	2.8	2	1.33		1,5	2.8	1.8	2.2	2.2	3	1,8	2.2

2.6.2 – Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

Department of Artificial Intelligence and Machine Learning : Course Outcomes Description

Semester - III

S. No.	Subject Code	Subject Name	со	CO Description
			2.3.1.1	Understand the process, scope and forms of communication.
			2.3.1.2	Learn about the verbal and non-verbal communication and be able to effectively communicate.
1	AL301	Technical Communi	2.3.1.3	Effectively write technical reports, letters and memos and improve speaking skills.
		cation		Actively participate in group discussion and interviews and prepare & deliver professional presentations.
			2.3.1.5	Understand the use of grammar, vocabulary and pronunciation etiquettes to develop fluent speaking skills.
			2.3.2.1	Understand the basics of probability and discrete random variables.
			2.3.2.2	Acquire the knowledge of continuous random variables with their distributions and properties.
2	AT 302	Introduction to Probability and	2.3.2.3	Be able to learn bivariate distributions and their properties.
2	AL302	Statistics	2.3.2.4	Gain the knowledge of measures of central tendency, measures of dispersion, skewness and kurtosis and their use in studying various characteristics of data.
			2.3.2.5	Understand methods of curve fitting and test of significance.

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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

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			2.3.3.1	To understand the concept of linear, non-linear data structures, the operations performed on them and the applications of various data structures
			2.3.3.2	Understand the arrays, searching and sorting algorithms.
3	AL303	Data Structure	2.3.3.3	Implement stacks, queues and its applications.
			2.3.3.4	Implement linked list and its variations.
			2.3.3.5	Solve problem involving graphs, trees and heaps.
}			2.3.4.1	Understand the basic concepts of AI and compare different AI search techniques.
			2.3.4.2	To study various techniques of knowledge representation.
4	AL304	Artificial Intelligence	2.3.4.3	Understand the probabilistic reasoning techniques to handle degree of uncertainty in knowledge.
			2.3.4.4	Learn game playing techniques and explore components of NLP.
			2.3.4.5	Analyze the characteristics, requirements and components of expert systems,
		×	2.3.5.1	Describe the procedural and object oriented paradigm with concepts of streams, classes, functions, data and objects.
	-		2.3.5.2	Understand dynamic memory management techniques using pointers, constructors, destructors etc.
5	AL305	ObjectOriented Programming	2.3.5.3	Describe the concept of function overloading, operator overloading, virtual functions and polymorphism.
	=	& Methodology	2.3.5.4	Understand how to apply the major object-oriented concepts to implement object oriented programs in C++, encapsulation, inheritance and polymorphism
			2.3.5.5	Classify inheritance with the understanding of early and late binding, usage of exception handling, generic programming.
			2.3.6.1	Develop essential programming skills in programming concepts like data types, operators, input/output, functions etc
		Computer	2.3.6.2	Experiment with various Data structures in interpreted Language and to build modules for real world software problems.
6	AL306	Workshop/Introduct	2.3.6.3	Solve coding tasks related to conditions, loops and control statement.
		ion to python - i	2.3.6.4	Implement object-oriented principles and exception handling in Python
			2.3.6.5	Work with modeules, packages and file I/O.
		18	1.1.7.1	To display the utility of information and talent units obtained from the path and place of business withinside the assigned task function.
		Evaluation of	1.1.7.2	Solve actual existence demanding situations withinside the path via way of means of analysing the area and choosing suitable ability units obtained from the path.
7	BT-107	Internship-I completed at I year	1.1.7.3	Exhibit important questioning and hassle fixing talents via way of means of analysing underlying issues to challenges.
		level	1.1.7.4	Demonstrate the capacity to harness assets with the aid of using analysing demanding situations and thinking about opportunities.
		1	1.1.7.5	Articulate profession alternatives via way of means of thinking about possibilities in company, sector, industry, expert and academic advincement
8	BT-307	90 hrs Internship based on using	2.3.8.1	Demonstrate the application of knowledge and skill sets acquired from the course and workplace in the assigned job functions.





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2.6.2 – Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

_		ř.		Institute
		various softwares – Internship -II	2.3.8.2	Solve real life challenges in the workplace by analysing work environment and conditions, and selecting appropriate skill sets acquired from the course.
			2.3.8.3	Exhibit critical thinking and problem solving skills by analysing the challenges.
			2.3.8.4	Demonstrate appreciation and respect for diverse groups of professionals by engaging harmoniously with different company stakeholders.
		0	2.3.8.5	Exhibit professional ethics by displaying positive disposition during internship .
				Semester - IV
			2.4.1.1	Develop the understanding of mathematical structures like set theory, relations and mapping.
0	AT 401	Introduction to	2.4.1.2	Demonstarte the properties of algebric structures like groups, rings and fields.
9	AL401	& Linear Algebra	2.4.1.3	Learn the concepts of propositional logic and graph theory.
		6	2.4.1.4	Explore matrix decomposition techniques to solve linear systems.
			2.4.1.5	Apply Hypothesis Testing concepts and formulation.
		34	2.4.2.1	Understand the concept of asymptotic complexity and implement various sorting and searching algorithms.
			2.4.2.2	Experiment with techniques for obtaining maximum outputs with minimum efforts.
10) AL402	Analysis Design of	2.4.2.3	Make use of dynamic programming techniques.
		Algorium	2.4.2.4	Apply the techniques of backtracking and branch and bound to solve 8 queens problem and travelling salesman problem.
		2.4.2.5	Distinguish between NP-hard and NP-complete problems and develop their solutions.	
			2.4.3.1	Define various software application domains and remember different process models used in software development.
			2.4.3.2	Understand various measures of software and generate project schedule.
11	AL403	Software Engineering	2.4.3.3	Describe functional and nonfunctional requirements of software and develop design modules of software.
			2.4.3.4	Investigate the reasons for bugs and apply the software testing techniques in commercial environment.
			2.4.3.5	Understand various activities to be performed for improving software quality and software maintenance.
			2.4.4.1	Define the structure, function and characteristics of computer systems.
			2.4.4.2	Design of the various functional units and components of computers.
12	AL404	Architecture	2.4.4.3	Identify the elements of input output in computers.
			2.4.4.4	Explain the function of each element of a memory hierarchy.
			2.4.4.5	Understand the function of multi processing and techniques to achieve it.
			2.4.5.1	Gain knowledge of basics of machine learning algorithms and dimentionality reduction techniques.
13	AL405	Machine Learning	2.4.5.2	Design and develop the perceptron neural network.
	AL405	8	2.4.5.3	Analyze and apply various algorithms of supervised Learning.
			2.4.5.4	Examine the concept of clustering and expectation maximization.





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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

				Institute
			2.4.5.5	Evaluate the performance of the machine learning model using various parameters.
			2.4.6.1	Learn to install Java IDE and to write, compile and run simple Java programs.
l			2.4.6.2	Apply the concept of object oriented programming using java language to solve real world problems.
4	AL406	Java Lab	2.4.6.3	Implement the concept of Java Applets by creating sample programs
			2.4.6.4	Design and develop GUI applications using Abstract Windowing Toolkit (AWT) and swing.
		22	2.4.6.5	Learn to access database through Java programs, using Java Dat Base Connectivity (JDBC).
			2.4.7.1	Exposure to organizational skills and professional practices.
		90 hrs Internship	2.4.7.2	Efficiently completing tasks, fostering good relationship with senior and subordinates
15	BT-407	based on using	2.4.7.3	Improved communication & interpersonal skills.
		Internship - II	2.4.7.4	Exposure to latest technology applications to the specific discipline
		,	2.4.7.5	Identification of relevant problems in the industry and innovativ solutions.
				Semester - V
			3.5.1.1	To understand about the need and objectives of an Operating Syster and various services provided by the Operating Systems.
	AL-501	Operating System	3.5.1.2	Gain a detailed knowledge about the functions of different module of an Operating System, viz. process management, file system management, memory management, device management etc.
16		Operating System	3.5.1.3	Visualize the internal implementation of various modules of Operating System and correlate the same with the actual implementation of these modules in Unix/Linux and othe contemporary Operating Systems.
			3.5.1.4	Understand the cocept of memory management.
			3.5.1.5	Explore input output management of operating systems
			3.5.2.1	Describe design of a database at various levels and comparandcontrast traditional data processing with DBMS.
		Databasa	3.5.2.2	Design a database using Entity Relationship diagram and othe design techniques
17	AL-502	Management	3.5.2.3	Apply fundamentals of relational model to model and implement sample Database Management System for a given domain.
		bystom	3.5.2.4	Evaluate and optimize queries and apply concepts of transaction management.
			3.5.2.5	Explore relational database management systems for real work
			3.5.3.1	Describe in-depth about theories, fundamentals, and techniques in Deep learning.
10	AL 502(D)	Deen Learning	3.5.3.2	To understand the methods and terminologies involved in dee neural network
10	AL-303(B)	Deep Learning	3.5.3.3	To impart knowledge on CNN and pretrained neural networks
			3.5.3.4	To introduce RNN and Deep Generative model
		9	3.5.3.5	To explore real world applications of Deep learning
19	AL-504 (A)	AI in Health Care	3.5.44	diagnosis
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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

		1		Institute
			3.5.4.2	Understand different evaluation and hyper parameters for medical imagining
			3.5.4.3	Exploring use of AI in different medical applications
			3.5.4.4	Understanding different survival and Time Survival Models
			3.5.4.5	Exploring Medical Treatment Effect Estimation
			3.5.4.1	To learn the fundamentals of natural language processing
			3.5.4.2	To learn the word level analysis methods
20	AL-504 (B)	Natural Language	3.5.4.3	To explore the syntactic analysis concepts.
		Trocessing	3.5.4.4	To understand the semantics and pragmatics.
			3.5.4.5	To leTo understand real world applications of NLP
			3.5.5.1	Describe tools and techniques in Deep learning.
			3.5.5.2	Implement artificial neural network thorugh forward and back propogation
21	AL-505(B)	Deep Learning Lab	3.5.5.3	To impart knowledge on CNN and pretrained neural networks
			3.5.5.4	To implement RNN and Deep Generative model
			3.5.5.5	To explore real world applications of Deep learning
			3.5.6.1	To explore computer vision techniques for disease detection and diagnosis
22	AL-506(A)	AI in Health Care	3.5.6.2	Understand different evaluation and hyper parameters for medical imagining
		Lab	3.5.6.3	Exploring use of AI in different medical applications
			3.5.6.4	Understanding different survival and Time Survival Models
		-	3.5.6.5	Exploring Medical Treatment Effect Estimation
			3.5.6.1	To learn the fundamentals of natural language processing
			3.5.6.2	To learn the word level analysis methods
23	AL-506 (B)	Natural Language	3.5.6.3	To explore the syntactic analysis concepts.
			3.5.6.4	To understand the semantics and pragmatics.
			3.5.6.5	To leTo understand real world applications of NLP
			3.5.8.1	A fully engaged student shall be able to get exposure to undertake a short research project.
24	AL-508	Minor Project-1	3.5.8.2	To enable the students to develop comprehensive solution of identified problems.
			3.5.8.3	To inculcate the ability to synthesize the results of the detailed analytical studies conducted, lay down validity and design criteria, interpret the result for application to the problem, develop the concept and detailed design solution.
				Semester - VI
			3.6.1.1	Explain the basic concepts of switching and finite automata theory and languages.
		Theory of	3.6.1.2	Relate practical problems to languages, automata the computability and complexity.
25	AL-601	Computation	3.6.1.3	Construct abstract models of computing and check their power to recognise the languages.
			3.6.1.4	Analyse the grammar, its types, simplification and normal form.
		3	3.6.1.5	Interpret rigorously formal mathematical methods to prove properties of languages, grammars and automata.





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				Institute
			3.6.2.1	Characterise and appreciate computer networks from the viewpoint of components and from the viewpoint of services.
			3.6.2.2	Display good understanding of the flow of a protocol in general and a network protocol in particular.
26	AT 602	Computer Networks	3.6.2.3	Model a problem or situation in terms of layering consent and map it to the TCP/IP stack.
20	AL-002	Computer Networks	3.6.2.4	Select the most suitable application layer protocol such as (HTTP, STTP, SMTP, DNS bit torrent) and as per the requirements of the network application and work with available tools to demonstrate the working of these protocols.
			3.6.2.5	Design a reliable data transfer protocol and incrementally and develop solutions for the requirements of transport layer.
	-		3.6.3.1	Understand images and videos representation in a detailed manner.
		Image and Video	3.6.3.2	Apply ML techniques for image processing in different scenarios.
27	A-L603 (A)	Processing	3.6.3.3	Apply various object detection and image segmentation algorithms
			3.6.3.4	Understand concept of robotic localization
			3.6.3.5	Apply various image restoration techniques and algorithm
			3.6.4.1	Configure various virtualization tools such as virtual box, VMware workstation.
			3.6.4.2	Design and deploy a web application in a PaaS environment.
28	AL-604 (A)	Cloud Computing	3.6.4.3	Learn how to simulate a cloud environment to implement new schedulers.
		5	3.6.4.4	Install and use a generic cloud environment that can be used as a private cloud.
			3.6.4.5	Manipulate large data sets in a parallel environment.
			3.6.4.1	Understand robotics fundamentals
		L & III' & O	3.6.4.2	Explore various application of AI in robotics
29	A-L604 (C)	for Robotics	3.6.4.3	Explore cocept of game playing
			3.6.4.4	Understand robotcs classification, specification and reresantation
			3.6.4.5	Explore robotics and AI applications in real world
			3.6.5.1	Understand images and videos representation in a detailed manner.
		Image and Video	3.6.5.2	Apply ML techniques for image processing in different scenarios.
30	A-L605 (A)	Processing Lab	3.6.5.3	Apply various object detection and image segmentation algorithms
			3.6.5.4	Understand concept of robotic localization
			3.6.5.5	Apply various image restoration techniques and algorithm
			3.6.6.1	Configure various virtualization tools such as virtual box, VMware workstation.
			3.6.6.2	Design and deploy a web application in a PaaS environment.
31	AL-606 (A)	Cloud Computing Lab	3.6.6.3	Learn how to simulate a cloud environment to implement new schedulers.
			3.6.6.4	Install and use a generic cloud environment that can be used as a private cloud.
			3.6.6.5	Manipulate large data sets in a parallel environment.
			3.6.6.1	Understand robotics fundamentals
30	A-I 606 (C)	Intelligent Systems	3.6.6.2	Explore various application of AI in robotics
54	A-L000 (C)	for Robotics Lab	3.6.6.3	Explore cocept of game playing
			3.6.6.4	Understand robotes classification, specification and reresantation

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	Institute				
			3.6.6.5	Explore robotics and AI applications in real world	
	AL-607		3.6.7.1	To display the utility of information and talent units obtained from the path and place of business withinside the assigned task functions.	
			3.6.7.2	Solve actual existence demanding situations withinside the path via way of means of analysing the area and choosing suitable ability units obtained from the path.	
33		Internship-III	3.6.7.3	Exhibit important questioning and hassle fixing talents via way of means of analysing underlying issue/s to challenges.	
		4	3.6.7.4	Demonstrate the capacity to harness assets with the aid of using analysing demanding situations and thinking about opportunities.	
			3.6.7.5	Articulate profession alternatives via way of means of thinking about possibilities in company, sector, industry, expert and academic advancement.	
		Minor Project II	3.6.8.1	A fully engaged student shall be able to get exposure to undertake a short research project.	
34	AL-608		3.6.8.2	To enable the students to develop comprehensive solution of identified problems.	
54			3.6.8.3	To inculcate the ability to synthesize the results of the detailed analytical studies conducted, lay down validity and design criteria, interpret the result for application to the problem, develop the concept and detailed design solution.	

Department of Information Technology : Course Outcomes Description

S. No.	Univ. Subject Code	Subject Name	со	CO Description
	ES-301		2.3.1.1	Get the knowledge of energy carriers, energy technologies, renewable energy resources, energy challenges and energy system integration and environment sustainability.
			2.3.1.2	Learn about the different types of ecosystems present in environment, ecological succession and energy flow in the ecosystem.
1		Energy &	2.3.1.3	Understand the value of bio-diversity to human societies, threats to bio-diversity, In-situ and Ex-situ conservation of bio-diversity.
		Engineering	2.3.1.4	Acquire knowledge of different types of environmental pollution, its effects on life and its remedies.
			2.3.1.5	Aware about the social issue related to the environment, environment ethics, protection and conservation acts for the environment.
			CO Avgerage	
			2.3.2.1	Construct simple mathematical proofs and possess the ability to verify them.
2	IT302	Discrete Structure	2.3.2.2	Specify and manipulate basic mathematical objects such as sets, functions, and relations and will also be able to verify simple mathematical properties that these objects possess.
			2.3.2.3	skillful in expressing mathematical properties formally via the formal language of propositional logic and predicate logic.





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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

				Institute
			2.3.2.4	Acquire ability to describe computing problems with the help of graph theory and Finite state machines, also express its utility in solving and modeling real time problems.
			2.3.2.5	Apply basic counting techniques to solve combinatorial problem.
			CO Avgerage	
			2.3.3.1	Ability to analyze algorithms and algorithm correctness.
			2.3.3.2	Ability to summarize the use of stack and queue in real life applications.
			2.3.3.3	Ability to describe the use of tree.
3	IT303	Data Structure	2.3.3.4	Ability to have knowledge of graphs concepts.
			2.3.3.5	Ability to summarize searching, sorting and hashing techniques.
			CO Avgerage	
		Object Oriented Programming Methodology	2.3.4.1	Understand the concept of number systems & binary arithmetic.
	~		2.3.4.2	To study the boolean algebra and minimization of switching function.
	IT304		2.3.4.3	Understand logic gates, universal gate, adders & subtractors.
4			2.3.4.4	Demonstrate linear wave shaping circuits, logic families, multiplexers and memory.
			2.3.4.5	Understand basic digital communication system.
			CO Avgerage	
			2.3.5.1	Describe the procedural and object oriented paradigm with concepts of streams, classes, functions, data and objects.
			2.3.5.2	Understand dynamic memory management techniques using pointers, constructors, destructors etc.
			2.3.5.3	Describe the concept of function overloading, operator overloading, virtual functions and polymorphism.
5	IT305	Digital Circuit System	2.3.5.4	Understand how to apply the major object-oriented concepts to implement object oriented programs in C^{++} , encapsulation, inheritance and polymorphism.
			2.3.5.5	Classify inheritance with the understanding of early and late binding, usage of exception handling, generic programming.
			CO Avgerage	
			2.3.6.1	Understand the concepts of Java programming.
6	IT306	Java Programming	2.3.6.2	Understand fundamentals of programming such as variables conditional and iterative execution, methods, etc.
				Principal





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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

	Institute				
			2.3.6.3	Understand fundamentals of object-oriented programming in Java and be familiar of the important concepts like class, inheritance and multithreading, A WT and JDBC.	
			2.3.6.4	Use the Java SDK environment to create, debug and run Java programs.	
			2.3.6.5	Develop Java applet.	
			CO Avgerage		
		(#	1.1.7.1	To display the utility of information and talent units obtained from the path and place of business withinside the assigned task function.	
		Evaluation of	1.1.7.2	Solve actual existence demanding situations withinside the path via way of means of analysing the area and choosing suitable ability units obtained from the path.	
7	BT107	Internship-I completed at I year	1.1.7.3	Exhibit important questioning and hassle fixing talents via way of means of analysing underlying issues to challenges.	
		level	1.1.7.4	Demonstrate the capacity to harness assets with the aid of using analysing demanding situations and thinking about opportunities.	
			1.1.7.5	Articulate profession alternatives via way of means of thinking about possibilities in company, sector, industry, expert and academic advancement.	
			CO Avgerage		
		Mathematics- III	2.4.1.1	Understand mathematical tools for the numerical solutions algebraic and transcendental equations.	
			2.4.1.2	Describe mathematical knowledge to understand laplace transformation, inverse laplace transformation and fourier transform which are used in various branches of engineering.	
9	BT-401		2.4.1.3	Work with mathematical tools available in statistics needed in various field of science and engineering.	
	DI IOI		2.4.1.4	Fulfill the needs of engineers to understand applications of numerical analysis, transform calculus and statistical techniques in order to acquire mathematical knowledge.	
			2.4.1.5	Solve wide range of practical problems appearing in different sections of science and engineering.	
			CO Average		
			2.4.2.1	To define the structure, function and characteristics of computer systems.	
			2.4.2.2	To define the design of the various functional units and components of computers.	
10	1T402	Computer	2.4.2.3	To identify the elements of modern instructions sets and their impact on processor design.	
	11102	Architecture	2.4.2.4	To explain the function of each element of a memory hierarchy.	
			2.4.2.5	To explain the function of multi processing and techniques to achieve it	
	1		CO Aygerage		





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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

				Institute
			2.4.3.1	The algorithms and its design, relation between algorithm and program, Time and Space complexity of an algorithm
			2.4.3.2	Various approaches to design an algorithm like divide and conquer, dynamic programming etc.
	17.402	Analysis and Design	2.4.3.3	Argue the correctness of algorithms using inductive proofs and invariants
11	11403	of Algorithm	2.4.3.4	Different ways to analyze randomized algorithms and know about the approximation algorithms
			2.4.3.5	Compare between different data structures. Pick an appropriate data structure for a design situation
			CO Avgerage	
			2.4.4.1	Differentiate Analog and Digital Signal and types of signals.
			2.4.4.2	Understand the communication of information over the communication channel.
12	IT404	Analog & Digital	2.4.4.3	Understand how information signal of low frequency can be transmitted with the help of modulation techniques over a long distance.
		Communication	2.4.4.4	Differentiate different modulation techniques such as AM, SSB, DSB and FM.
			2.4.4.5	Explain using block diagrams, modulation and demodulation techniques for digital signal and determine bandwidth requirement.
			CO Avgerage	
		Data base Management System	2.4.5.1	To understand the different issues involved in the design and implementation of a database system.
			2.4.5.2	To study and learn how to construct ER model
			2.4.5.3	To understand and use data manipulation language to query, update, and manage a database.
13	IT405		2.4.5.4	To develop an understanding of essential DBMS concepts such as: Normalization.
	-		2.4.5.5	To design and build a simple database system and demonstrate competence with the fundamental tasks involved with transaction and concurrency control.
			2.4.5.6	
			CO Avgerage	
			2.4.6.1	To familiarize students with open source academic software like Scilab or licensed software like Matlab to carry out experiments in various fields in due course like computer graphics and multimedia, soft-computing, image processing, data mining etc.
14	IT406	Introduction to Web Design	2.4.6.2	Experimental works in web design will enable students to design web pages and develop web based projects.
			2.4.6.3	To understand various architectural styles of software systems
			2.4.6.4	Interrelationships, principles and guidelines governing architecture and evolution over time
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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

	Institute				
			2.4.6.5	Build design documentation outlining the testable and complete design of a simple program	
			CO Avgerage		
			2.4.7.1	Students will be able to understand Functions of operating system and its types and Unix system architecture	
		4	2.4.7.2	Students will be able to understand and make use of the basic commands of linux operating system and Work confidently in Linux environment	
	IT-407	Open Source 2 Software Lab (Linux and R)	2.4.7.3	Students will be able to understand file systems and illustrate various file operations	
	11 107		2.4.7.4	Students will be able to create shell scripts to automate different tasks as Linux	
			2.4.7.5	Students will understand installation of web servers and proxy servers	
			CO Avgerage		
			3.5.1.1	Explain the role of operating system and its management policies and algorithm.	
			3.5.1.2	Identify the process management policies and analyze and compare scheduling of processes by CPU along with memory management.	
		2	3.5.1.3	Identify process synchronization and coordination handled by operating system	
17	IT501	Operating System	3.5.1.4	Understand concepts of memory management including virtual memory	
			3.5.1.5	Understand issues related to file system interface and implementation, disk management and Summarize the introduction to network, multiprocessor and distributed OS, and Elaborate on case studies for the same.	
			CO Avgerage		
			3.5.2.1	Outline and describe the fundamental concepts of computer network and functions of each layer in OSI and TCP/IP model.	
		1	3.5.2.2	Data link layer issues in a corporate network by identifying functions of data link layer protocols, essential principles of a MAC sub layer and by comparing contention, limited contention and contention free protocols.	
18	1T502	Computer Network	3.5.2.3	Classify the routing protocols to find shortest paths for network- layer packet delivery and analyze how to assign the IP addresses for the given network using the concept of subnetting and Supernetting.	
		0	3.5.2.4	Describe the functions of Transport layer and its Protocols.	
			3.5.2.5	Explain the functions of Application layer Protocols and Design a network infrastructure using various internetworking devices.	
			3.5.2.6	Relate practical problems to languages, automata, computability and complexity.	
			CO Average	Science and	
				Principal	





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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

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			3.5.3.1	Explain the basic concepts of switching and finite automata theory & languages
			3.5.3.2	Relate practical problems to languages, automata, computability and complexity.
19	UTE 02	Theory of	3.5.3.3	Construct abstract models of computing and check their power to recognize the languages.
	11503	Computation	3.5.3.4	Analyze the grammar, its types, simplification and normal form.
			3.5.3.5	Interpret rigorously formal mathematical methods to prove properties of languages, grammars and automata.
			CO Avgerage	
			3.5.4.1	Be familiar with terminology used in this area
			3.5.4.2	Explain what constitutes "Artificial" Intelligence and how to identify systems with Artificial Intelligence
		Artificial	3.5.4.3	Know how to build simple knowledge-based systems
20	IT504	Intelligence	3.5.4.4	Have ability to apply knowledge representation, reasoning, and machine learning techniques to real world problems
			3.5.4.5	Introducing learning and various learning techniques
			CO Avgerage	
		Advanced Java Lab	3.5.5.1	Understand Functions of operating system and its types and Unix system architecture.
			3.5.5.2	Understand and make use of the basic commands of linux operating system and Work confidently in Linux environment.
			3.5.5.3	Understand file systems and illustrate various file operations.
21	IT505		5	
		Advanced Java Lab	3.5.5.4	Create shell scripts to automate different tasks as Linux.
		Advanced Java Lab	3.5.5.4 3.5.5.5	Create shell scripts to automate different tasks as Linux. Understand installation of web servers and proxy servers.
	Ľ	Advanced Java Lab	3.5.5.4 3.5.5.5 CO Avgerage	Create shell scripts to automate different tasks as Linux. Understand installation of web servers and proxy servers.
		Advanced Java Lab	3.5.5.4 3.5.5.5 CO Avgerage 3.5.6.1	Create shell scripts to automate different tasks as Linux. Understand installation of web servers and proxy servers. Student should be able to understand the basic concepts scripting and the contributions of scripting language
		Advanced Java Lab	3.5.5.4 3.5.5.5 CO Avgerage 3.5.6.1 3.5.6.2	Create shell scripts to automate different tasks as Linux. Understand installation of web servers and proxy servers. Student should be able to understand the basic concepts scripting and the contributions of scripting language Examine the core data structures like lists, dictionaries, tuples and sets in Python to store, process and sort the data.
		Soft Skills and	3.5.5.4 3.5.5.5 CO Avgerage 3.5.6.1 3.5.6.2 3.5.6.3	Create shell scripts to automate different tasks as Linux. Understand installation of web servers and proxy servers. Student should be able to understand the basic concepts scripting and the contributions of scripting language Examine the core data structures like lists, dictionaries, tuples and sets in Python to store, process and sort the data. Identify the external modules and import specific methods form them
22	IT506	Soft Skills and Interpersonal Communication	 3.5.5.4 3.5.5.5 CO Avgerage 3.5.6.1 3.5.6.2 3.5.6.3 3.5.6.4 	Create shell scripts to automate different tasks as Linux. Understand installation of web servers and proxy servers. Student should be able to understand the basic concepts scripting and the contributions of scripting language Examine the core data structures like lists, dictionaries, tuples and sets in Python to store, process and sort the data. Identify the external modules and import specific methods form them Demonstrate proficiency in handling Strings and File Systems.
22	IT506	Advanced Java Lab Soft Skills and Interpersonal Communication	 3.5.5.4 3.5.5.5 CO Avgerage 3.5.6.1 3.5.6.2 3.5.6.3 3.5.6.4 3.5.6.5 	Create shell scripts to automate different tasks as Linux. Understand installation of web servers and proxy servers. Student should be able to understand the basic concepts scripting and the contributions of scripting language Examine the core data structures like lists, dictionaries, tuples and sets in Python to store, process and sort the data. Identify the external modules and import specific methods form them Demonstrate proficiency in handling Strings and File Systems. Ability to explore python especially the object oriented concepts, and the built in objects of Python.

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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

20			Institute
		3.5.7.1	Ability to be a multi-skilled engineer with good technical knowledge, management, leadership, social and environmental responsibility, and entrepreneurship skills.
IT507	Evaluation of Internship-II	3.5.7.2	Understand the usage of modern technologies & tools in the field of Electronics & Communication Engineering
		CO Avgerage	
		3.5.8.1	A fully engaged student shall be able to get exposure to undertake a short research project.
		3.5.8.2	To enable the students to develop comprehensive solution of identified problems.
IT508	Minor Project- I	3.5.8.3	To inculcate the ability to synthesize the results of the detailed analytical studies conducted, lay down validity and design criteria, interpret the result for application to the problem, develop the concept and detailed design solution.
		CO Avgerage	
		3.6.1.1	Descried the working of Input and Output devices for graphics.
	Computer Graphics & Multimedia	3.6.1.2	Match and explain about graphics primitives and work with coordinate spaces, coordinate conversion
IT601		3.6.1.3	Analyze and demonstrate 2D & 3D geometrical transformations using modern tools.
		3.6.1.4	Understand multimedia systems architecture, multimedia components and use various
		3.6.1.5	Distinguish and evaluate he fractals, and the Animation with various techniques
		CO Avgerage	20 E
	Wireless and Mobile	3.6.2.1	Design and create traditional networks
		3.6.2.2	Understand the different issues in MAC and routing issues in multi hop wireless and ad-hoc networks and existing solutions for the same.
IT602		3.6.2.3	Evaluate the transport layer issues in wireless networks due to error's and mobility of nodes and understand existing solutions for the same.
		3.6.2.4	Explain the architecture of GSM.
		3.6.2.5	Discuss the services, emerging issues and future trends in M-Commerce.
		CO Avgerage	
		3.6.3.1	Demonstrate an understanding of the compilation phases.
IT603	Compiler Design	3.6.3.2	Specify and analyze the lexical, syntactic and semantic structures of advanced language features.
		2.022	Write a scanner, parser, and semantic analyser without the aid of
	IT507 IT508 IT601 IT602	IT507 Evaluation of Internship-II of IT508 Minor Project- I Computer Graphics & Multimedia IT602 Wireless and Mobile Computing	IT507 Evaluation Internship-II 3.5.7.1 IT508 Angerage 3.5.8.1 IT508 Minor Project-I 3.5.8.1 IT508 Minor Project-I 3.5.8.1 IT508 Minor Project-I 3.5.8.3 CO Avgerage 3.6.1.1 J.5.8.3 CO Avgerage IT601 Computer Graphics & Multimedia 3.6.1.1 J.6.1.3 3.6.1.3 J.6.1.4 3.6.1.3 J.6.1.5 CO Avgerage J.6.1.4 3.6.2.1 J.6.1.5 CO Avgerage J.6.2.1 3.6.2.1 J.6.2.2 J.6.2.3 IT602 Wireless and Mobile Computing J.6.2.3 J.6.2.4 J.6.2.5 CO Avgerage J.6.2.4 J.6.2.5 CO Avgerage J.6.3.1 J.6.3.1 J.6.3.1 J.6.3.2





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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

				Institute
			3.6.3.4	Describe techniques for intermediate code and machine code optimization.
			3.6.3.5	Design the structures and support required for compiling advanced language features
			CO Avgerage	
			3.6.4.1	To introduce software development life cycle and various software process models
			3.6.4.2	To introduce measures and metrics for software quality, reliability and software estimation techniques
• •	TT CO 4	Software	3.6.4.3	To develop an understanding of software analysis and design phases
28	11604	Engineering	3.6.4.4	To introduce coding standards, guidelines and various software testing techniques
			3.6.4.5	To introduce various activities for software maintenance and quality assurance
			CO Avgerage	2
		Programming in Python	3.6.5.1	Student should be able to understand the basic concepts scripting and the contributions of scripting language
	IT605		3.6.5.2	Examine the core data structures like lists, dictionaries, tuples and sets in Python to store, process and sort the data.
• •			3.6.5.3	Identify the external modules and import specific methods form them
29			3.6.5.4	Create, run and manipulate Python Programs using core data structures like Lists, Dictionaries and use Regular Expressions
-			3.6.5.5	Interpret the concepts of GUI and WEB Programming as used in Python
			CO Avgerage	
		-	3.6.6.1	Experiment on Integrated Development Environment for Android Application Development.
			3.6.6.2	Design and Implement User Interfaces and Layouts of Android App.
		Android	3.6.6.3	Use Intents for activity and broadcasting data in Android App.
30	11606	Programming	3.6.6.4	Design and Implement Database Application and Content Providers
			3.6.6.5	Inspect and Utilize Camera and Location Based service and develop Android App with Security features
			СО	
			Avgerage 3.6.8.1	A fully engaged student shall be able to get exposure to undertake
32	IT608	Minor Project II	3.6.8.2	To enable the students to develop comprehensive solution of identified problems.
			3.6.8.3	To inculcate the ability to synthesize the results of the detailed analytical studies conducted, lay down validity and design criteria,
-	10	1		





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2.6.2 – Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

	Institute				
				interpret the result for application to the problem, develop the concept and detailed design solution.	
			CO Avgerage		
		4	4.7.1.1	Students will be able to get knowledge in soft computing vs. hard computing, Artificial Intelligence : Introduction, Various types of production systems, characteristics of production systems.	
			4.7.1.2	Students will be able to explore advance concepts in Neural Networks,Learning Process and Learning Task, Supervised Learning – Single and Multi Layer Network, Associative Memory, Self organizing Maps, Neuro-Dynamics, Hopfield Network	
33	IT701	Soft Computing	4.7.1.3	Students will learn Fuzzy Logic and Systems Fuzzy Sets and Membership Functions, Operations on Fuzzy Sets, Fuzzification, Fuzzy Numbers- Uncertain Fuzzy Values, Fuzzy Numbers and its L-R representation, Operations on Fuzzy Numbers, Fuzzy Relations, Fuzzy Inference Systems- Architecture of Fuzzy Inference System, Fuzzy Inference Rules and Reasoning, Defuzzification, Applications of Fuzzy Logic.	
	-		4.7.1.4	Students will be able to learn Genetic algorithms and evolutionary computation, Applications of Genetic Algorithms & Hybrid Systems	
			4.7.1.5	Describe software architecture documentation.	
			CO Avgerage	ž.	
			4.7.2.1	Explain the core concepts of the cloud computing paradigm	
			4.7.2.2	Demonstrate knowledge of virtualization	
24	17702		4.7.2.3	Explain the core issues of cloud computing such as security, privacy, and interoperability	
34	11702	Cloud Computing	4.7.2.4	Choose the appropriate technologies, algorithms, and approaches for the related issues	
			4.7.2.5	Identify problems, and explain, analyze, and evaluate various cloud computing solutions	
			CO Avgerage		
			4.7.3.1	Explain what Internet of Things is.	
	5		4.7.3.2	Describe key technologies in Internet of Things and RFID.	
25	17702	Internet of Thisse	4.7.3.3	Understand Principles for Web Connectivity and Communication Protocols	
33	11703	Internet of Things	4.7.3.4	Explain Wireless Sensor Network Technology and Sensor data Communication Protocols.	
			4.7.3.5	Understand smart city streetlights control & monitoring and Business models for the Internet of Things	
			CO Avgerage		





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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

	Institute					
			4.7.4.1	Demonstrate wireless network with number of nodes and different parameters using simulator,		
			4.7.4.2	Understand the basic concept of inter-networking devices.		
		Departmental Elective Lab CS-702	4.7.4.3	Describe the basic concept of IP addressing.		
36	11704	[Wireless & Mobile Computing]	4.7.4.4	Execute the basic network command and Network configuration commands.		
			4.7.4.5	Configure network using routing protocol.		
			CO Avgerage			
		8	4.7.5.1	Understand agile development processes and the principles behind the Agile manifesto.		
			4.7.5.2	Develop a product vision, customer journey, and roadmap.		
	10000	Open Elective Lab CS-703	4.7.5.3	Build out a backlog and user stories.		
37	11705	[Agile Software Development]	4.7.5.4	Leverage Scrum practices in small teams as you build out a working prototype for your class project.		
			4.7.5.5	Explore advanced and emerging topics in the domain of software development.		
			CO Avgerage			
		Major Project-I	4.7.6.1	Demonstrate a sound technical knowledge of their selected project topic .		
			4.7.6.2	Undertake problem identification, formulation and solution.		
			4.7.6.3	Design engineering solutions to complex problems utilising a systems approach.		
38	IT706		4.7.6.4	Communicate with engineers and the community at large in written and oral forms.		
			4.7.6.5	Demonstrate the knowledge, skills and attitudes of a professional engineer.		
			CO Avgerage	0		
			4.6.7.1	Demonstrate awareness of the ethics involved in doing an internship.		
			4.6.7.2	Describe, analyze, and synthesize their learning experience in the internship in the form of an internship paper.		
		D shorting of	4.6.7.3	Articulate new learning from the internship experience in the form of an oral presentation.		
39	IT707	Internship -III	4.6.7.4	Show understanding and assess the challenges carrying out an internship in a cross cultural setting with limited language skills and in a short timeframe;		
			4.6.7.5	Gain meaningful and practical experience in their chosen field.		
			CO Avgerage	Science and		
-			1.50			



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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

				Institute
			4.8.1.1	Understand key terms and concepts in information security and Cryptography and evaluate the cyber security needs of an organization
		21	4.8.1.2	Acquire knowledge to secure computer systems, protect personal data, and secure computer networks in an organization
40	IT801	Information Security	4.8.1.3	Apply knowledge of various encryption algorithms and authentication mechanisms to secure information in computer systems and networks
			4.8.1.4	Understand principles of web security to secure network by monitoring and analyzing the nature of attacks and design/develop security architecture for an organization.
			4.8.1.5	Design operational and strategic information security strategies and policies.
	1		CO	
			Avgerage	
			4.8.2.1	Recognize the characteristics of machine learning strategies.
		2	4.8.2.2	Apply various supervised learning methods to appropriate problems.
		Machine Learning	4.8.2.3	Identify and integrate more than one technique to enhance the performance of learning.
41	IT802		4.8.2.4	Create probabilistic and unsupervised learning models for handling unknown pattern.
			4.8.2.5	Analyze the co-occurrence of data to find interesting frequent patterns and Preprocess the data before applying to any real-world problem and can evaluate its performance
			CO Avgerage	
		Parallel Computing	4.8.3.1	To develop an understanding of various basic concepts associated with parallel computing environments
			4.8.3.2	Understand, appreciate and apply parallel and distributed algorithms in problem solving
12	17203		4.8.3.3	Acquire skills to measure the performance of parallel and distributed programs
42	11805		4.8.3.4	Design parallel programs to enhance machine performance in parallel hardware environment
			4.8.3.5	Design and implement parallel programs in modern environments such as CUDA, OpenMP, etc
			CO Avgerage	
		×	4.8.4.1	Recognize the characteristics of machine learning strategies
	TTOC 4	Machine Learning	4.8.4.2	Apply various supervised learning methods to appropriate problems.
43	11804	Lab	4.8.4.3	Identify and integrate more than one technique to enhance the performance of learning.
			4.8.4.4	Create probabilistic and unsupervised learning models for handling unknown pattern.



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				Institute
			4.8.4.5	Analyze the co-occurrence of data to find interesting frequent patterns and Preprocess the data before applying to any real-world problem and can evaluate its performance
			CO	
			Avgerage	
			4.8.5.1	Learn about different software development process models and software engineering principles and develop an ability to apply them to software design of real life problems.
			4.8.5.2	Plan, analyze, design and implement a software project using programming languages like Java, ASP, PHP etc.
44	IT805	Major Project-II	4.8.5.3	Gain confidence at having conceptualized, designed and implemented a working major project with their team.
	IT805		4.8.5.4	Understand the fundamental principles of Software Project management & will also have a good knowledge of responsibilities of project manager and how to handle these.
			4.8.5.5	Be familiar with the different methods and techniques used for project management.

CO PO and PSO Mapping : Department of Information Technology

S. No.	Sub Code	Subject Name	со	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
							SE	MEST	ER -	III				A 11				
			2.3.1.1	3	2	3	2				3	2				3	2	1
			2.3.1.2	3	1		3	3			-					3	1	1
	EQ	Energy &	2.3.1.3	3		2	1		3	3						3		1
1	301	Environmental	2.3.1.4	2	1	3		3	2							3	2	1
		Engineering	2.3.1.5		3	2	3	3								2	2	1
			CO Avg	2.75	1.75	2.5	2.25	3	2.5	3	3	2				2.8	1.75	1
			2.3.2.1	2	2	3	2		1			8			1	2	3	1
			2.3.2.2	1			3									1	3	
	IT_	Discrete	2.3.2.3	2		3										2	3	
2	302	Structure	2.3.2.4	1		2			3					2		1	2	3
			2.3.2.5		3		2											
			CO Avg	1.5	2.5	2.67	2.33		2			8		2	1	1.5	2.75	2
			2.3.3.1	2	1	3			1						2	2	3	1
			2.3.3.2	2	1	2	3									2	3	
3	IT-	Data Structure	2.3.3.3	1	2	2		1								1	2	
	505		2.3.3.4	1	2	3		1	2					X		1	3	2
			2.3.3.5	1	2	3	25	a 187)	0.0		÷					N	3	





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2.6	.2 –	Attainment	of Programme	Outcomes and	Course	Outcomes a	re Evaluated by the	
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						lt .	istitu	ite										
	-		CO Avg	1.4	1.6	2.6	3	1	1.5						2	1.4	2.8	1.5
			2.3.4.1	3	1	2		(*)								3	2	
			2.3.4.2	1		2	3	1	2					0		1	3	2
	IT	Object Oriented	2.3.4.3	1	2	1	3					1		3	2	2	3	1
4	304	Programming	2.3.4.4	2	2	2	3	13	1			2		2	2	2	3	2
		& Methodology	2.3.4.5	1	2		2			1				2		1	2	
			CO Avg	1.6	1.75	1.75	2.75		1.5			1.5		2.33	2	1.8	2.6	1.67
			2.3.5.1	2	1	3	2					1		2		2	3	1
			2.3.5.2	1	2	2	3									1	3	
5	IT-	Digital Circuits	2.3.5.3	2	2	3								2		2	3	
	305	& System	2.3.5.4		3	2	1		2						-		3	2
			CO Avg	1.67	2	2.5	2		2			1		2		1.67	3	1.5
			2.3.6.1	2	1	3	2									2	3	
			2.3.6.2	2		1	2							3		2	3	-
	IT-	JAVA	2.3.6.3	1	2	1	1					3				1	2	3
6	306	Programming	2.3.6.4	1		3	2							2		1	3	
		Lab	2.3.6.5	1	2	3	2							1		1	3	
			CO Avg	1.4	1.67	2.2	1.8					3		2		1.4	2.8	3
	-		1.1.7.1				2		1	1	1	3	2	2	2	2	2	3
			1.1.7.2			1	2				-	3	3	2	1	1	2	3
	BT-	Evaluation of Internship-1	1.1.7.3		2	3						3	2	2			3	3
7	107	completed at I	1.1.7.4	1							2	3	2	3	1	1	3	3
		year level	1.1.7.5							1	1	2	2	3	2	2	3	2
			CO Avg	1	2	2	2			1	1.33	2.8	2.2	2.4	1.5	1.5	2.6	2.8
							SEN	MEST	TER -	IV								
			2.4.1.1		2	3	1	3									3	
			2.4.1.2		1	2	3					1		2	2	2	3	1
	DT	Mathematics	2.4.1.3	1	2	1	2	3			-	2		2		1	3	2
9	401	III	2.4.1.4	3	1	2	3		1			1				3	3	1
			2.4.1.5	1	2	3	2		2			1		3	1	1	3	2
			CO Avg	1.67	1.6	2.2	2.2	3	1.5			1.25		2.33	1.5	1.75	3	1.5
			2.4.2.1	2	1	2										2	2	
10	IT-	Computer	2.4.2.2	1	2	3	1		2							1	3	2
10	402	Architecture	2.4.2.3		1	2						2	P	3			3	2
			2.4.2.4	2	3	2	100	len								2	3	

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						Ir	istitu	te			1				1	ř –	1	1
			2.4.2.5	2	2	3										2	3	
			CO Avg	1.75	1.8	2.4	1		2	`		2		3		1.75	2.8	2
			2.4.3.1	1	2	2	1					1		3		1	3	1
			2.4.3.2	1	1	2	3	1						-		1	3	
	IT	Analysis and	2.4.3.3	2	1	1	2					3		2		2	2	3
1	403	Design of	2.4.3.4	1	1	2	3					1		2	2	2	3	1
		Algorithm	2.4.3.5	1	2	1	3					2	1	1	2	2	3	2
	-		CO Avg	1.2	1.4	1.6	2.4					1.75	1	2	2	1.6	2.8	1.75
			2.4.4.1	1	2	2	1						2			1	2	2
			2.4.4.2	2	3	2										2	3	
	IT	Analog &	2.4.4.3	1	2	2	3 ·									1	3	
2	404	Digital	2.4.4.4		2	2	3		2			-					3	2
		Communication	2.4.4.5		1	3		i I				1		2			3	1
			CO Avg	1.33	2	2.2	2.33		2			1		2		1.33	2.8	1.67
			2.4.5.1	2	2							2				2	2	2
			2.4.5.2	1	3	2					1	3				1	3	3
			2.4.5.3	2	3	2	3					2	1	3	1	2	3	2
3	IT-	Data base Management	2.4.5.4	1	1	2	2					1		2		1	2	1
5	405	System	2.4.5.5	1	2	3	3							2		1	3	
			2.4.5.6	2	1	2	3									2	3	
			CO Avg	1.4	2	2.2	2.75				1	2	1	2.33	1	1.4	2.8	2
			2.4.6.1	1	2	3						2				1	3	2
			2.4.6.2		1	3		1				1		3			3	1
		Introduction to	2.4.6.3	1	2	2	14		1			2		3	1	1	3	2
4	406	Web Design	2.4.6.4					2				1	2	1			2	2
			2.4.6.5	2	2						2	1	1	2		2	2	2
			CO Avg	1.33	1.75	2.67	-	2	1		2	1.4	1.5	2.25	1	1.33	2.6	1.8
			2.4.7.1	2	3											2	3	
		-	2.4.7.2	1	2	1	3				1	1		2		1	3	1
	IT-	Open Source	2.4.7.3	1	2	1						2	1	3		1	3	2
5	407	Software Lab	2.4.7.4	2	2	1	3					1		2		2	3	1
		(Emax and R)	2.4.7.5	2	2	1						2		1	1	2	2	2
			CO	1.6	2.2	1	3				1	1.5	1	2	1	1.6	2.8	1.5
	J		rvg	L		<u> </u>	SE	MES	TER -	· V		1			L			
17			3.5.1.1	2	1	2-	3				1	2			N	2	3	2
		, n			ore Instrument	age N	No. 3	of	102			In	dore	Prin Instit	cipa ute o	l f Scier	nce re	

2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the



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			3.5.1.1	2	1	2	3	П	T	1	2		1	1	2	3	2
		с. I. С.	3.5.1.2	1	2	-	2 -		1	t	2		2	1	1	2	2
			3.5.1.3	2	2	-	2		1	t	1		-	-	2	2	1
17	IT-501	Operating System	3.5.1.4	2	2		3		1	t	-		1	-	2	3	+
			3.5.1.5	1	2	1	2	2		1	2		3		1	3	2
			CO Avg	1.6	1.8	1.5	2.4	2		1	1.75	11	2.5	1	1.6	2.6	1.75
			3.5.2.1	3											3		
			3.5.2.2	3		1									3	1	
			3.5.2.3	3	1	2									3	2	
18	IT-502	Computer Network	3.5.2.4	3	2	2					1		1	2	3	2	1
			3.5.2.5	3	2	2	3							1	3	3	
			CO Avg	3	1.67	1.75	3				1		1	1.5	3	2	1
			3.5.3.1	2	1	2					1	2			2	2	2
			3.5.3.2	3			2								3	2	
			3.5.3.3	2	1	2	3								2	3	
19	IT-503	Theory of Computation	3.5.3.4	3	2						2	3	1		3	2	3
			3.5.3.5	2	1	3	1					2		1	2	3	2
			CO Avg	2.4	1.25	2.33	2				1.5	2.33	1	1	2.4	2.4	2.33
			3.5.4.1	3								2			3		2
			3.5.4.2	3	1						3				3	1	3
20	IT-504	Artificial Intelligence	3.5.4.3	3		2	3	1		1			3		3	3	1
			3.5.4.4	3							2	1	3	3	3	3	2
			CO Avg	3	1	2	3			1	2.5	1.5	3	3	3	2.33	2
			3.5.5.1	3	2				T						3	2	
			3.5.5.2	2		3			T		2	1	2		2	3	2
			3.5.5.3	3	2	2					1		3		3	3	1
21	IT-505	Advanced Java Lab	3.5.5.4	3	2			T							3	2	
			3.5.5.5	3	2	2	2	T	1		2	1	2	1	3	2	2
			CO Avg	2.8	2	2.33	2		1		1.67	1	2.33	1	2.8	2.4	1.67
			3.5.6.1														
			3.5.6.2											Ξ.,			
	IT FOS	Soft Skills and Interpersonal	3.5.6.3														
22	11-506	Communication	3.5.6.4														
			3.5.6.5														
		6	CO Avg.nc	8 30													
		/s	3.5.7.1	3	18			1			2		2		3	-	
		nstitut	à	Ro	golom								Pril	TET	at	3	



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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

						In	stitu	te									- 1	1
			3.5.7.2	3	2		1					2		1	a –	3	1	
	0		3.5.7.3	3			1			•						3	1	
	IT-	Evaluation of	3.5.7.4	3	2		1					2		1		3	2	
	507	Internship-II	3.5.7.5	3	2								2	3	3	3	2	1
			CO	3	2		1					2	2	2	3	3	2	1
			Avg 3.5.8.1	3	1	2	1	1				2	1	2	2	3	2	1
			3.5.8.2	3	2	2	3	2				1		3	2	3	1	1
24	IT- 508	Minor Project- I	3.5.8.3	3	3	2	3	3	1			2	2	2	2	3	1	2
	500	÷	CO	2	2	2	2	2	1			2	2	2	2	3	1	1
			Avg	5	2		2	-	1			2	-	2				
					2		SEI	MEST	ER -	VI	_							
	i i		3.6.1.1	1	3	3	1									1	3	
	- 1		3.6.1.2	2	3	3	2						_			2	3	
	IT-	Computer	3.6.1.3	2	3	3	1									2	3	
25	601	Graphics & Multimedia	3.6.1.4	1	3	3	2									1	3	_
			3.6.1.5	1	1	2	1									1	2	
			CO Avg	1.4	2.6	2.8	1.4									1.4	2.8	
			3.6.2.1	3	2											3	2	
			3.6.2.2	2	2	3	3					1		2	1	2	3	1
	IT-	Wireless and	3.6.2.3	3		3										3	3	
26	602	Mobile	3.6.2.4	2	2	1	2				+	1	1			2	2	1
		Computing	3.6.2.5	3	1											3	1	
		-	CO Avg	2.6	1.75	2.33	2.5					1	1	2	1	2.6	2.2	1
			3.6.3.1	3			-									3		
			3.6.3.2	3	3	2										3	3	
	IT-	Compiler	3.6.3.3	3	3	2										3	3	
27	603	Design	3.6.3.4	3	3	2	2									3	3	
			3.6.3.5	3	3	2	2									3	3	
			CO Avg	3	3	2	2									3	3	
			3.6.4.1	3	2											3	2	
			3.6.4.2	2	1	2	3									2	3	
	IT	Software	3.6.4.3	3	2	1					1	2	1	3	. V.	3 .	3	2
28	604	Engineering	3.6.4.4	3	1		2			1	1	3	2	3	1	3	3	3
			3.6.4.5	2		1	3						2	1	2	2	3	2
	1		CO Avg	2.6	1.5	1.33	2.67			1	1	2.5	1.67	2.33	1.5	2.6	2.8	2.33
29			3.6.5.1	1	3	100	e an	-								1	3	



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						ш.	Istitu	ιe				·						
			3.6.5.2	3	3		1						1			3	3	1
			3.6.5.3	2	2		3			•						2	3	
	IT-	Programming	3.6.5.4	3	1	2	3				1	2	1	3		3	3	2
	605	in Python	3.6.5.5	2	2	1	2				1		1			2	2	1
			CO Avg	2.2	2.2	1.5	2.25				1	2	1	3		2.2	2.8	1.33
			3.6.6.1	2	1		1							1		2	1	
			3.6.6.2	2	1	3	3			1	2	1		2		2	3	2
	п	Android	3.6.6.3	3	1	2						2		3	1	3	3	2
30	606	Programming	3.6.6.4	3	2	2	3					3	1	2	1	3	3	3
			3.6.6.5	2	1	2	2									2	2	
			CO Avg	2.4	1.2	2.25	2.25			1	2	2	1	2	1	2.4	2.4	2.33
		- 64 	3.6.7.1	3	1							2		2		3		
			3.6.7.2	3	2		1			2		2		1		3	1	
	IT		3.6.7.3	3			1									3	1	
31	607	Internship-III	3.6.7.4	3	2		1					2		1		3	2	
			3.6.7.5	3	2								2	3	3	3	2	1
			CO Avg	3	2		1 🛒	Đ.				2	2	2	3	3	2	1
			3.6.8.1	3	1	2	1	1				2	1	2	2	3	2	1
	IT		3.6.8.2	3	2	2	3	2				1		3	2	3	1	1
32	608	Minor Project II	3.6.8.3	3	3	2	3	3	1			2	2	2	2	3	1	2
			CO Avg	3	2	2	2	2	1			2	2	2	2	3	1	1
							SEN	ЛЕST	ER -	VII								
	-		4.7.1.1	3	1		2									3	2	
			4.7.1.2	2	1											2	1	
	IT-		4.7.1.3	3	2								1	2		3	2	1
33	701	Soft Computing	4.7.1.4	3			3					1	1	2	1	3	3	1
			4.7.1.5	3	1	2	3					3		3	1	3	3	3
		2	CO Avg	2.8	1.25	2	2.67					2	1	2.33	1	2.8	2.2	1.67
			4.7.2.1	3	1											3	1	
			4.7.2.2	3	1		3					2	2	3	1	3	3	2
	IT-	Cloud	4.7.2.3	3	1		2		ÚÅ.			1		1		3	2	1
34	702	Computing	4.7.2.4	3	2	2	3					3	2	3	1	3	3	3
			4.7.2.5	3	1	2	3	1				1	2	2	2	3	3	2
			CO Avg	3	1.2	2	2.75	1				1.75	2	2.25	1.33	3	2.4	2
35			4.7.3.1	3	1	Cci	200	-				2	1 5	3	N	3	3	2





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2.6.2 - Attainment of Programme Outcomes	and Course Outcomes are Evaluated by the
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						In	istitu	te										_
			4.7.3.2	3	2		1					2		2	2	3	2	2
			4.7.3.3	3	3		2			•		1		3		3	3	1
	IT-	Internet of	4.7.3.4	2	1		2	1					1	2	1	2	2	1
	703	Things	4.7.3.5	3	2	2	2	1				3	2	3	2	3	3	3
			CO Avg	2.8	1.8	2	1.8	1				2	1.33	2.6	1.5	2.8	2.6	1.8
			4.7.4.1	3	1		2	3				2		1		3	3	2
			4.7.4.2	3	2	3	1					1	1	3	1	3	3	1
	IT	Cloud	4.7.4.3	2	3		2			te=		1	2	3		2	3	2
36	704	Computing Lab	4.7.4.4	3	2		3					2	1	2		3	3	2
			4.7.4.5	3	1		2							3	1	3	3	
			CO Avg	2.8	1.8	3	2	3				1.5	1.33	2.4	1	2.8	3	1.75
			4.7.5.1	3	2	2	3	1			2	3	2	3	1	3	2	1
			4.7.5.2	3	2	3	3	2	2		1	3	2	2	3	3	2	3
	IT		4.7.5.3	3	2	1	2	2			1	3	1	2	2	3	1	2
37	706	Major Project-I	4.7.5.4	3	1	2	3	2	1		2	2	2	1	2	3	2	2
			4.7.5.5	3	1	3	3	3	1		1	3	2	3	3	3	2	3
			CO Avg	3	2	2	3	2	1		2	3	2	2	2	3	2	2
			4.7.6.1	3	1							2		2		3		
			4.7.6.2	3	2		1	0				2		1		3	1	
	IT-	Evaluation of	4.7.6.3	3			1									3	1	
38	607	Internship -III	4.7.6.4	3	2		1					2		1		3	2	
			4.7.6.5	3	2								2	3	3	3	2	1
			CO Avg	3	2		1					2	2	2	3	3	2	1
							SEN	1EST	ER - `	VIII								
			4.8.1.1	3	2						1	2		3		3	3	2
			4.8.1.2	3	1		1					3	2	3	L	3	3	3
	IT-	Information	4.8.1.3	3	3		2					3		2		3	3	3
39	801	Security	4.8.1.4	3	2	2	2			1	1	2	1	3		3	3	2
			4.8.1.5	3	1	3										3	3	
			CO Avg	3	1.8	2.5	1.67				1	2.5	1.5	2.75		3	3	2.5
			4.8.2.1	3	2											3	2	
			4.8.2.2	3	1		2					2		3	2	3	3	2
40	IT- 802	Machine Learning	4.8.2.3	3	1		3					1	1	1		3	3	1
		2 - Willing	4.8.2.4	3	2	3	ton					2		2		3	3	2
			4.8.2.5	3	301	CION I	2 30	2				3		2	2	3	3	3

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						L1	istiti	ite										
			CO Avg	3	1.8	3	2	2				2	1	2	2	3	2.8	2
			4.8.3.1	3	2	2	2					1		2		3	2	1
			4.8.3.2	3	2	1						2	1	3	1	3	3	2
	IT	Denallal	4.8.3.3	3	1	1 A	1							2	1	3	2	
41	803	Computing	4.8.3.4	3		3					1	1	1	3	1	3	3	1
			4.8.3.5	3		3	2					2		2	1	3	3	2
			CO Avg	3.0	1.7	2.3	1.7				1.0	1.5	1.0	2.4	1.0	3.0	2.6	1.5
			4.8.4.1	3	2											3	2	
			4.8.4.2	3	1		2					2		3	2	3	3	2
		Machine	4.8.4.3	3	1		3					1	1	1		3	3	1
42	804	Learning Lab	4.8.4.4	3	2	3	1					2		2		3	3	2
			4.8.4.5	3	3		2	2				3		2	2	3	3	3
			CO Avg	3	1.8	3	2	2				2	1	2	2	3	2.8	2
			4.8.5.1	3	2	2	3	1			2	3	2	3	1	3	2	1
			4.8.5.2	3	2	3	3	2	2		1	3	2	2	3	3	2	3
	IT-	Major Project-	4.8.5.3	3	2	1	2	2				3	1	2	2	3	1	2
43	805	II	4.8.5.4	3	1	2	3	2	1		2	2	2	1	2	3	2	2
			4.8.5.5	3	1	3	3	3	1	1	1	3	2	3	3	3	2	3
			CO Avg	3.0	1.6	2.2	2.8	2.0	1.3		1.5	2.8	1.8	2.2	2.2	3.0	1.8	2.2

2.6.2 – Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

Department of Internet of Things and Cyber Security including Block Chain Technology: Course Outcomes Descriptions:

S. No.	Univ. Subject Code	Subject Name	со	CO Description
		-	2.3.1.1	Understanding the process and scope of Communication, Relevance, & Importance of Communication in a Globalized world
	10.001	Technical	2.3.1.2	Learn about Verbal & Non-verbal Communication, Classification of NVC, Barriers to Communication, Communicating Globally, Culture and Communication
	18 301	Communication	2.3.1.3	Understand the value Audience-awareness, Voice, Vocabulary and Paralanguage, Group Discussion, Combating Nervousness, Speaking to one and to one thousand, Mock Presentations
			2.3.1.4	Preparing for interviews, assessing yourself, Drafting Effective Resume, Dress, decorum and Delivery techniques, Techniques

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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

			Ir	nstitute
				of handling interviews, Use of Nonverbals during Interviews, Handling turbulence during interviews
			2.3.1.5	Aware about Basics of grammar, common error in writing and speaking, Study of advanced grammar, Vocabulary, Pronunciation Etiquette, Syllables, Vowel sounds, Consonant sounds, Tone
			2.3.2.1	Construct simple mathematical proofs and possess the ability to verify them.
			2.3.2.2	Specify and manipulate basic mathematical objects such as sets, functions, and relations and will also be able to verify simple mathematical properties that these objects possess.
			2.3.2.3	skillful in expressing mathematical properties formally via the formal language of propositional logic and predicate logic.
2	IS 302	Discrete Structure	2.3.2.4	Acquire ability to describe computing problems with the help of graph theory and Finite state machines, also express its utility in solving and modeling real time problems.
			2.3.2.5	Apply basic counting techniques to solve combinatorial problem.
			CO Avgerage	
		Data Structure	2.3.3.1	Ability to analyze algorithms and algorithm correctness.
			2.3.3.2	Ability to summarize the use of stack and queue in real life applications.
			2.3.3.3	Ability to describe the use of tree.
3	IS 303		2.3.3.4	Ability to have knowledge of graphs concepts.
			2.3.3.5	Ability to summarize searching, sorting and hashing techniques.
			CO Avgerage	
			2.3.4.1	Understand key terms and concepts in information security and Cryptography and evaluate the cyber security needs of an organization
4		Introduction to Information Security	2.3.4.2	Acquire knowledge to secure computer systems, protect personal data, and secure computer networks in an organization
	IS 304		2.3.4.3	Apply knowledge of various encryption algorithms and authentication mechanisms to secure information in computer systems and networks
			2.3.4.4	Understand principles of web security to secure network by monitoring and analyzing the nature of attacks and design/develop security architecture for an organization.
i S	-		2.3.4.5	Design operational and strategic information security strategies and policies.
			CO Avgerage	
5	IS305		2.3.5.1	Understand the concept of number systems & binary arithmetic.
			191013	



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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

			Iı	nstitute
			2.3.5.2	To study the boolean algebra and minimization of switching function.
		54 -	2.3.5.3	Understand logic gates, universal gate, adders & subtractors.
		Object Oriented Programming & 2	2.3.5.4	Demonstrate linear wave shaping circuits, logic families, multiplexers and memory.
			2.3.5.5	Understand basic digital communication system.
			CO Avgerage	
			2.3.6.1	Student should be able to understand the basic concepts scripting and the contributions of scripting language
			2.3.6.2	Examine the core data structures like lists, dictionaries, tuples and sets in Python to store, process and sort the data.
6	19206	Computer Workshop:	2.3.6.3	Identify the external modules and import specific methods form them
0	15300	Python	2.3.6.4	Create, run and manipulate Python Programs using core data structures like Lists, Dictionaries and use Regular Expressions
			2.3.6.5	Interpret the concepts of GUI and WEB Programming as used in Python
		2	CO Avgerage	
		N	1.1.7.1	To display the utility of information and talent units obtained from the path and place of business withinside the assigned task function.
		Evaluation of Internship-I completed at I year level	1.1.7.2	Solve actual existence demanding situations withinside the path via way of means of analysing the area and choosing suitable ability units obtained from the path.
7	BT107		1.1.7.3	Exhibit important questioning and hassle fixing talents via way of means of analysing underlying issues to challenges.
			1.1.7.4	Demonstrate the capacity to harness assets with the aid of using analysing demanding situations and thinking about opportunities.
			1.1.7.5	Articulate profession alternatives via way of means of thinking about possibilities in company, sector, industry, expert and academic advancement.
			2.4.1.1	Understand mathematical tools for the numerical solutions algebraic and transcendental equations.
9			2.4.1.2	Describe mathematical knowledge to understand laplace transformation, inverse laplace transformation and fourier transform which are used in various branches of engineering.
	TO 401	Probability. Statistics	2.4.1.3	Work with mathematical tools available in statistics needed in various field of science and engineering.
	IS401	and Linear Algebra	2.4.1.4	Fulfill the needs of engineers to understand applications of numerical analysis, transform calculus and statistical techniques in order to acquire mathematical knowledge
			2.4.1:5	Solve wide range of practical problems appearing in different sections of science and engineering.
			CO Average	Science

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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

			lı	nstitute
			2.4.2.1	Understand Internet of Things and its hardware and software components.
			2.4.2.2	Interface I/O devices, sensors & communication modules.
10	18402	Fundamentals of IOT	2.4.2.3	Analyze data from various sources in real-time and take necessary actions in an intelligent fashion.
10	13402	i undamentaris or ro r	2.4.2.4	Remotely monitor data and control devices.
			2.4.2.5	Develop real life IoT based projects.
			CO Avgerage	
			2.4.3.1	Explain the role of operating system and its management policies and algorithm.
			2.4.3.2	Identify the process management policies and analyze and compare scheduling of processes by CPU along with memory management.
11	18403	Operating Systems	2.4.3.3	Identify process synchronization and coordination handled by operating system
	10.000	oportuning of sterios	2.4.3.4	Understand concepts of memory management including virtual memory
			2.4.3.5	Understand issues related to file system interface and implementation, disk management and Summarize the introduction to network, multiprocessor and distributed OS, and Elaborate on case studies for the same.
		Computer Organization& Architecture	2.4.4.1	Differentiate Analog and Digital Signal and types of signals.
			2.4.4.2	Understand the communication of information over the communication channel.
12	IS404		2.4.4.3	Understand how information signal of low frequency can be transmitted with the help of modulation techniques over a long distance.
			2.4.4.4	Differentiate different modulation techniques such as AM, SSB, DSB and FM.
			2.4.4.5	Explain using block diagrams, modulation and demodulation techniques for digital signal and determine bandwidth requirement.
			2.4.5.1	Characterise and appreciate computer networks from the viewpoint of components and from the viewpoint of services.
13		Computer Network	2.4.5.2	Display good understanding of the flow of a protocol in general and a network protocol in particular.
	15405		2.4.5.3	Model a problem or situation in terms of layering consent and map it to the TCP/IP stack.
	18405		2.4.5.4	Select the most suitable application layer protocol such as (HTTP, STTP, SMTP, DNS bit torrent) and as per the requirements of the network application and work with available tools to demonstrate the working of these protocols.
			2.4.5.5	Design a reliable data transfer protocol and incrementally and develop solutions for the requirements of transport layer.





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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

		-		Institute
			2.4.6.1	Understand the concepts of Java programming.
		Java Lab	2.4.6.2	Understand fundamentals of programming such as variables, conditional and iterative execution, methods, etc.
14 I	IS406		2.4.6.3	Understand fundamentals of object-oriented programming in Java and be familiar of the important concepts like class, inheritance and multithreading, AWT and JDBC.
			2.4.6.4	Use the Java SDK environment to create, debug and run Java programs.
			2.4.6.5	Develop Java applet.

Department of Mechanical Engineering : Course Descriptions

Sub Code	Subject Name	CO Description
		The Coursework is designed to provide students the opportunity to learn key concepts of Wave nature of particles and the Schrodinger equation.
		Student will able to understand the knowledge of Wave optics i.e. interference and diffraction.
BT-201	Engineering Physics	To introduce the idea of solids like semiconductors (P type and N Type semiconductors), Diodes and Hall effect. STudents will also be able to understand the basic concept of superconductivity.
		To develop the understanding of Lasers, fiber optics and their applications in field of engineering sciences.
		To provide you to basic understanding of Electrostatics in vacuum.
	Mathematics-I	To introduce the fallouts of Rolle's Theorem that is fundamental to application of analysis to Engineering problems.
		To introduce the idea of applying differential and integral calculus to notions of curvature and to improper integrals. Apart from some applications it gives a basic introduction on Beta and Gamma function
BT-102		To develop the tool of power series and Fourier series for learning advanced Engineering Mathematics.
		To familiarize the student with functions of several variables that is essential in most branches of engineering
		To develop the essential tool of matrices and linear algebra in a comprehensive manner.
BT-203	(e	Understand the properties of material, stress strain. Properties of alloys and cast iron.



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	Basic Mechanical Engineering	Institute
		Understand the concept measurement and machine tools their operations and their applications.
		Understand the concept of fluid flow , properties of fluid, Bernoulli's equation, Pascal's law.
		To Understand the concept of heat and temperature, law of thermodynamics, boilers and their mountings and accessories, basic Refrigeration cycles and its applications.
		To Understand the working of different cycles and 4 strokes, 2 stroke engines and their applications.
		Students will acquire the basic knowledge in different fields of civil engineering and materials used in construction.
	Basic Civil	Gain the ability to use modern survey equipment to measure angles and distances.
BT-204	Engineering &	Students will understand the basic of contour lines and map
	Mechanics	Students will have the ability to identify, formulate and solve engineering problems related to Engineering Mechanics: Statics
		Students will be able to analyse beam for shear force and bending moment.
	Basic - Computer Engineering	Able to understand the basic applications of computers in various fields, describe operating system, its role and functionalities and to apply concepts of MS word, MS power point, MS Excelefficiently.
		Discuss and apply simple algorithms for arithmetic and logical problems.
BT-205		Translate the algorithms to programs applyingobject-oriented concepts in C++ programming language.
		Understand basics of computer networks, OSI layers and protocols, E commerce applications, impact of securitythreats and attacks on networking systems and also security measures
		Understand the different method for representing and processing data and to get awareness about the impact of cloud computing, its various type of services.
		learners to develop good listening skills.
		Encourages learner to talk freely and lose their shyness when talking in front of the people
BT-206	Language Lab & Seminars	To develop the overall personality of the students by the practical activities
		Helps in confidence building, motivation to be more presentable and help in removing the stage fright
		Develops speaking, writing, reading, listening and presentation skills.



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2.6.2 – Attainment of Programme Outcomes and Course Outcomes are Evaluated by the Institute

	÷	Differentiate hard and soft water; solve the related numerical problems on water purification and its significance in industry and daily life.
		Select the lubricant for various purposes based on the type of Machines.
		Equipped with basic knowledge of polymer, methods of
BT-101	Engineering	polymerization and various industrial applications of polymers
	Chemisuy	Draw the Phase diagrams of one & amp; two component systems and causes, consequences and methods to minimize corrosion to improve industrial designs.
		Identify the structure of unknown/new compounds with the help of spectroscopy and understand periodic properties such as ionization potential, oxidation states and electro negativity
		To introduce effective mathematical tools for the solutions of ordinary and partial differential equations that model physical processes.
BT-202	Mathematics- II	To introduce the tools of differentiation and integration of functions of complex variable those are used in various techniques dealing engineering problems.
		To acquaint the student with mathematical tools available in vector calculus needed various field of science and engineering.
	English for Communicatio n	Effective use of verbal and non-verbal communication for enhanced soft skill beside enhanced reading comprehension as well
BT-103		Write the different kinds of letters, reports and technical writing.
		Apply basic rules of grammar in both written as well as oral communication.
	Basic Electrical &	To introduce the concept of Basics of DC electrical Network including network theorems.
BT-104		To introduce the concept of Basics of AC electrical Network(single phase & 3 phase)
	Engineering	To study of law of Electromagnetism, introduction of transformer.
		To study of various electrical Machines.
		To study Basic Concept Digital Electronics.
		Draw various types of scales, and curves.
		Draw orthographic projections of points & lines
	Engineering	Draw orthographic projections of Planes & Solids
BT-105	Graphics	Draw sections and development of solids including cylinders, cones, prisms and pyramids.
		Draw isometric views of Planes and Solids, Drawing using AUTOCAD.
BT-106		Use hand and power tools for different manufacturing processes





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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

Institute

	1.2.2	Operate machine tools while preparing any component
	Manufacturing Practices	Select the appropriate tools required for specific operation.
		Comprehend the safety measures required to be taken while using the tools.
		Prepare Foundry, Fitting, Carpentry, Welding and smithy Job.
		Demonstrate the application of knowledge and skill sets acquired from the course and workplace in the assigned job function/s
	Internship-I	Solve real life challenges in the workplace by analysing work environment and conditions, and selecting appropriate skill sets acquired from the course
BT-107	(60 Hrs Duration) at the Institute	Exhibit critical thinking and problem solving skills by analysing underlying issue/s to challenges
	level	Demonstrate appreciation and respect for diverse groups of professionals by engaging harmoniously with different company stakeholders
		Exhibit professional ethics by displaying positive disposition during internship
	Swachh Bharat Summer	This course is to sensitize students about the socio-cultural aspects of the rural areas parochial to their colleges.
		Students are expected to observe, investigate and learn about the following aspects of the rural region: i. Demographics, Literacy, Geographical parameters of the Village; ii. Schemes of government of India and State of Madhya Pradesh in operation in the villages.
BT-108	Internship Unnat Bharat	To enhance critical thinking by making them participate in social activities and imbibe human values among them.
	Abniyan (100Hrs)/ Rural	Rural Swachh Bharat Abhiyan is to promote cleanliness and develop healthy habits in people in villages.
	Outreach	Unnat Bharat Abhiyan: To build an understanding of the development agenda within institutes of Higher Education and an institutional capacity and training relevant to national needs, especially those of rural India.
	Mathematics- III	To determine the root finding techniques which can be used to solve practical engineering problems also demonstrate the use of interpolation methods to find intermediate values in given graphical and/or tabulated data.
BT 301		Apply the concept of numerical analysis to find the relative strengths and weaknesses of each computation method and know which are most applicable for given problem also will be able to approximate and analysis the errors obtained in the numerical solution of equations, ordinary, partial differential equations and simultaneous equations as well.





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2.6.2 – Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

		Institute
		To apply the analytical technique to express periodic function as a Fourier series and acquire the concepts of Laplace transformation & inverse Laplace Transform with its property
		To solve Partial Differential equation and Ordinary Differential Equation with given boundary conditions which is helpful in all engineering & research work.
		Apply the concept of a random variable, probability distribution and their application in diversified fields.
		Apply conservation principles (mass and energy) to evaluate the performance of simple engineering systems and cycles
		Evaluate thermodynamic properties of simple homogeneous substances
ME302	Thermodynam ics	Analyze processes and cycles using the second law of thermodynamics to determine maximum efficiency and performance
		Discuss the physical relevance of the numerical values for the solutions to specific engineering problems
		Critically evaluate the validity of the numerical solutions for specific engineering problems
	Materials Technology	Understand the crystal structure and classification of materials.
		Understand methods of determining mechanical properties and their suitability for applications.
ME303		Understand Mechanical behavior of metals and alloys, Tensile & compressive stress-strain
		Understand Iron carbon diagram, time temperature transformation etc.
		Understand Non destructive testing, alloty study with heat treatment process.
	Strength of Material	To define direct normal stress and direct shear stress and compute their values.
		able to calculate shear stress distribution in solid and hollow round members under Torsional loading conditions.
ME304		Able to calculate bending stress and shear stress at any location along the beam. Calculate maximum bending stress and maximum shear stress.
		Able to use different theories of failure in different loading condition
		able to develop an understanding of analytic methods used in connection with the structural design of columns, long mechanical members under compression.
		Students will be able to understand concepts of casting Technology.
ME305	Manufacturing Process	Students will be able to understand mechanical working of metals.
		Students will be able to understand concepts of welding process



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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

	(Institute Students will be able to understand concept of forging methods
	The second second	Students will be able to understand concept of forging memous
		Students will be able to understand press working.
	1	To study the working of different types of high pressure bollers.
		To calculate different performance parameters of objects.
ME306	Thermal Engg Lab	To determine volumetric and isothermal efficiencies of a reciprocating an compressor.
		To study the working of different types of steam condensors.
		To analyse the exhaust gas using ORSAT apparatus.
		Demonstrate the application of knowledge and skill sets acquired from the course and workplace in the assigned job function/s
	Evaluation of Internship- I	Solve real life challenges in the workplace by analysing work environment and conditions, and selecting appropriate skill sets acquired from the course
BT107		Exhibit critical thinking and problem solving skills by analysing underlying issue/s to challenges
	Completed at First Year Level	Demonstrate appreciation and respect for diverse groups of professionals by engaging harmoniously with different company stakeholders
		Exhibit professional ethics by displaying positive disposition during internship
		To learn about various types of energy resources.
	ENERGY &	To learn about Ecosystem.
EG (OI	ENVIRONME	To learn about Biodiversity and its conservation.
ES401	ENGINEERI	To learn about Causes, Effects and Control of Environmental Pollution.
		To learn about various social issues w.r.t. environment.
		To learn about different types of Instrument Systems & Measurement Techniques.
	NISTRUMEN	To know about various characteristics of measuring instrument.
ME402	TATION & CONTROL	To learn about measurement of different physical quantities like Temperature, Flow, Velocity & Pressure
		To learn about different mechanical measurement devices.
		To know about different types of control systems.
		To introduce the approaches used in kinematic and dynamic analysis of machinery.
	THEORY OF	To understand the various four bar mechanisms and applications.
ME403	MACHINES	To understand various types of gear and gear trains.
		To understand Cam & folloers working.
		To give basic knowledge on mechanical vibrations.





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2.6.2 – Attainment of Programme Outcomes and Course Outcomes are Evaluated by the Institute

		To understand the Newton's law of viscosity and able to explain the mechanics of fluids at rest and in motion by observing the fluid phenomena.
		Compute force of buoyancy on a partially or fully submerged body and able to analyze the stability of a floating body.
ME404	FLUID MECHANICS	To understand Euler's Equation of motion and Deduce Bernoulli's equation.
		To find energy losses in pipe transitions and to draw energy gradient lines.
		Evaluate pressure drop in pipe flow using Hagen-Poiseuille's equation for laminar flow in a pipe and distinguish the types of flows and Determine sonic velocity in a fluid.
		Upon completion of this course, the students will be able to understand and compare the functions and applications of different metal cutting tools
1.1.1.1	URING	Understand the basic concepts of gear machining
ME405	TECHNOLO	Understand the basic concepts of plastics and molding method
	GY	Understand the basic concepts of NTM
		The student will be able to write the programming to control and operate NC machines
1. A.	SOFTWARE LAB	To introduce different drawing softwares to students.
		To learn about Surface modelling its design & implementation in engineering applications.
ME406		To know about current developments in CAD.
		To learn about Solid modeling & its applications.
		To know about strategic plan of CAD system design.
		Exposure to Organizational skills and professional practices.
	90 hrs Internship	Efficiently completing tasks, fostering good relationship with seniors and subordinates
ME407	based on using	Improved Communication & interpersonal skills.
	software's –	Exposure to latest technology applications to the specific discipline.
	Internship -II	Identification of relevant problems in the industry and innovative solutions.
122.1		To understand different types, parts and working of IC Engines.
	14. G.D. T.	To learn in details the combustion process in Petrol Engines.
	Internal	To learn in details the combustion process in DieselEngines.
ME 501	Combustion Engines	To learn about different types of fuels and their properties used in IC Engines.
		To know about the concepts of Supercarging & Turbocharging of IC Engines





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2.6.2 – Attainment of Programme Outcomes and Course Outcomes are Evaluated by the Institute

		Understand the causes and effects of vibration in mechanical systems.
		Develop schematic models for physical systems and formulate governing equations of motion.
ME502	Mechanical Vibrations	Understand the role of damping, stiffness and inertia in mechanical systems
		Analyze rotating and reciprocating systems and compute critical speeds.
		Analyze and design machine supporting structures, vibration isolators and absorbers.
		To design and analyze the fundamental knowledge of dynamics of machines so that student can appreciate solve problems of dynamic force balance and transmissibility of forces.
		To calculate the balancing mass with analytical and graphical methods for rotary and reciprocating masses.
ME503(B)	Dynamics of Machines	To develop understanding of governor mechanism and its significance on engineering design.
		To develop understanding of dynamic balancing, flywheel analysis, gyroscopic forces and moments.
		To Draw Turning moment diagram for different internal combustion engine and able to design
	Industrial Engineering & Ergonomics	Able to use the Charts to record the activities of the people, materials and equipment to find alternative methods which minimize waste and to implement the best method.
		Able to apply the knowledge to eliminate unproductive activities under the control of the management, supervisor, worker and the design of products and processes
ME504 (A)		Able to implement &use the various job evaluation and incentive scheme for the smooth working of the workforce in industry.
		To Apply ergonomic concept to improve working conditions in various industrial environments.
		To estimate information associated with control display systems using information processing theory. Students will be able to evaluate audio, visual and tactile displays.
		Understand the concepts behind formulation methods in FEM.
	FEM/CFD	Identify the application and characteristics of FEA elements
ME505		To develop an understanding for the major theories, approaches and methodologies used in CFD
		Develop element characteristic equation and generation of global equation.





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2.0.2 - 1	Attainment of The	Institute
		Able to apply suitable boundary conditions to a global equation for bars, trusses, beams,
	16-5-5	circular shafts, heat transfer, fluid flow, axi symmetric and dynamic problems and solve them
		displacements, stress and strains induced.
		Basic understanding of python and installation
		understand the concept of control statement
ME506	Python	Understanding of searching algorithm
		Underatading of sorting algorithm
		Underatading of file handling
	Cost of	Demonstrate the application of knowledge and skill sets acquired from the course and workplace in the assigned job function/s
		Solve real life challenges in the workplace by analysing work environment and conditions, and selecting appropriate skill sets acquired from the course
ME507	Evaluation of Internship II	Exhibit critical thinking and problem solving skills by analysing underlying issue/s to challenges
		Demonstrate appreciation and respect for diverse groups of professionals by engaging harmoniously with different company stakeholders
		Exhibit professional ethics by displaying positive disposition during internship
100		Identify a topic in advanced areas of Mechanical Engineering.
	Minor Project	Review literature to identify gaps and define objectives & scope of the work.
ME508		Generate and implement innovative ideas for social benefit.
		Develop a prototypes/models, experimental set-up and software systems necessary to meet the objectives.
		Analyze the ruslts and evaluate the performance.
		To understand the working of high pressure boiler.
		To understand the vapour power cycles applied on thermal power plant.
ME601	NG AND	To understand the concepts of gas dynamics.
MILOUT	GAS	To understand the working of reciprocating air compressor.
	DYNAMICS	Analyze the flow through varing area ducts with friction and heat transfer.
	MACHINE	Able to explain the theory behind the different phases of design process.
ME602	COMPONEN T DESIGN	Apply knowledge to design basic elements shaft, keys and couplings.
WIE002		Apply knowledge to design springs and power screws.
		Design clutches and brakes depending on need.

2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the





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	9.1	Design and analyze rolling contact or journal bearing.
	DEPARTME	Apply thermodynamic concepts to analyze turbo machines
		Analyze impulse and reaction steam turbo machines for energy transfer.
ME603(A	NT	Analyze hydro turbo machines for energy transfer.
)	ELECTIVE (Turbo- Machinery)	Analyze different types of fans, blowers and compressors for energy transfer.
		General theory and working of different power transmitting turbo machines.
		To explain in detail about solar energy & its utilization.
	OPEN	To explain in detail about wind energy & its utilization.
ME604(C	ELECTIVE	To learn about production and application of Biomass.
)	(Renewable Energy	To understand different types, parts and working of Hydro Power Systems.
		To explain in detail about geo thermal energy & its utilization.
1.1		Understand geometric transformation techniques in CAD.
		Develop models to represent curves and surfaces.
ME605	CAD LAB	Develop programs to manufacture industrial components
		Devlopment of 3d part nd part
		Simulation study
	RDBMS	To learn about normalization and its different forms.
		To learn about query processing & optimization technique.
1 17 101		To understand the usage of backup recovery feature of database.
ME606		Study and usage of object or object oriented relational database management software (Oracle).
		Creating and use web database in PHP
		Exposure to Organizational skills and professional practices.
		Efficiently completing tasks, fostering good relationship with seniors and subordinates
ME607	INTERNSHIP	Improved Communication & interpersonal skills.
	III	Exposure to latest technology applications to the specific discipline.
		Identification of relevant problems in the industry and innovative solutions.
		Identify problem in area of Mechanical Engineering which requires further investigation.
	MINOR PROJECT II	Identify the methods and materials required for the project work.
ME608		Manage the work with team members.
		Formulate and implement innovative ideas for social and environmental benefits.



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2.6.2 – Attainment of Programme Outcomes and Course Outcomes are Evaluated by the Institute

		Analyze the results to come out with solutions related to the project work.
		Know about the basic concept of heat transfer and its modes. Mechanism of Steady State Conduction.
		Learn about the Transient Heat Conduction and its applications.
ME701	Heat and Mass	Learn about Convective Heat Transfer.
	Transfer	Understand the working principle and types of heat exchangers. And learn about Boiling & Condensation.
		Understand the concept of Radiative Heat Transfer, mass transfer.
		Understand the concept of belt, chain and rope drive and their design process
	DEPARIME	Able to design spur and helical gears.
1 (F. 700 D	ELECTIVE	Able to design of bevel gears.
ME/02 D	Advance Machine	Able to design I C engine components such as pystion, cylinder and connecting rod
	Design	Able to design componets like joints, couplings, pressure vessels and power screw.
		Formulate and solve linear programming problems
	OPEN	Determine optimum solution to transportation problem
ME703A	ELECTIVE O peration Research and Supply Chain	Determine average queue length and waiting times of queuing models.
		Determine optimum inventory and cost in inventory models.
		Understand the decision phases and apply competitive & supply chain strategies
	CAD/CAM/CI M	Students will be able to produce CAD drawings which communicate the appropriate manufacturing details, standards, and specifications
		Students will be able to generate NC code using G-codes & M-codes to machine parts to
		specifications.
ME704		Students will be able to set-up, program, and operate CNC milling and turning
		equipment
		Students will be able to Design Flexible manufacturing cell after carrying out Group technology study and finally creating FMS.
		Students will be able to apply knowledge about Computer Aided Quality control and Process Planning Control.
		To introduce MATLAB & R.
10000	MATLAB and	Download & Installation of MATLAB & R.
ME705	R Programming	In detail explanation of various MATLAB commands and functions.
		In detail explanation of various R commands and functions.



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		Examples & Case Studies on MATLAB & R Programming.
		Identify problem in area of Mechanical Engineering which requires further investigation.
		Identify the methods and materials required for the project work.
10000	Major Project-	Manage the work with team members.
ME/06	I	Formulate and implement innovative ideas for social and environmental benefits.
		Analyze the results to come out with solutions related to the project work.
		Demonstrate the application of knowledge and skill sets acquired from the course and workplace in the assigned job function/s
		Solve real life challenges in the workplace by analysing work environment and conditions, and selecting appropriate skill sets acquired from the course
ME607	Evaluation of Internship -III	Exhibit critical thinking and problem solving skills by analysing underlying issue/s to challenges
		Demonstrate appreciation and respect for diverse groups of professionals by engaging harmoniously with different company stakeholders
		Exhibit professional ethics by displaying positive disposition during internship
	REFRIGERA TION AND AIR CONDITIONI NG	Illustrate the fundamental principles and applications of refrigeration and air conditioning system
		Obtain cooling capacity and coefficient of performance by conducting test on vapour compression refrigeration systems and ice plant
ME801		Present the properties, applications and environmental issues of different refrigerants
		Calculate cooling load for air conditioning systems used for various conditions
		Operate and analyse the refrigeration and air conditioning systems.
	DEPARTME	Explain in detail about Chassis systems of an Automobile.
	NTAL	Explain in detail about steering systems of an Automobile.
ME802A	ELECTIVE	Explain in detail about transmission systems of an Automobile.
	LE	Explain in detail about suspension systems of an Automobile.
	ENGINEERI NG)	Explain in detail about Electrical, control systems and emission standards of an Automobile.
	OPEN	To learn about different system concepts.
MERCARC	ELECTIVE	To learn about different management concepts.
ME803C	(ENTREPRE NEURSHIP &	To learn about different marketing concepts. To know about basics of productivity & operations.





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	MANAGEME NT CONCEPTS)	To explain in detail Entrepreneurship.
		To understand the concepts of modelling.
	SIMULATIO	To understand the concepts of simulation.
ME804	N &	To model mechanical components using CATIA.
	LAB	To model mechanical components using ANSYS.
	LATE	To analyze modelled component using ANSYS.
ME805	MAJOR PROJECT II	Identify methods and materials to carry out experiments/develop code.
		Reorganize the procedures with a concern for society, environment and ethics.
		Analyze and discuss the results to draw valid conclusions.
		Prepare a report as per recommended format and defend the work.
		Explore the possibility of publishing papers in peer reviewed journals/conference proceedings.

Department of Civil Engineering : Course Outcomes Descriptions:

Sub Code	Subject Name	CO Discription
	Engineering Physics	The Coursework is designed to provide students the opportunity to learn key concepts of Wave nature of particles and the Schrodinger equation.
		Student will able to understand the knowledge of Wave optics i.e. interference and diffraction.
BT-201		To introduce the idea of solids like semiconductors (P type and N Type semiconductors), Diodes and Hall effect. STudents will also be able to understand the basic concept of superconductivity.
		To develop the understanding of Lasers, fiber optics and their applications in field of engineering sciences.
		To provide you to basic understanding of Electrostatics in vacuum.
BT-102	Mathematics-I	To introduce the fallouts of Rolle's Theorem that is fundamental to application of analysis to Engineering problems.
		To introduce the idea of applying differential and integral calculus to notions of curvature and to improper integrals. Apart from some applications it gives a basic introduction on Beta and Gamma function



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		To develop the tool of power series and Fourier series for learning advanced Engineering Mathematics.
		To familiarize the student with functions of several variables that is essential in most branches of engineering
		To develop the essential tool of matrices and linear algebra in a comprehensive manner.
	Basic Mechanical Engineering	Understand the properties of material, stress strain. Properties of alloys and cast iron.
		Understand the concept measurement and machine tools their operations and their applications.
BT-203		Understand the concept of fluid flow , properties of fluid, Bernoulli's equation, Pascal's law.
		To Understand the concept of heat and temperature, law of thermodynamics, boilers and their mountings and accessories, basic Refrigeration cycles and its applications.
		To Understand the working of different cycles and 4 strokes, 2 stroke engines and their applications.
BT-204	Basic Civil Engineering & Mechanics	Students will acquire the basic knowledge in different fields of civil engineering and materials used in construction.
		Gain the ability to use modern survey equipment to measure angles and distances.
		Students will understand the basic of contour lines and map
		Students will have the ability to identify, formulate and solve engineering problems related to Engineering Mechanics: Statics
m gr		Students will be able to analyse beam for shear force and bending moment.





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BT-205	Basic Computer Engineering	Able to understand the basic applications of computers in various fields, describe operating system, its role and functionalities and to apply concepts of MS word, MS power point, MS Excelefficiently.
		Discuss and apply simple algorithms for arithmetic and logical problems.
		Translate the algorithms to programs applyingobject-oriented concepts in C++ programming language.
		Understand basics of computer networks, OSI layers and protocols, E commerce applications, impact of securitythreats and attacks on networking systems and also security measures
		Understand the different method for representing and processing data and to get awareness about the impact of cloud computing, its various type of services.
	Language Lab & Seminars	learners to develop good listening skills.
		Encourages learner to talk freely and lose their shyness when talking in front of the people
BT-206		To develop the overall personality of the students by the practical activities
51-200		Helps in confidence building, motivation to be more presentable and help in removing the stage fright
		Develops speaking, writing, reading, listening and presentation skills.
BT-101	Engineering Chemistry	Differentiate hard and soft water; solve the related numerical problems on water purification and its significance in industry and daily life.
		Select the lubricant for various purposes based on the type of
1 s.r. 1		Machines.
geo. C		Equipped with basic knowledge of polymer , methods of \sum



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481		polymerization and various industrial applications of polymers
		Draw the Phase diagrams of one & amp; two component systems and causes, consequences and methods to minimize corrosion to improve industrial designs.
		Identify the structure of unknown/new compounds with the help of spectroscopy and understand periodic properties such as ionization potential, oxidation states and electro negativity
BT-202	Mathematics-II	To introduce effective mathematical tools for the solutions of ordinary and partial differential equations that model physical processes.
		To introduce the tools of differentiation and integration of functions of complex variable those are used in various techniques dealing engineering problems.
		To acquaint the student with mathematical tools available in vector calculus needed various field of science and engineering.
	English for Communication	Effective use of verbal and non-verbal communication for enhanced soft skill beside enhanced reading comprehension as well
BT-103		Write the different kinds of letters, reports and technical writing.
		Apply basic rules of grammar in both written as well as oral communication.
BT-104	Basic Electrical & Electronics Engineering	To introduce the concept of Basics of DC electrical Network including network theorems.
		To introduce the concept of Basics of AC electrical Network(single phase & 3 phase)
		To study of law of Electromagnetism, introduction of transformer.





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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

		Institute To study of various electrical Machines.
		To study Basic Concept Digital Electronics.
4		Draw various types of scales, and curves.
		Draw orthographic projections of points & lines
BT-105	Engineering	Draw orthographic projections of Planes & Solids
	Graphics	Draw sections and development of solids including cylinders, cones, prisms and pyramids.
		Draw isometric views of Planes and Solids, Drawing using AUTOCAD.
		Use hand and power tools for different manufacturing processes
	Manufacturing Practices	Operate machine tools while preparing any component
BT-106		Select the appropriate tools required for specific operation.
		Comprehend the safety measures required to be taken while using the tools.
		Prepare Foundry, Fitting, Carpentry, Welding and smithy Job.
BT-107	Internship-I (60 Hrs Duration) at the Institute level	Demonstrate the application of knowledge and skill sets acquired from the course and workplace in the assigned job function/s
		Solve real life challenges in the workplace by analysing work environment and conditions, and selecting appropriate skill sets acquired from the course
		Exhibit critical thinking and problem solving skills by analysing underlying issue/s to challenges
		Demonstrate appreciation and respect for diverse groups of professionals by engaging harmoniously with different company stakeholders





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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the Institute Exhibit professional ethics by displaying positive disposition during internship This course is to sensitize students about the socio-cultural aspects of the rural areas parochial to their colleges. Students are expected to observe, investigate and learn about the following aspects of the rural region: i. Demographics, Literacy, Geographical parameters of the Village; ii. Schemes of government of India and State of Madhya Pradesh in operation in the villages. Swachh Bharat Summer Internship Unnat BT-108 To enhance critical thinking by making them participate in social activities Bharat Abhiyan (100Hrs)/ Rural and imbibe human values among them. Outreach Rural Swachh Bharat Abhiyan is to promote cleanliness and develop healthy habits in people in villages. Unnat Bharat Abhiyan: To build an understanding of the development agenda within institutes of Higher Education and an institutional capacity and training relevant to national needs, especially those of rural India. To determine the root finding techniques which can be used to solve practical engineering problems also demonstrate the use of interpolation methods to find intermediate values in given graphical and/or tabulated data. BT301 Mathematics-III Apply the concept of numerical analysis to find the relative strengths and weaknesses of each computation method and know which are most applicable for given problem also will be able to approximate and analysis the errors obtained in the numerical solution of equations, ordinary, partial differential equations and simultaneous equations as well.





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2.6.2 – Attainment of Programme Outcomes and Course Outcomes are Evaluated by the Institute

		To apply the analytical technique to express periodic function as a Fourier series and acquire the concepts of Laplace transformation & amp; inverse Laplace Transform with its property to solve Partial Differential equation and Ordinary Differential Equation with given boundary conditions which is helpful in all engineering & amp; research work.
		Apply the concept of a random variable, probability distribution and their application in diversified fields.
		Understand the characteristics, occurrence, classification, uses of the various conventional building materials.
CE302	Construction Material	Understand the characteristics, classification, uses and defects of the various other useful building materials.
		Understand basic knowledge of types of floors and roofs and also the basic flooring and roofing material. Get the knowledge about the types of pipes using in sanitary works.
		Understand basic concepts of different types of paints and varnishes including composition, application on the different type of surfaces and types.
		Understand the characteristics, occurrence, classification, uses of the Miscellaneous building materials.
CE303	Surveying	To introduce the principle of surveying and also impart awareness on the various fields of surveying and types of instruments.
CESUS	Surveying	To understand the various methods of surveying and computations by using advanced surveying instruments this makes the surveying ease and rapid.



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2.6.2 – Attainment of Programme Outcomes and Course Outcomes are Evaluated by the Institute

		To understand the determination of heights, distances, angels and elevations with the help of latest surveying instruments and different methods of surveying.
		To understand the different types of curves and setting out methods of surveying.
		To give the knowledge of the hydrographic survey and photographic survey.
		The students able to understand and to draw various building components.
	Building Planning and Architecture	The students able to deals with the building planning, orientation and drawing.
CE304		The students able to understand and deals with building services.
		The students able to deals with the architectural design aspects.
		The students able to Representation of a building on Paper.
		Understand the stress and strain calculation and its importance for different materials.
		Understand the analysis of bending moments and stresses generated on a beam subject to different load conditions.
CE305	Strength of Material	Understand the importance of slope and deflection in a beam and to analyze it for different scenarios.
		Analyze the behavior of columns and struts under different loading conditions.
		Understand the determination of torsion on shafts and able to analyze the problems based on combined bending and torsion and also able to analyze unsymmetrical bending in beams.





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CE306	Study of Historical and Ancient Civil Engineering	Student will be able to understand study the various aspects of civil engineering practices in ancient structures.
		Student will be able to understand study with respect to civil engineering practices of historical structures.
BT107 BT307	Evaluation of Internship-I completed at I Year Level 90 hrs. Internship based on using various software's –Internship -II	Able to Integrate theory and practice
		Able to generate experience on various advance system and software.
		Able to do a different Engineering analysis
		Able to explain the analysis in front of audience
		Understand the importance of available tools and its lifelong learning process.
		Demonstrate the application of knowledge and skill sets acquired from the course and workplace in the assigned job function/s
		Solve real life challenges in the workplace by analysing work environment and conditions, and selecting appropriate skill sets acquired from the course
		Exhibit critical thinking and problem solving skills by analysing underlying issue/s to challenges
		Demonstrate appreciation and respect for diverse groups of professionals by engaging harmoniously with different company stakeholders
		Exhibit professional ethics by displaying positive disposition during internship
ES401	Energy & Environmental Engineering	The student will be able to understand the concept of energy, energy sources, transformation, efficiency and storage.
		The student will be able to understand the concept of ecosystem, its structure and function.





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		The students will able to understand the concept of biodiversity and its conservation.
		The students will able to understand the various types of environmental pollution, its effects and control measures.
		The student will able to understand sustainable and unsustainable development.
	Construction Technology	Student will be able to design features and construction methods of foundations.
		Students will be proficient in knowledge of pile foundations and design and construction features of different types of formworks and temporary structures.
CE402		Student will be able to design and construction of all types of walls and masonry and other technologies associated with them.
		Students will know about materials and methods used for construction of floors and roofs.
		Students will gain knowledge about planning and construction of earthquake resistant buildings.
CE403	Structural Analysis-I	Student will be able to design features and construction methods of foundations.
		Understand the characteristics, classification, uses and defects of the various other useful building materials
		Understand basic knowledge of types of floors and roofs and also the basic flooring and roofing material. Get the knowledge about the types of pipes using in sanitary works.
		Understand basic concepts of different types of paints and varnishes including composition, application on the different type of surfaces and types.
		Students will gain knowledge about planning and construction of earthquake resistant buildings.
CE404	Transportation Engineering-I	Understand the principles used in transportation and different transportation systems and their importance as well as understand different components of railways.
		Understand the analysis and design of stations, yards as well as signals used in railways.
		Understand the importance site selection criteria for bridge construction and will able to plan construction of bridges and their loading conditions.
		Will able to identify and choose foundations for different sites of bridges as well as analyze for their strength and testing under load conditions.





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		Understand the types and methods of surveys and alignments for tunnels and their construction process in different materials.
CE405		Understand the Geology Concept in civil engineering.
	Engineering Geology & Remote	Students are able to understand the mineralogy and crystallography structure.
		Students are able to classify the various types of Rock and its formation method.
		Understand the various terminology of structural geology and be able to understand the Geology report.
		Understand the role of geology in the design and construction Process of underground openings in rock and be able to understand the remote sensing application.
		Students will be able to undersated CAD and Auto Cad
		Students will be able to draw the commands used in the software.
		Students will be able to draw the basic geometric shapes.
CE406	Software Lab	Students will be able to understand 3-D Modelling with auto cad.
		Student will be able to Learn and practice Draw commands, Modify commands, Dimensioning, Annotating in AutoCAD and Drawing plan, section and elevation of 1 BHK house.
	90 hrs Internship based on using various software Internship-II	Demonstrate the application of knowledge and skill sets acquired from the course and workplace in the assigned job function/s
BT407		Solve real life challenges in the workplace by analysing work environment and conditions, and selecting appropriate skill sets acquired from the course Exhibit critical thinking and problem solving skills by analysing underlying issue/s to challenges
		Demonstrate appreciation and respect for diverse groups of professionals by engaging harmoniously with different company stakeholders
-178		Exhibit professional ethics by displaying positive disposition during internship
-		Analyze and evaluate the cyber security needs of an organization.
		Determine and analyze software vulnerabilities and security solutions to reduce the risk of exploitation.
-		Measure the performance and troubleshoot cyber security systems.
BT408	Cyber Security	Implement cyber security solutions and use of cyber security, information
		Comprehend and execute risk management processes, risk treatment methods, and key risk and performance indicators
CE-501	Fluid Mechanics I	Understand the basics of fluid flow and pressure in fluids at rest and also Analyze the condition of stability of a body in a fluid based on relative positions of its center of buoyancy and Meta Centre.
		Analyze the behavior of fluid at rest and in motion with concepts of fluid statics, kinematics and dynamics.





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5.2	12	Institute
		Apply Bernoulli's equation to fluid flow problems involving venturimeter, orifice meter, pitot tube, orifices, mouthpieces, notches and weirs.
		Analyze the flow through pipes and the major and minor energy losses.
		Understand basic concepts of model study are also developed along with laws of similarity and similitude.
CE- 502	Transportation Engineering II	Understand the basics of Highway alignment, able to find out the Stopping Sight distance. Overtaking Sight Distance and Extra Widening at curves.
		Understand the Seal Coat, Tack Coat, surface dressing. Also able to understand the flexible and rigid payment.
		Understand the Channelized and un-channelized intersection, rotary design elements and traffic lights design.
		Analyze the Runway Orientation, read the Wind Rose diagram, able to apply the runway length correction.
		Understand the threshold lighting, taxiway lighting, and traffic control equipment like ILS- Instrument Landing System, PAR- Precision Approach Radar
	Departmental Elective – Quantitative Surveying and Costing	Students understood the purpose, importance and types of estimates.
		Students are able to analyze the rates of various items of work.
CE - 503		Students learned to prepare the estimates of various types of construction works
		Students gained the knowledge of all the terms, rules and regulations of estimating.
		Students understood the purpose, importance and methods of valuation.
CE - 504	Open Elective- Urban Town and Planning	Students will be able to understand planning process of an urban area & surveys conducted for urban development and designing in relation with spatial organization, utility, demand of the area and supply considering future growth of an urban area.
		Students shall know about Urban Planning agencies and their functions. Also public participation in planning, development control regulations, sustainability, components of sustainable urban and regional development and emerging concepts for city.
		Students will gain complete knowledge about town and country planning act, building bye-laws, elements of city planning, landscaping and urban planning standards.
		Students shall know about traffic transportation systems and management for urban roads considering Legal issues in planning and professional practice for preparation of DPR.
		Students will be able to understand types of development plans and Water Supply & sanitation for urban areas, planning agencies and their purpose.
		Students are able to prepare detailed estimates of buildings.





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24	2	Institute
CE - 505	Quantity surveying & Costing Lab	Students are able to prepare the detailed estimate for services of plumbing and water supply or Electrification work
		Students are able to prepare the detailed estimate for earth work for the road construction or arched culvert.
		Students are able to learn the analysis of rates of various items of work
		Students are able to learn preparation of DPR of Civil Engineering Project
CE - 506	Material Testing Lab	Students able to apply and understand the significance of various type of Cement Test
		Students able to apply and understand the significance of various type of Aggregate Test
		Students able to apply and understand the significance of various type of workability Test of Concrete
		Students able to apply the Mix Design of Concrete
		Students able to apply and understand the significance of various type of Concrete Test
		Able to Integrate theory and practice of Civil Engineering
	Evaluation of Internship-II	Able to generate experience on various advance system and software of Civil Engineering
CE-507		Able to do a different Civil Engineering analysis
CL-307		Able to explain the analysis in front of audience
		Understand the importance of available tools and its lifelong learning process.
a g	Field Visit, Case Study and Seminar	Introspect & develop a planned approach towards his career & life in general.
CE		Have clarity on his career exploration process and to match his skills and interests with a chosen career path.
CE - 508		Explain the use of functional and chronological resume.
500		Develop thinking ability and polish his expression in group discussions.
		Be prepared for the personal interview through mock interviews while being aware of the various kinds of interviews
		Students understood the purpose, importance of design and Basic Principles of Structural Design.
2.1		Students are understood that how to analyze and Design the Beams.
CE601	and Drawing	Students understood that how to analyze and Design the slab.
	and Drawing	Students understood that how to analyze and Design the column and footing.
		Students understood that how to Design the Staircases.
CE 602	Environmental Engineering I	Students will be able to understand Estimation of Water Quality and Population forecasting.
		Students shall know about design of Sewer for waste-water.
		Students will gain complete knowledge Quality of water and Wastewater and its analysis.




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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

		Institute Students shall know about Treatment methods and design of water treatment units
		Students will be able to understand Wastewater Treatment Technologies and waste water treatment units
	Departmental	The student will be able to understand the concept of irrigation along with different types of irrigation schemes. The concepts of soil water plant relationship along with crop water requirement are also developed.
= e		The student will be able to understand the concept of ground water and well irrigation.
CE 603	Elective-Water Resource Engineering	The students will able to do assessment of available water and hydrologic analysis including precipitation analysis, rainfall Runoff process, and design flood estimation along with hydrograph analysis.
		The students will able to do detailed design of canal and other canal structures.
5.1.5		The student will able to estimate the flood by various methods.
		Understand the basic concept of turbulent flow, could be able to design pipe network and analyze the problems based on pipe flow
	Open Elective- Fluid Mechanics- II	Analyze the behavior of fluid in open channel during Uniform flow and also able to design open channel for such condition
CE 604		Analyze the behavior of fluid in open channel during Non – Uniform flow and also able to design open channel for such condition.
		Analyze the various immersed bodies.
		Understand basic concepts of Fluid machines and design, characteristics of turbines and pumps.
	Advance surveying lab	Students able to understand the various Advance Surveying Tools
		Students able to analyse leveling work
CE 605		Students able to survey a field by Traversing
1. J.		Students understand the significance of surveying
		Students able to work on a surveying instrument on construction site
CE 606	Non Destructive	Student will be able to examine the Soundness and Strength of Structural components by study of Rebound Hammer Test.
	Testing Lab	Student will be able to examine the Compactness, homogeneity and air voids of an existing structure by study of UPV Test.
CE 607	Internship-III	Able to Integrate theory and practice of Civil Engineering
		Able to generate experience on various advance system and software of Civil Engineering
		Able to do a different Civil Engineering analysis
		Able to explain the analysis in front of audience







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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

9		Institute
		Understand the importance of available tools and its lifelong learning process.
		Introspect & develop a planned approach towards his career & life in Civil Engineering.
		Have clarity on his career exploration process and to match his skills and interests with a chosen career path.
CE 608	Minor Project II	Explain the use of functional and chronological resumes.
		Develop thinking ability and polish his expression in group discussions.
		Be prepared for the personal interview through mock interviews while being aware of Civil Engineering
		Understand the soil formation, terminologies of soil properties and there relation. Able to classify the type of soil.
	Geotechnical Engineering	Able to determine the coefficient of permeability and permeability of layered soil. Understand the application of flow net, quick condition and Laplace equation for two dimensional flow
CE - 701		Understand the Boussinesqs and Westergards theory, Newmarks influence chart for irregular areas. Understand the factors affecting the compaction of soil
		Understand the type of Consolidation of soil, Terzaghi's One Dimensional Consolidation theory and method of finding coefficient of consolidation
		Understand the type of Shear Stress test i.e., Direct Shear test, Triaxial test and Vane Shear test. Able to understand the mohr colomb shear strength envelope and failure envelope. Understand the soil stabilization
	1 - 1 - A -	Students will be able to understand theory and design of preliminary treatment units of waste-water treatment.
	Dependencentel	Students shall know about methods, theory and design of Biological Treatment of waste-water treatment
CE - 702	Departmental Elective- Environmental Engineering-II	Students will gain complete knowledge about Advanced Waste-water treatment methods.
102		Students shall know about Air pollution its classification and characterization and effects.
		Students will be able to understand meteorological aspects of Air pollution chemistry.
		Understand project characteristics and various stages of a project.
CE - 703	Open Elective- Project Management	Understand the conceptual clarity about project organization and feasibility analyses – Market, Technical, Financial and Economic.
		Analyze the learning and understand techniques for Project planning, scheduling and Execution Control
		Understand the contract management, Project Procurement and productivity.
		Understand the Documentation and Control are practiced in the industry.



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	Prestressed Concrete Structures Lab	Students able to fabricate caste and test prestressed concrete beam and slab for strength and deflection behaviour.
CE - 704		Students able to fabricate caste and test prestressed concrete beam and slab with different layout of cable for strength and deflection behaviour.
10 10		Students are able to fabricate the different prestressed structure
		Explain what Internet of Things is.
		Describe key technologies in Internet of Things and RFID.
		Understand Principles for Web Connectivity and Communication Protocols
CE 705	IoT Lab	Explain Wireless Sensor Network Technology and Sensor data Communication Protocols.
		Understand smart city streetlights control & monitoring and Business models for the Internet of Things
		Introspect & develop a planned approach towards his career & life in Civil Engineering.
	Major Project-I	Have clarity on his career exploration process and to match his skills and interests with a chosen career path.
CE - 706		Explain the use of functional and chronological resumes.
		Develop thinking ability and polish his expression in group discussions.
		Be prepared for the personal interview through mock interviews while being aware of Civil Engineering
	Evaluation of Internship -III	Able to Integrate theory and practice of Civil Engineering
		Able to generate experience on various advance system and software of Civil Engineering
CE -		Able to do a different Civil Engineering analysis
/0/		Able to explain the analysis in front of audience
		Understand the importance of available tools and its lifelong learning process.
		Student are able to understand the Structural Design and Connection Design
1 Th. 11		Students are able to design Compression and Tension member
CE-801	Design of Steel	Students are able to design Flexural member
	Structures	Students are able to design Column and Column Bases
		Students are able to Design Industrial Buildings
CE - 802	Departmental Elective-	Students will be able to understand Selection of foundation and Sub-soil exploration/investigation
		Students shall know about design and analysis of Shallow Foundation.





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ngkar -	Foundation Engineering	Students will gain complete knowledge for design and analysis of Pile foundations.
		Students shall know about Foundations on problematic soil & Introduction to Geo-synthetics methods and technique.
		Students will be able to understand various earth pressure theories.
		Be familiar with terminology used in this area
CE -	Open Elective-	Explain what constitutes "Artificial" Intelligence and how to identify systems with Artificial Intelligence
803	Intelligence	Know how to build simple knowledge-based systems
		Have ability to apply knowledge representation, reasoning, and machine learning techniques to realworld problems
al a	Earthquake Resistant Structures	The students will be able to evaluate seismic forces for various structures as per relevant Indian standards
CE -		The students will be able to design and ductile detailing of structures for seismic resistance as per Indian standards
804		The students will be able to apply concepts of repair and rehabilitation of earthquake affected structures
		Introspect & develop a planned approach towards his career & life in Civil Engineering.
		Have clarity on his career exploration process and to match his skills and interests with a chosen career path.
CE 805	Major Project-II	Explain the use of functional and chronological resumes.
CL 005	Thayor Troject II	Develop thinking ability and polish his expression in group discussions.
		Be prepared for the personal interview through mock interviews while being aware of Civil Engineering

Department Of Electronics and Communications: Course Outcomes Descriptions

Sub Code	Sub Name	CO Descriptions
		To determine the root finding techniques which can be used to solve practical engineering problems also demonstrate the use of interpolation methods to find intermediate values in given graphical and/or tabulated data.
BT301	Mathematics- III	Apply the concept of numerical analysis to find the relative strengths and weaknesses of each computation method and know which are most applicable for given problem also will be able to approximate and analysis the errors obtained in the numerical solution of equations, ordinary, partial differential equations and simultaneous equations as well.



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		To apply the analytical technique to express periodic function as a Fourier series and acquire the concepts of Laplace transformation & amp; inverse Laplace Transform with its property to solve Partial Differential equation and Ordinary Differential Equation with given boundary conditions which is helpful in all engineering & amp; research work.
()- ()-		Apply the concept of a random variable,
		probability distribution and their application in
		diversified fields.
		Students will able to understand the concept of Measurement and error.
EC202	Electronic Measurement	Students will able to analyze and design different types of bridges used for measurement of Resistance, Inductance and capacitance.
EC302	& Instrumentation	Students will able to understand the operation of various instrumentation transducers.
		Students will able to understand the operation of various electronic instruments like CRO and Signal Generators.
		Students will able to understand the working of the digital measurement and instruments used in Instrumentation world.
EC303	Digital System Design	Design combinational circuit with the help of logic gates like adder subtractor and others.
		Design binary storage devices like flip-flops and other components.
		Design sequential circuits like Register & counters
		Design logic families and semiconductor memories and converters.
	Electronic Devices	Students will able to understand the general insight about Semiconductor Material Properties, compound semiconductor materials
DODA		Students will able to understand the various type of different diodes such as: Tunnel diodes, Varactor diodes, Schottky diode, Photo diodes, Photodetector, LED, solar cell.
EC304		Students will able to understand the Ideal and Practical diode, Clipper, Clamper.
		Students will able to understand the current components and equations, CB, CE and CC configuration, input and output characteristics.
		Students will able to understand amplifier and JFET construction.
		Graduates will be able to understand the basic circuit elements, circuit variables and Kirchhoff laws.
DODOS	Network	Graduates will be able to solve problems using mesh and node analysis.
EC305	Analysis	Graduates will be able to analyses circuits in Laplace domain
		Graduates will be able to understand the concept of two port networks
		Graduates can understand tuned circuits & resonance.
		Students will able to understand the concept of Measurement and error.
EC306	EMI Lab	Students will able to analyze and design different types of bridges used for measurement of Resistance, Inductance and capacitance.
20500		Students will able to understand the operation of various instrumentation transducers, science





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		Students will able to understand the operation of various electronic instruments like CRO and Signal Generators.
		Students will able to understand the working of the digital measurement and instruments used in Instrumentation world.
		Ability to be a multi-skilled engineer with good technical knowledge, management, leadership, social and environmental responsibility, and entrepreneurship skills.
	Evaluation of	Understand the usage of modern technologies & tools in the field of Electronics & Communication Engineering
BT107	Internship-I completed at I	Get the knowledge of energy carriers, energy technologies, energy challenges and energy system integration and environment sustainability.
	year level	Learn about the different types of ecosystems present in environment, ecological succession and energy flow in the ecosystem.
		Understand the value of biodiversity to human societies, threats to biodiversity, In-situ and Ex-situ conservation of biodiversity.
		Get the knowledge of energy carriers, energy technologies, energy challenges and energy system integration and environment sustainability.
ES401	Energy & Environmental Engineering	Learn about the different types of ecosystems present in environment, ecological succession and energy flow in the ecosystem.
		Understand the value of biodiversity to human societies, threats to biodiversity, In-situ and Ex-situ conservation of biodiversity.
		Acquire knowledge of different types of environmental pollution, its effects on life and its remedies
		Aware about the social issue related to the environment, environment ethics, protection and conservation acts for the environment
		Students will able to generate and characterize various continuous and discrete time signals.
EC402	Signals & Systems	Students will able to develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system
		Students will able to analyze the spectral characteristics of signals using Fourier analysis.
		Students will able to analyze DT systems & their realization using Z-transforms.
		Students will able to evaluate and analyse the reconstruction of signals.
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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

		Institute
EC403	Analog	Develop an understanding of the basic electronic communication process and use it for the solution of electronics-and communication engineering with signals
		Derive the mathematical models for analog modulation schemes ie for AM
20100	Communication	Derive the mathematical models for analog modulation schemes ie for FM
		Analyze and design transmitters & receivers.
		Analyze the effects of noise in continuous wave modulation systems.
		Students will able to develop an understanding of the basic control system and use it for the solution of electronics and communication engineering problems
		Students will able to derive the mathematical models for Time Response analysis and time-domain stability analysis.
EC404	Control System	Students will able to derive the mathematical models for Frequency Response analysis and Frequency-domain stability analysis.
		Students will able to derive and analyze system design problems
	а.,	Students will able to analyze state space problem and controllability and observability
	Analog Circuits	Students will able to understand the application of feedback and its types.
		Students will able to understand the basics of ICs and VLSI flow.
EC405		Students will able to understand the basic applications of OpAmp which are universally used.
		Students will able to understand the timer circuit and their IC configurations as multi-vibrators.
		Students will able to understand the various regulation ICs and their application and comparisons
	Simulation Lab	Design and simulate Basic Electronic circuits (examples rectifiers, clippers, clampers, diode, transistor characteristics etc).
FC406		Analyze Transient and steady state analysis of RL/ RC/ RLC circuits and realization of network theorems.
LC+00	Simulation Eab	Study of virtual instruments built in the software.
		Analyze circuit optimization
EC 501	Microprocessor & its Application	Students will be able to know about 8086 microprocessor addressing modes and pin description.
		Students will be able to know about 8086 microprocessor instruction set and their applications
		Students will be able to know about 8155, 8255, Interfacings key boards, LEDs, ADC, DAC and memory Interfacing





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2.6.2 – Attainment of Programme Outcomes and Course Outcomes are Evaluated by the Institute

		Students will be able to know about 8254 programmable interval timer, 8259A programmable interrupt controller & 8257 DMA controller.
		Students will be able to know about the microcontrollers (8051).
		Students can able to differentiate various sampling methods and pulse modulation schemes.
		Students can able to understand mathematical model, spectrum, advantages, disadvantages and application various Analog to Digital conversion methods.
EC 502	Digital Communication	Students can able to understand mathematical model, spectrum, advantages, disadvantages and application of various digital modulation schemes.
Q The	191	Students can able to understand probability of error and signal space representation of various digital modulation Schemes.
		Students can able to understand Information theory, Source coding and channel coding.
		Students will able to analyze and design different type of Symmetrical And Asymmetrical Network
	Departmental Elective (A) CNTI (B) Mobile Communication (C) Advanced Control system	Students will able to analyze and Design filter and Attenuators
EC 503		Students will able to analyze the line parameters and various losses in transmission lines.
		Students will able to apply smith chart for line parameter and impedance calculations
		Students will able to analyze and match Impedance
	Open Elective (A) EMT	Students will be able to apply vector calculus to understanding the Coloumbs law, Gauss law, electrostatic potential, and Laplace and Poisson equation boundary condition and be able to solve the electrostatic problem.
EC 504	(F) Entr (Electro Magnetic (Theory) (B) Computer System Organisation (C) Process Control Instrumentation	Students will be able to apply vector calculus to understand the Biosavert law, Ampere circuital law, Lorentz force inductance and be able to solve the magneto static problem.
		Students will be able to analyze the Maxwell's equations for electromagnetic fields.
		Students will be able to derive Electromagnetic wave equation and apply the Poynting expression.
		Students will be able to Understand the behavior of electromagnetic wave in different medium.
EC 505	CNTL Lab	Students will able to analyze and design different type of Symmetrical And Asymmetrical Network
		Students will able to analyze and Design filter and Attenuators





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2.6.2 – Attainment of Programme Outcomes and Course Outcomes are Evaluated by the Institute

	м Ш"	Students will able to analyze the line parameters and various losses in transmission lines.
		Students will able to apply smith chart for line parameter and impedance calculations
		Students will able to analyze and match Impedance
3	Matlab Programming	Understand the different toolbox in the MATLAB like, communication toolbox, control system toolbox, math toolbox, etc and also Understanding the programming in MATLAB which is based on the mentioned toolbox.
EC 506		Ability to be a multi-skilled engineer with good technical knowledge, management, leadership, social and environmental responsibility, and entrepreneurship skills.
EC 507 EC 508	Evaluation of Internship-II	Understand the usage of modern technologies & tools in the field of Electronics & Communication Engineering
	Minor Project 1	Identify and find solution to problems.
		Get awareness on design methodology using modern technologies, tools and systems and implementation real time.
	Digital Signal Processing	Apply communication, writing skills & Presentation skills
		Develop the team work and leadership skills with professional and ethical values.
EC-601		Students will able to understand the characteristics of continuous time and discrete-time signals and systems.
		Able to calculate Z-transforms for discrete time signals and system functions and also understand the relationship between poles, zeros, and stability.
		Analyze signals using the discrete Fourier series and discrete Fourier transform.
	Antenna & Wave propagation	The students will understand the basics of Fast Fourier Transform.
EC-602		Able to design Digital IIR/ FIR filters from Analog filters using various techniques.
		Student will be able to get detailed knowledge of antenna theory to form the field patterns.
		Student will be able to relate transmission and reception of antenna signal parameters.
		Student will be able to know the applications and various antenna types.
EC-603		Student will be able to understand the antenna arrays and synthesis of array pattern.





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2.6.2 – Attainment of Programme Outcomes and Course Outcomes are Evaluated by the Institute

	Departmental Elective (A) Data Communication (B) CMOS	Student will be able to work with models of Radio wave propagation affecting Communication Systems.
	Design (C) Satellite Communication	Students will able to understand all the terminologies related to Data Communication.
		Students will able to understand the Functions of each layer of OSI model and TCP/IP model.
		Students can understand the error correction and detection process at data link and transport layer. They can solve numerical based on this. Fraining and accesses control methods are also known to them
		Students can understand the frame size protocol details and architecture of ATM, SONET, X.25, frame relay and many more
	Open Elective (A)	Comparatively study on Repeaters, Bridges and Gateways.
	Microcontroller & Embedded system (B) Bio- medical Electronics (C) Power Electronics	Students will be able to know about 8051 interfacing.
EC-004		Students will be able to know about 8096 microcontroller
		Students will be able to know about basics of embedded system.
		Students will be able to know about Embedded architecture.
	Data Communication Lab	Students will be able to know about IO peripheral devices.
EC-605		Multiplexing Techniques, Line Coding Techniques and Serial and parallel transmissions will be known to students.
		Various transmission media, their comparison and specifications will be known to students.
		NIC, RS-232 MODEM etc. networking hardware will be understood.
	Microcontroller	Various topologies, LAN architectures and integrated services digital network will be known to students.
		Students will be able to understand the communication between 8051 with PC.
EC-606	& Embedded	Students will be able to Study of various bit manipulation of 8051.
	System Lab	Students will be able to do Programming of Timer and counter in 8051.
		Students will be able to understand the Programming in 8051 for sensor and actuator interfacing.



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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

		Institute
	-	Students will be able to understand the Programming implementation of 8051 with LCD interfacing
		Get awareness on design methodology using modern technologies, tools and systems and implementation real time.
	-	Apply communication, writing skills & Presentation skills
EC-701	VLSI Design	Develop the team work and leadership skills with professional and ethical values.
		Students will able to demonstrate a clear understanding of CMOS fabrication flow and technology scaling.
		Students will able to design MOSFET based logic circuit
	Departmental Elective (A) Microwave Engg. (B) Information Theory & Coding (C) Nano Electronics	Students will able to draw layout of a given logic circuit
EC-702		Students will able to demonstrate an understanding of working principle of operation of different types of memories.
		Students will able to demonstrate an understanding of working principles of clocking, power reduction and Distribution.
		Understand basic concepts and applications of microwave systems and Analyze different waveguide structures.
	 (A) Cellular Mobile Communication (B) Internet of Things (C) Probability Theory & Stochastic Processor 	Understand about Solid State Devices and Application of Various type of diodes, Transferred Electron Devices and Avalanche transit time devices.
		Understand microwave measurement.
EC-703		Identify of various types of Microwave electronic components.
LC-705		Solving complex RF & Microwave communication network design problems
		Understand in depth about Internet of things.
		Establish secure communication for his network for his devices connected in IOT.
	-	Store his data securely on cloud and access it when required
EC-704	Microwave Lab	Design web based application using various internet protocols and services
		Use sensor technology and RFID and wireless networking for maintaining privacy and security concern in smart city and housing environmental considerations.
		Understand basic concepts and applications of microwave systems and Analyze different waveguide structures.





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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the

3		Institute
8.0		Understand about Solid State Devices and Application of Various type of diodes, Transferred Electron Devices and Avalanche transit time devices.
		Understand microwave measurement.
EC-705	LO.T. Lab	Identify of various types of Microwave electronic components.
20.00		Solving complex RF & Microwave communication network design problems
1 Y _]		Students will be able to know about Arduino applications.
		Students will be able to know about connecting Arduino with ESP 8266.
A	18 - Yanasa	Students will be able to know about Sensor interfacing.
120	이번 이 전에서 말	Students will be able to know about connecting various protocols.
EC-706	Major Project-I	Students will be able to get and post request through HTTP protocols
		Identify the complex engineering problems relevant to the society and industry
		Apply modern technologies, tools and systems in the field of Electronics & Communication Engineering to analyze the identified problem
		Design and implement a viable solution to the problem.
EC-707	Evaluation of Internship -III	Apply communication, writing skills & Presentation skills
		Develop the team work and leadership skills with professional and ethical values.
		Ability to be a multi-skilled engineer with good technical knowledge, management, leadership, social and environmental responsibility, and entrepreneurship skills.
		Understand the usage of modern technologies & tools in the field of Electronics & Communication Engineering
		Understand Optical Fiber Communication System and its parameters.
EC 901	Optical Fibre	Analyze transmission characteristics of optical fiber
EC 801	Communication	Understand the construction and operation of various optical sources and detectors.
		Performance analysis of optical receivers and study of fiber joints
	Departmental	Brief introduction of optical fiber networks and amplifiers
EC 802	& Signal Processing (B)	Students will able to develop a basic understanding of A1 building blocks presented in intelligent agents.
	Wireless Communication	Students will able to choose an appropriate problem-solving method and knowledge representation technique.





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	(C) 5G Technology	Students will able to analyze the strength and weaknesses of AI approaches to knowledge-intensive problem-solving.
		Students will able to understand real time applications of Fourier transform.
		Students will able to describe discrete time systems in terms of difference equations.
	Open Elective	Understand the basic elements of digital image processing
EC 802	(A) Wireless Network (B)	Develop and analyze the algorithm for discrete Fourier transformations.
EC 805	Processing (C) Speech	Understand the concept of Image enhancement by analyzing different filtering
	Processing	techniques.
		Applying different models and techniques to understand the concept of image
	Advanced Communication	restoration
EC 804 EC 804	Engg. Lab Advanced	Analyze and implement different image encoding methods
	Engg. Lab	Understand the microwave signal measurement using VSWR and frequency meter and practical implementation of Microwave Communication Systems.
		Understand the design, application and practical implementation of various Digital Modulation techniques.
		Understand the various losses associated with OFC channel
	Maion Droiset	Understand the characteristics of various antenna and its coverage area
EC 805	II	Identify the complex engineering problems relevant to the society and industry
		Apply modern technologies, tools and systems in the field of Electronics & Communication Engineering to analyze the identified problem



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2.6.2 – Attainment of Programme Outcomes and Course Outcomes are Evaluated by the Institute

Sample of Direct Attainment

Direct Assessment	PO / PSO Average PO / PSO %	2.10 0.70	2.22 0.74	2.41 0.80	2.31 0.77	1.84 0.61	2.16 0.72	2.18 0.73	2.55 0.85	2.15 0.72	2.14 0.71	2.85 0.95	2.66 0.89	2.63 0.88	2.45 0.82	2.69 0.90	2.52 0.84
Direct																	
Assessment 80%	PO / PSO %	0.56	0.59	0.64	0.62	0.49	0.58	0.58	0.68	0.58	0.57	0.76	0.71	0.70	0.66	0.72	0.67

Sample Calculation for Indirect (20%) and Direct (80%)

Type of Feedback	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Course End Survey	80.65	78.95	78.95	78.85	79.25	78.25	81.4	79	81.1	82	81.25	81.7
Program End Survey								2				
Alumni Survey											1	
Average	80.65	78.95	78.95	78.85	79.25	78.25	81.4	79	81.1	82	81.25	81.7
Indirect Assessment	80.65	78.95	78.95	78.85	79.25	78.25	81.4	79	81.1	82	81.25	81.7
20% of Indirect Assessment	16.13	15.79	15.79	15.77	15.85	15.65	16.3	16	16.2	16.4	16.25	16.34
Direct Assessment	74.00	80.02	77.11	61.12	72.23	73.00	85.00	72.31	71.85	95.00	89.00	88.00
80% of Direct Assessment	59.2	64.02	61.69	48.9	57.78	58.4	68	58	57.5	76	71.2	70.4
PO Attainment for Session 2023-24	75.33	79.81	77.48	64.67	73.63	74.05	84.3	74	73.7	92.4	87.45	86.74

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Department of Information Technology : AY 2023-2024

Semester / Course End Survey including Curriculum Feedback

and the second behavior				
		COURSE WISE FEED BACK REPORTS		
		College HST +		
		Branch Brech IT -		
		Sem Ttt +		
		Session 2023-24 v		
		Generate		
		5%n		
		1 Ability to design and develop web-based solutions with effective graphical user interface for the nee	ed of sustainable development. 05.31 69.03	
		Ability to selve the social, cultural, ethical iscore with it scherados. Addition to work instructurally and as a member of leader in diverse teams	76.13	
		4 Assessment and marking have been fair	74,19	
		5 Broadly educated and will have understanding of ethical responsibilities.	71.61	
		6 Capability to example the software and IT based projects in multidisciplinary environments.	57.74	
		7 Capable of self-educate in case of technological change and to engage to independent inter one second sec	69.03	
		9 Demonstrate basic knowledge in mathematics, science, engineering, and humanities.	72,9	
		10 Demonstrate with excellent programming analytical logical and problem-solving skills.	73,55	
		13 Design and develop the computer-based systems.	68.39	
		12 Faculty has made the subject interesting	72,58	
		14 Three been able to context facely when I needed to	#1.94	
		15 Identify formulate and analyze the complex orgineering problems	76,13	
		15 Overall I am satisfied with the quality of the course	69,68	
		17 Overall rating of the program	75.48	
		18 Proficient enough to communicate effectively in both verbal and written corner 10 Date how challenging was the collabor offered to the counter	71,61	
		20 Rate the adequateness of the textbooks and reference books mentioned for the courses	64.52	
		21 Rate the appropriateness of the sequence of the success provided in the curriculum	70.32	
		22 Rate the depth of the syllabsis of the courses in relation to the conspetencies expected by industry/	CHITYIN FOUND STREAM 00.60	
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		1 Ability to design and develop web-based solutions with effective graphical user interface for the need of	Faustainable development, 62,73	
		2 Ability to solve the social, centural, edited increases with 17 solutions.	68.10	
		Ability to week individually doe as a minister of object in close a count Arrenament and marking have been fair	65.91	
		5 Broadty educated and will here suddepstanding of ethical responsibilities.	04.55	
		6 Capability to manage the software and IT travel projects in multidisciplicary environments.	63.10	
		7 Capable of self-educate in case of technological change and to engage in interpretation use your reacting.	67,73	
		9 Demonstrate batic knowledge in mathematics, trience, sugnosting, and humanifies.	69.69	
		10 Domonstrate with excellent programming, analytical logical and problem solving shifts.	67.73	
		11 Design and develop the computer based systems.	66.82	
		12 Faculty has made the conject intervening 13 Faculty is good at explaining things	66.14	
		14 There been able to cuitact faculty when I needed to	68,64	
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		25 Identify, formulate and analyze the complex engineering problems.	67.73	
		15 Elevantly, forevalue and analyze the complex engineering problem. 16 Overall Jam satisfied with the quality of the contin	67.73 70.45	
		Is a suffy formulate and analysis the complex engineering problems Overall Jan staffind with the quality of the control Overall entities of the program Overall entities of the program Problems Problems Problems Problems	67.73 70.45 70.45	20
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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the Institute

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		1	Ability to design and develop web-based solutions with effective gr	aplical user interface for the need of sustainable developmen	20 79 21			
		2	Ability to solve the social cultural, ethical issues with IT solutions.		19.37			
		1	Ability to work individually and as a member or leader in diverse to	eanor	79.37			
		4	Assessment and marking have upen fair	1944.44	77.94			
		15	Broadly effutated and will have understanding of efficial responses	enderate anvironments	20.21			
		l.	Capability to manage the sortware and 11 based projects in interna-	es in independent life-boar learning.	60.79			
			Course outromes are clear to most courses.		80.32			
		8	Demonstrate basic knowledge in mathematics, science, engineerin,	g, and humanities.	80.45			
		1	Demonstrate with excellent programming, analytical logical and p	enhlem-zativng skills-	79.52			
			2 Design and develop the computer based systems.	2,2,2,2,2,2,2,2,2,2,2,2,2,2,2,2,2,2,2,	80			
		5	Faculty has made the subject interesting		80.25			
		1	2 Feculty is enthusiantic about what is laught		76.1			
		1	4 Faculty is good at explaining things		82.22			
			5 I have been able to contact faculty when I needed to	have been able to contact faculty when I needed to 86,				
		1	6 Identify formulate and analyze the complex engineering problems	h- ; ;	61.11			
		1	7 Overall I am satisfied with the quality of the course		101.59			
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		1	 Proficient enough to communicate effectively in both secoal and w 	Filten forms	10,05			
		12	0 Rate how challenging was the syllabor offered by the courses	load for the course	80.63			
		12	1 Rate the adequateness of the textbooks and reference books ment	to the contribution	78.89			
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		6	Ability to design and develop web-based solutions with effective a	prophical user interface for the used of sustainable developme	nt. 82.05			
		1	Ability to solve the social, cultural, ethical issues with IT solutions		82.7			
		t	Ability to work individually and as a member or leader in diverse	teanis	79,05			
		1	Azsessment and marking have been fair		80.75			
		1	Broadly educated and will have understanding of ethical responsi	bilities.	80.48			
		1	Capability to manage the software and IT Based projects in multit	fisciplinary environments.	77,94			
		6	Capable of self-aducata in case of technological change and to eng	age in independent life-long fearning.	/9.37			
		1	Course outcomes are clear in most rournes.	A SHORE AND A S	20.12			
	9 Demonstrate basic knowledge in mathematics, science, engineering, and humatives. 79, 33. 00 01 77.							
		1	 Demonstrate with excellent programming, analytical logical and p 	browner-rewing center	82.05			
			1 Design and develop the computer-based systems.		78.1			
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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the Institute





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2.6.2 – Attainment of Programme Outcomes and Course Outcomes are Evaluated by the Institute

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			3 4 5 6 7 7 8 9 10 11 12 13 14 15 14 17 18 19 20 21 22	Alating to solve the orderal embrard, exhibit al issues with TF relevitions. Alating to solve the individually and a an amenitor or indexer in difference of Assessment and marking have been fau Draddy ethories that the solver and the Dasky Driventi in methods Capability to manage there is obview and IT Dasky Driventi in methods Capability to manage there solves and all Dasky Driventi in methods Capability to manage of each in most Concernse. Demonstrate with reactions of methodogical change and to engo Contras contennes are often in most Concernse. Demonstrate with reactions of methodogical solution of the Dering and develop the comparts backy of writes. Tarking has make the analysis of the method of writes. Tarking has make the analysis of the method of the course David part good of explaining though a Tarking has make and a always the the major is engineering problems. Develop the of the comparts backy of the reaction. Develop the order of a solve the the method of the course Orderell coming of the organism. Develop the course Develop the program. Tarking the commandical effectively in both webul and vie Tark the program.	exists illideae existencements. ge is independent Viel-long leakning. ge is independent Viel-long leakning. ge and humanities. robliem subving stills.	78.05 362.09 362.09 395.22 79.52 79.52 99.52 99.52 99.52 99.52 99.52 99.52 99.52 99.52 99.52 99.52 99.52 99.52 99.52 99.52 99.53 99.54 99.54 99.55		



Question

SNo

Feedback

Principal Indore Institute of Science and Technology, Indore



2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the Institute

		1	n	111	IV	v	VI	VII	VIII
	Ability to design and				-				
	develop web-based								
	solutions with								
	effective graphical								
	user interface for the								
	need of sustainable			1			1		
1	development.	65.81	62.73	79.21	82.06	81.8	81.8	81.56	78.99
	Ability to solve the								
	social, cultural, ethical								
	issues with IT								
$\lfloor 2 \rfloor$	solutions	69.03	63.18	79.37	82.7	77.7	77.7	80.16	80.39
	Ability to work								
	individually and as a							2.1	
2	member or leader in	76.12	(0.10		70.05	01 (4	01.64	70.50	00.40
	diverse teams	/0.13	08.18	80	/9.05	81.64	81.64	79.53	80.48
11	Assessment and marking have been								
4	fair	7/ 10	65.01	70 37	80.70	77 87	77 07	91.25	70.21
	Broadly educated and	74.17	03.91	19.51	00.79	//.0/	//.0/	01.23	79.31
	will have		<i>0</i> .	2					
	understanding of								
	ethical								
5	responsibilities.	71.61	64.55	77.94	80.48	79.67	79.67	79.69	79.52
	Capability to manage								
	the software and IT				122				
	Based projects in								
	multidisciplinary								
6	environments.	72.9	63.18	79.21	77.94	79.34	79.34	80	79.41
	Capable of self-								
	educate in case of	1							
	technological change								
	and to engage in								
-	Independent life-long	(774	(5.01	00 70	70.27	00.22	00.00	00.5	70.04
	Course outcomes are	07.74	05.91	80.79	/9.37	80.33	80.33	82.5	/9.26
8	clear in most courses	60.03	67 73	80.32	80.32	70.67	70.67	02.70	00 27
0	Demonstrate basic	09.05	07.75	80.52	80.52	79.07	/9.07	03.20	80.27
	knowledge in								
	mathematics, science								. CC
	engineering. and								<u></u>
9	humanities.	72.9	69.09	80.48	79.52	78.03	78.03	81.41	82.02
	Demonstrate with								32102
10	excellent	73.55	67.73	79.52	81.27	81.64	81.64	80.47	79.47





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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the Institute

	programming, analytical, logical and problem-solving skills.				•				
	Design and develop								
	the computer-based						70.0	77.00	00.22
11	systems.	70.32	66.36	80	82.06	78.2	/8.2	//.00	80.32
	Faculty has made the	(0.00	((02	00.16	70 1	01 21	01 21	70.22	81.01
12	subject interesting	68.39	66.82	80.16	/8.1	81.31	01.51	19.22	01.01
12	Faculty is good at	72 58	66.14	82.22	77 78	80	80	79.22	81.34
13	Explaining things	12.30	00.14	02.22	77.70	00	00	17.22	01.01
	contact faculty when I		- 30					n mi S	
14	needed to	81.94	68.64	80.95	80.48	77.7	77.7	83.28	79.63
17	Identify, formulate	01121	00101						
	and analyze the					1			
	complex engineering								
15	problems.	76.13	62.73	81.11	80.16	77.21	77.21	80	79.79
	Overall I am satisfied								
	with the quality of the								
16	course	69.68	67.73	81.59	80.95	81.48	81.48	81.72	80.05
	Overall rating of the					70.50	70.50	70.00	70.15
17	program	71.61	70.45	77.94	79.05	78.52	78.52	/8.28	/9.15
	Proficient enough to								
	communicate								
	effectively in both				25				
10	formed	75 18	70.45	78 80	79.68	79.02	79.02	80.16	79.95
18	Pate how challenging	75.40	70.45	70.07	79.00	79.02	19.02	00110	1,51,50
	was the syllabus								
19	offered by the courses	71.61	68.18	80	81.11	81.8	81.8	76.09	79.95
17	Rate the adequateness	7 1101	00110						A
	of the textbooks and								
	reference books								
	mentioned for the								
20	courses	64.52	66.36	80.63	80	79.18	79.18	81.56	79.47
	Rate the	1							
	appropriateness of the								
	sequence of the		0						
	courses provided in		CE 01	70.00	70.01	01 40	01 40	70 20	70.26
21	the curriculum	70.32	65.91	78.89	19.21	81.48	01.48	/0.28	19.20
	Rate the depth of the								
	syllabus of the courses								
	in relation to the	60.00	66.76	80.22	70 27	80.82	80.82	82 19	81.6
22	competencies	09.08	00.30	00.32	19.37	00.02	00.02	02.17	01.0





2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the Institute

	expected by industry/ current global scenario.				•				
	Rate the design of the courses in terms of Training & amp;								
23	Placement.	69.68	63.18	79.84	80.16	77.54	77.54	76.09	80.21
	Rate the flexibility in choosing the electives in relation to technology							-	
24	advancements	69.03	66.82	81.27	83.49	79.02	79.02	77.97	80.11
	Rate the percentage of learning ICT and Communication skills through courses								
25	offering	73.55	67.27	77.14	79.21	78.69	78.69	78.75	79.95
	Rate the sequence of units/ modules in the courses in terms of Minor / Major		- 2					01.70	00.06
26	projects.	69.03	65.91	79.52	81.43	79.18	79.18	81.72	80.96
27	The criteria used in assessment have been clearly stated in advance	65.16	65	81.11	79.84	81.64	81.64	79.69	79.63
20	Use the emerging technologies, skills, and modern software	71.61	63 19	70.84	80.95	81 31	81 31	79.06	79.79
1 28	10015.	1 /1.01	05.10	17.04	00.95	01.51	01.51	17.00	17.17



Principal



2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the Institute



Program End Survey







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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the Institute

-	Determined about things in the department	90.38
.7	Being informed about tillings in the department	90.38
8	Course outcomes are clear in most courses	90.19
9	Develop analytical skills	90.77
10	Faculties are available when I need them	07.00
11	Faculties are good at explaining things	07.00
12	Faculties treat students with respect.	90.38
13	How helpful and accurate the career counselling is in your programme?	89.23
14	How interesting the teaching is in most subjects in your programme?	89.42
15	Lactively participate in most class discussions	90
16	I am capable of self-educate in case of technological change and to	90.58
10	engage in independent life-long learning.	89.81
17	I am motivated to learn course materials	0,01
18	I am proficient enough to communicate effectively in both verbar and written forms	91.35
10	I can able to design computer based systems	92.5
20	I can design and develop web-based solutions with effective graphical	91.54
- 21	Lear use the emerging technologies skills, and modern software tools.	90
	I have basic knowledge in mathematics, science, engineering, and	89.04
22	humanities.	07101
23	I have capability to manage the software and projects	90.19
24	I have programming analytical, logical and problem-solving skills.	89.42
	I show respectful behaviour toward faculty and other students in most	88.85
25	of my classes & understanding of ethical responsibilities	00.00
26	I usually attend my classes	89.62
27	Library access to reading materials	89.04







2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the Institute



Parent Survey

SNo	Question	Feedback
	Rate your ward on Co-curricular and extra-curricular	83.33
1	activities aided in overall grooming and personality	
2	development of the student.	
2	Do you Feel Student counseling and mentoring helped in	96.67
Z	inculcating moral and ethical values among the students.	
2	Rate - Constant communication about your ward academic	90
3	progress report, discipline and attendance.	
4	Rate Facilities available namely library, hostel facility,	90
4	Teaching learning process, Administrative help, Examination.	
	Rate the Quality of Infrastructure facilities namely laboratory,	90
5	facilitated learning of curriculum-based software	
	development tools.	
(Rate Workshops, Seminars, Conferences aided the	90
0	professional development of student (Your Ward).	
_	Rate your ward on Conducive learning environment due to	93.33
/	good interaction with the teachers.	







2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the Institute

Alumni Survey

Questions: Responses 🐯 Settings	
Section 1 of 19	•
	Tr Contraction
B <i>I</i> <u>U</u> ⇔ X	G
Dear Akunni,	
We hope and balieve that the time you spent with us at UST must have been knowledgeable and as well as cherish able, thereby, paved your way towards a brighter future. We shall be very much thankful to you if you would spare some time to fill feedback form.	
This form is automatically collecting emoits from all respondents. Change settings	
Section 2 of 19	
Personal information a	•
Description (optional)	
Warne of Augran	
Short answer text	
Email address "	
Short answer text	
Phone/ Mobile NO.	

SNo	Question	PO	Feedback
1	Demonstrate basic knowledge in mathematics, science,	PO1	80
	engineering, and humanities.		
2	Identify, formulate and analyze the complex engineering	PO2	77
	problems.		70
3	Design and develop the computer-based systems.	PO3	/8
4	Demonstrate with excellent programming, analytical, logical	PO4	76
	and problem-solving skills.		





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5	Use the emerging technologies, skills, and modern software	PO5	78
	tools.		
6	Ability to solve the social, cultural, ethical issues with IT	PO6	79
	solutions.		
7	Ability to design and develop web-based solutions with	PO7	77
,	effective graphical user interface for the need of sustainable		
	development.		
8	Broadly educated and will have understanding of ethical	PO8	78
U	responsibilities		
0	Ability to work individually and as a member or leader in	PO9	79
9	diverse teams		
10	uiverse teams	PO10	80
10	Proficient enough to communicate effectively in both verbal	1010	00
	and written forms		=0
11	How would you rate your ability in applying Engineering	PO11	79
	principles as a member and leader in a team, to manage		
	projects in multidisciplinary environments?		
12	Canable of self-educate in case of technological change and	PO12	80
	to engage in independent life-long learning.		



Academic Feedback

Principal Indore Institute of Science and Technology, Indore





2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the Institute







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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the Institute



DEPARTMENT OF INFORMATION TECHNOLOGY

G .	Oractions	Action Taken by	
Category	Questions	Department	
Semester/Course End Feedback including	Ability to solve the social, cultural, ethical issues with IT solutions	Students are motivated to participate in National-level competitions like hackathons that act as catalysts for innovation by combining technical expertise with a focus on societal impact. They empower students to tackle pressing social, cultural, and ethical challenges through scalable and sustainable IT solutions.	
Curriculum Feedback	Rate the adequateness of the textbooks and reference books mentioned for the courses	Faculties offer additional resources like notes, PPTs, practice questions, case studies so that the topics with sufficient depth a comprehensive understanding of the subject is provided to students.	
	Rate the design of the courses in terms of Training & Placement.	Institute has well designed SIGs that not only impart	

ACTION TAKEN REPORT BASED ON FEEDBACK 2023-2024





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2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the Institute

5.8		technical knowledge but also to develop well-rounded professionals ready for the challenges of the modern workplace. Its structured approach to technical education, practical experience, and soft skills training ensures students are highly employable and prepared for successful careers.
	I show respectful behavior toward faculty and other students in most of my classes & understanding of ethical responsibilities	Sessions on ethics, led by Career development cell are taken, to discuss real-world implications of ethical breaches and respectful behavior.
Program End	Faculties are good at explaining things	Faculties use clear and concise language to convey complex ideas. They are motivated to adopt effective teaching methods, such as examples, analogies, or visual aids, to enhance understanding.
	Demonstrate with excellent programming, analytical, logical and problem-solving skills.	To ensure excellent programming skills, Hands on sessions for all the sessions held under various SIGs are taken by trainers.
Alumni Survey	Ability to design and develop web- based solutions with effective graphical user interface for the need of sustainable development.	Department ensures that student work together on web-based projects after completing the skill improvement training based on front end development.
	Identify, formulate and analyze the complex engineering problems.	To help students identify, formulate, and analyze complex engineering problems, a structured approach grounded in critical thinking, problem- solving techniques, and





2.6.2 - Attainment of Programme Outcomes and Course Outcomes are Evaluated by the Institute

		hands-on experience is
	•	provided by the department.
Academic Feedback	Faculty having less than 75% feedback	HoD and Principal keep on counselling such faculty and help them to prepare for lectures
Parents Feedback	Rate your ward on Co-curricular and extra-curricular activities aided in overall grooming and personality development of the student.	Holistic development of students is ensured through various clubs under Samagra Samutkarsh Yojna. Career development cell ensures that over all grooming of a student starts from first to final year.

Signature of HOD



Signature of Principal

Principal Indore Institute of Science and Technology, Indore



Indore Institute of Science