

ANNASAHEB DANGE COLLEGE OF ENGINEERING AND TECHNOLOGY ASHTA

(An Autonomous Institute with NAAC A++ Grade)



Department of Computer Science and Engineering
(Internet of Things and Cyber Security Including Blockchain Technology)

Teaching and Evaluation Scheme

B. Tech: Semester-VII

Course Code	Course	Teaching Scheme				Evaluation Scheme					
		L	T	P	Credits	Scheme	Theory (Marks)		Practical (Marks)		
						Max.	Min. for Passing	Max.	Min. for Passing		
0ICOE4**	Open Elective-III	3	--	--	3	ISE I	10	40	--	--	
						MSE	30		--	--	
						ISE II	10		--	--	
						ESE	50		20	--	--
0ICPC403	Cloud Computing	3	--	--	3	ISE I	10	40	--	--	
						MSE	30		--	--	
						ISE II	10		--	--	
						ESE	50		20	--	--
0ICPC404	Machine Learning	3	--	--	3	ISE I	10	40	--	--	
						MSE	30		--	--	
						ISE II	10		--	--	
						ESE	50		20	--	--
0ICPE4**	Professional Elective-IV	3	--	--	3	ISE I	10	40	--	--	
						MSE	30		--	--	
						ISE II	10		--	--	
						ESE	50		20	--	--
0ICPC408	Blockchain Security and Performance	3	--	--	3	ISE I	10	40	--	--	
						MSE	30		--	--	
						ISE II	10		--	--	
						ESE	50		20	--	--
0ICH409	Project Management and Finance	--	--	2	1	ISE-I	25	10	--	--	
						ISE-II	25	10	--	--	
0ICPE4**	Professional Elective-IV Laboratory	--	--	2	1	ISE	--	--	25	10	
						ESE	--	POE	50	10	
0ICPC454	Cloud Computing Laboratory	--	--	2	1	ISE	--	--	25	10	
						ESE	--	POE	50	10	
0ICPC455	Machine Learning Laboratory	--	--	2	1	ISE	--	--	25	10	
						ESE	--	POE	50	10	
0ICPR456	In-Plant Training	--	--	--	1	ESE	--	PR	50	20	
0ICPR457	Project (Phase-I)	--	--	4	2	ISE	--	--	50	20	
						ESE	--	PR	100	40	
Total						19	0	08	23		
Total Contact Hours/Week: 27 hrs.											
Course Category		HS	BS	ES	PC	PE	OE	PR			
Credits		02	00	00	11	04	03	03			
Cumulative Sum		11	17	22	66	14	09	05			
						Audit					
Total						550		425			
						Total=550+425=975					

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.01COE4**- Open Elective-III	
01COE401	Ubiquitous Computing
01COE402	Smart Contracts and Solidity

01COE4**- Professional Elective-IV	
01CPE405	Ubiquitous Computing
01CPE406	Security Assessment and Disaster Recovery
01CPE407	Blockchain Platforms and Use cases

01COE4**- Professional Elective-IV Laboratory	
01CPE451	Ubiquitous Computing
01CPE452	Security Assessment and Disaster Recovery
01CPE453	Blockchain Platforms and Use cases


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(Internet of Things and Cyber security including Block Chain Technology)

Teaching and Evaluation Scheme
B. Tech :Semester-VIII

Course Code	Course	Teaching Scheme				Evaluation Scheme				
		L	T	P	Credits	Scheme	Theory (Marks)		Practical (Marks)	
							Max.	Min. for Passing	Max.	Min. for Passing
0ICOE4**	Open Elective-IV (MOOC)	3	--	--	3	ISE I	10	20		
						MSE	30			
						ISE II	10			
						ESE	50	20		
0ICPE4**	Professional Elective-V (MOOC)	3	--	--	3	ISE I	10	20		
						MSE	30			
						ISE II	10			
						ESE	50	20		
0ICPR458	Internship / Project (Phase-II)	--	--	20	10	ISE	--	--	100	40
						ESE	--	--	200	80
Total		06	-	20	16	Total	200		300	
Total Contact Hours/Week: 26 hrs						Total=200+300=500				
Course Category	HS	BS	ES	PC	PE	OE	PR	Total		
Credits	00	00	00	00	03	03	10	16		
Cumulative Sum	11	17	22	66	17	12	15	160		
Credits (AICTE)	12	25	24	48	18	18	15	160		

0ICOE4**- Open Elective-IV		0ICOE4**- Professional Elective-V	
0ICOE410	MOOC	0ICPR411	Industrial IOT
		0ICPR412	TCP/IP Network Security
		0ICPR413	Blockchain and FinTech

**Open Elective-IV(MOOC)and Professional Elective-V(MOOC) subjects are offered as per the course list provided by NPTEL Jan – Jun 2025.

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Course Details:

Class	B. Tech, Sem-VII
Course Code and Course Title	0ICOE401— Open Elective – III Ubiquitous Computing
Prerequisite/s	--
Teaching Scheme: Lecture/Tutorial/Practical	3/0/0
Credits:	3
Evaluation Scheme: ISE/MSE/ESE	10/30/10/50

Course Outcomes (COs):

Upon successful completion of this course, the student will be able to:

0ICOE401_1	Describe the characteristics of pervasive computing applications including the basic computing application problems, performance objectives and quality of services, major system components and architectures of the systems(K2)
0ICOE401_2	Analyze the strengths, problems and limitations of the current tools, devices and communications for pervasive computing systems.(K4)
0ICOE401_3	Recognize the different ways that humans will interact with systems in a ubiquitous environment and account for these accordingly(K2)
0ICOE401_4	List and exemplify the key technologies involved in the development Ubicomp systems(K2)
0ICOE401_5	Develop an attitude to identify and propose solutions for security and privacy issues(K6)

Course Contents:

Unit No.	Unit Name	Contact Hours
Unit 1	Introduction to Ubiquitous Computing Concept: Distributed Computing, Mobile Computing, Pervasive Computing, Wearable Computing, Modeling the Key Ubiquitous/Pervasive Computing Properties, Mobile Adaptive Computing, Mobility Management and Caching.	6
Unit 2	Pervasive Computing Devices Smart Environment: CPI and CCI Smart Devices: Application and Requirements, Device Technology and Connectivity, Human Computer Interaction.	7
Unit 3	Human Computer Interaction Explicit HCI, Implicit HCI, User Interface and Interaction for four hand-held widely used devices, Hidden UI via basic smart devices, Hidden UI via wearable and Implanted devices, Human centered design, user models.	8
Unit 4	Middleware for Pervasive Computing Adaptive middleware, Context aware middleware, Mobile middleware, Service Discovery, Mobile Agents.	7
Unit 5	Security in Pervasive Computing Security and Privacy in Pervasive Networks, Experimental Comparison of Collaborative Defense Strategies for Network Security.	7

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Unit 6	Challenges and Outlook Overview of challenges, smart devices, Smart Interaction, Smart physical environment device interaction, Smart human-device interaction, Human Intelligence versus machine intelligence, social issues. Case Study- Wearable Computing/ Cyber Physical System.	7
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Text Books:					
Sr. No	Title	Author	Publisher	Edition	Year of Edition
1	“Ubiquitous Computing, Smart devices, environment and interaction,”	Stefan Poslad	Wiley	1 st	2014
2	Fundamentals of Mobile and Pervasive Computing	Frank Adelstein, Sandeep Gupta, Golden Richard III, Loren Schwiebert, “	Tata McGraw Hills	2 st	2000

Reference Books:					
Sr. No	Title	Author	Publisher	Edition	Year of Edition
1	“Pervasive Computing,”	Jochen Burkhardt, Horst Henn, Stefan Hepper, Klaus Rindtor, Thomas Schaeck	Pearson	Eighteenth Impression,	2014.


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Course Details

Class	B. Tech, Sem. VII
Course Code and Course Title	0ICOE402 – Open Elective – III (Smart Contracts and Solidity)
Prerequisite/s	–
Teaching Scheme: Lecture/Tutorial/Practical	3/0/0
Credits	3
Evaluation Scheme (Theory) :ISE1 / MSE/ISE2/ESE	10/30/10/50

Course Outcomes (COs):

Upon successful completion of this course, the student will be able to:

0ICOE402_1	Explain the fundamental concepts of blockchain technology and its role in enabling smart contracts. (K2)
0ICOE402_2	Apply Solidity programming skills to create and deploy smart contracts on blockchain platforms like Ethereum. (K3)
0ICOE402_3	Utilize blockchain development tools and frameworks to test and deploy smart contracts. (K3)
0ICOE402_4	Create comprehensive smart contract designs for complex applications, considering security, scalability, and user experience. (K6)
0ICOE402_5	Design smart contract projects, including detailed code implementations, testing strategies, and deployment considerations, along with real-world use cases. (K6)

Course Contents

Unit No.	Unit Name	Contact Hours
Unit-1	Introduction to Ethereum, concepts of Smart Contracts, Dapps, And DAOs, What is Ethereum Virtual Machine (EVM), Ethereum Technology Overview, Architectural Overview, Ethereum Block chain Platform, Current and Potential Uses of Ethereum.	8
Unit-2	Introduction to Programming Smart Contracts, A Simple Smart Contract, Account Types, Gas, and Transactions, Accessing Contracts and Transactions, Mix, Dapps, Developer Tools, Ethereum Tests, Web3 Base Layer Services, Installing, Building, Testing, & Deploying Ethereum nodes.	7


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Unit-3	Introduction to Solidity Programming , Layout of a Solidity Source File, Structure of a Contract, Types, Units and Globally Available Variables, Input Parameters and Output Parameters, Control Structures, Function Calls, Creating Contracts via new, Order of Evaluation of Expressions, Assignment, Scoping and Declarations, Error handling: Assert, Require, Revert and Exceptions.	6
Unit-4	Solidity Programming –Contracts, Creating Contracts, Visibility and Getters, Function Modifiers, Constant State Variables, Functions, Inheritance, Abstract Contracts, Interfaces, Libraries.	7
Unit-5	Introduction to Decentralized Apps (Dapps) ,Decentralized Application Architecture, Connecting to the Block chain and Smart Contract, Decentralized Apps – Coding Details, Voting Contract and App,.	7
Unit-6	Blind Auction Contract and App , Coding Style Guide, Design Patterns, Coding Style Guide, Code Layout, Naming Conventions, Common Design Patterns, Withdrawal from Contracts, State Machine	7

Text Books:

Sr. No	Title	Author	Publisher	Edition	Year of Edition
1	Mastering Ethereum” O”Reilly	Andreas M. Antonopoulos, Dr.Gavin wood	Media Inc	2 nd	2019
2	Blockchain Technology: Cryptocurrency and Applications	S. Shukla, M. Dhawan, S. Sharma, S. Venkatesan	Oxford University Press	1 st	2019
3	The Blockchain for Beginnings, Guild to Blockchain Technology and Blockchain Programming	Josh Thompson	Create Space Independent Publishing Platform	1 st	2017


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Reference Books:					
Sr. No	Title	Author	Publisher	Edition	Year of Edition
1	Blockchain Technology: Cryptocurrency and Applications	S. Shukla, M. Dhawan, S. Sharma, S. Venkatesan	Oxford University Press	1 st	2019
2	The Blockchain for Beginnings, Guild to Blockchain Technology and Blockchain Programming	Josh Thompson	Create Space Independent Publishing Platform	1 st	2017


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Course Details:

Class	B. Tech, Sem - VII
Course Code and Course Title	OICPC403- Cloud Computing
Prerequisite/s	OICPCI5T/Computer Networks
Teaching Scheme: Lecture/Tutorial/Practical	3/0/0
Credits:	3
Evaluation Scheme (Theory) : ISE-1/MSE/ISE-2/ESE	10/30/10/50

Course Outcomes (COs):

Upon successful completion of this course, the student will be able to:

OICP403_1	Explain Cloud Computing concepts. (K2)
OICP403_2	Describe virtualization concept(K2)
OICP403_3	Analyze different cloud services(K3)
OICP403_4	Design different Applications in cloud. (K4)
OICP403_5	Launch and run web application on AWS cloud(K5)

Course Contents:

Sr. No.	Unit Name	Contact Hours
Unit 1	Introduction to Cloud: Getting to know the Cloud, Cloud and other similar configurations, Components of Cloud Computing. Cloud Types and Models: Private Cloud, Community Cloud, Public Cloud, Hybrid Clouds.	7
Unit 2	Virtualization: Introduction and benefits, Implementation Levels of Virtualization, Virtualization at the OS Level, Virtualization Structure, Virtualization Mechanism, Open-Source Virtualization Technology, Xen Virtualization Architecture, Binary Translation with Full Virtualization, Para virtualization, Virtualization of CPU, Memory and I/O Devices,	7
Unit 3	Cloud Computing Services: Infrastructure as a Service, Platform as a Service, Software as a Service, Database as a Service, Specialized Cloud Services.	7
Unit 4	Data Security in Cloud: Challenges with Cloud Data, Challenges with Data Security, Data Confidentiality and Encryption, Data availability, Data Integrity. Cloud Data Management Interface, Cloud Storage Gateways, Cloud firewall, Virtual Firewall.	8
Unit 5	Service Management in Cloud Computing: Service Level Agreements (SLAs), Billing& Accounting, Comparing Scaling Hardware: Traditional vs. Cloud, Economics of scaling: Benefitting enormously, Managing Data - Looking at Data, Scalability & Cloud Services, Database & Data Stores in Cloud, Large Scale Data Processing.	5


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Unit 6	Case study on Open Source and Commercial Clouds: Amazon EC2, Google Compute Engine, Microsoft Azure, Cloud foundry, OpenStack.	8
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Text Books:

Sr. No	Title	Author	Publisher	Edition	Year of Edition
1	Cloud Computing Black Book	Jayaswal, Kallakurchi, Houde, Shah	Dreamtech Press	1 st	2014
2	Mastering Cloud Computing	Buyya R, VecchiolaC, Selvi S T	McGraw Hill Education (India),	1 st	2013

Reference Books:

Sr. No	Title	Author	Publisher	Edition	Year of Edition
1	Cloud Computing for Dummies	Judith Hurwitz	Wiley	1 st	2009
2	Cloud Computing - Principles and Paradigms	Buyya R, Broberg J, Goscinski A	Wiley	1 st	2013


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Course Details:

Class	B. Tech, Sem. VIII
Course Code and Course Title	OICPC404- Machine Learning
Prerequisite/s	OICE5253/ PROGRAMMING LABORATORY- I
Teaching Scheme: Lecture/Tutorial/Practical	3/0/0
Credits	3
Evaluation Scheme (Theory) :ISE1 / MSE/ISE2/ESE	10/30/10/50

Course Outcomes (COs):

Upon successful completion of this course, the student will be able to:

OICP404_1	Explain Machine Learning concepts. (K2)
OICP404_2	Analyze the Machine Learning model (K3)
OICP404_3	Analyze supervised and unsupervised techniques (K3)
OICP404_4	Design solution using Machine Learning techniques. (K4)
OICP404_5	To tackle real world problems in domain of data mining, information retrieval, computer vision (K5)

Course Contents:

Sr. No.	Unit Name	Contact Hours
Unit 1	Introduction to Machine Learning: Definition, Terminology, Types of learning, Machine Learning Problem categories, Machine learning architecture, process, Lifecycle, Performance measures, tools and framework, data visualization.	6
Unit 2	Regression: Simple regression – hypothesis, cost function, parameter learning with gradient descent, learning rate, Gradient Descent for linear regression, examples, simple regression in matrix form. Multivariate Linear Regression – Multiple features, hypothesis functions, Gradient Descent for multiple variables, Feature scaling, polynomial regression	7

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Unit 3	<p>Classification-</p> <p>Logistic regression & Naïve Bayes : Logistic Regression – Definition, Hypothesis representation, decision boundary, cost function, Gradient Descent for Logistic Regression. Multiclass Classification, Regularization - Over fitting & Under fitting, cost function, Regularized Linear Regression, Regularized Logistic Regression, Conditional probability and Naïve Bayes Classifier. Instance-based classifier – K- Nearest Neighbor Classifier, Bayesian Network, Hidden Markov Model.</p>	8
Unit 4	<p>Classification- Decision trees and Support Vector Machine: Decision trees: definition, terminology, the need, advantages, and limitations. Constructing and understanding Decision trees, common problems with Decision trees, Decision tree algorithms, random forest. Support Vector Machine: What is SVM, Kernel Trick, Cost Function, Decision Trees vs. Support Vector Machine.</p>	8
Unit 5	<p>Unsupervised learning :</p> <p>Clustering, K Means clustering, Hierarchical clustering, Association Rule mining.</p>	5
Unit 6	<p>Neural Network & Recommendation System:</p> <p>Neural Networks- Neuron representation and model, Hypothesis for neuron, cost function, solution of a problem using single neuron. Gradient descent for a neuron. Neural network, Multiclass classification with neural network. Learning in neural network-back propagation algorithm Recommendation System: Popularity based recommender engines, Content based recommendation engines, Classification based recommendation engine, Collaborative filtering.</p>	8


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Text Books:					
Sr. No	Title	Author	Publisher	Edition	Year of Edition
1	Machine Learning with Python- an approach to applied ML	AbhishekVijayvar giya	BPB Publications	1 st	2018
2	Machine Learning	Tom M. Mitchell	McGraw Hill Education	1 st	1997
Reference Books:					
Sr. No	Title	Author	Publisher	Edition	Year of Edition
1	Machine Learning for dummies	John Paul Muller	Willey Publication	1 st	2016
2	Introduction to Machine Learning	EthemAlpaydin	PHI	2 nd	2013


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Course Details:

Class	B. Tech, Sem-VII
Course Code and Course Title	0ICPE405– PE-4- Ubiquitous Computing
Prerequisite/s	OICPC309 /Embedded System for IoT
Teaching Scheme: Lecture/Tutorial/Practical	3/0/0
Credits:	3
Evaluation Scheme: ISE/MSE/ESE	10/30/10/50

Course Outcomes (COs):

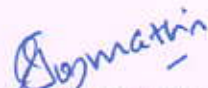
Upon successful completion of this course, the student will be able to:

0ICPE405_1	Describe the characteristics of pervasive computing applications including the basic computing application problems, performance objectives and quality of services, major system components and architectures of the systems.(K 1)
0ICPE405_2	Analyze the strengths, problems and limitations of the current tools, devices and communications for pervasive computing systems.(K 1)
0ICPE405_3	Recognize the different ways that humans will interact with systems in a ubiquitous environment and account for these accordingly(K2)
0ICPE405_4	List and exemplify the key technologies involved in the development Ubicomp systems(K2)
0ICPE405_5	Develop an attitude to identify and propose solutions for security and privacy issues(K6)

Course Contents:

Unit No.	Unit Name	Contact Hours
Unit 1	Introduction to Ubiquitous Computing Concept : Distributed Computing, Mobile Computing, Pervasive Computing, Wearable Computing, Modeling the Key Ubiquitous/Pervasive Computing Properties, Mobile Adaptive Computing , Mobility Management and Caching.	6
Unit 2	Pervasive Computing Devices Smart Environment: CPI and CCI Smart Devices: Application and Requirements, Device Technology and Connectivity, Human Computer Interaction.	7
Unit 3	Human Computer Interaction Explicit HCI, Implicit HCI, User Interface and Interaction for four hand-held widely used devices, Hidden UI via basic smart devices, Hidden UI via wearable and Implanted devices, Human centered design, user models.	8
Unit 4	Middleware for Pervasive Computing Adaptive middleware, Context aware middleware, Mobile middleware, Service Discovery, Mobile Agents.	7
Unit 5	Security in Pervasive Computing Security and Privacy in Pervasive Networks, Experimental Comparison of Collaborative Defense Strategies for Network Security.	7


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Unit 6	Challenges and Outlook Overview of challenges, smart devices, Smart Interaction, Smart physical environment device interaction, Smart human-device interaction, Human Intelligence versus machine intelligence, social issues. Case Study- Wearable Computing/ Cyber Physical System.	7
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Text Books:					
Sr. No	Title	Author	Publisher	Edition	Year of Edition
1	"Ubiquitous Computing, Smart devices, environment and interaction,"	Stefan Poslad	Wiley	1 st	2014
2	Fundamentals of Mobile and Pervasive Computing	Frank Adelstein, Sandeep Gupta, Golden Richard III, Loren Schwiebert, "	Tata McGraw Hills	2 nd	2000

Reference Books:					
Sr. No	Title	Author	Publisher	Edition	Year of Edition
1	"Pervasive Computing,"	Jochen Burkhardt, Horst Henn, Stefan Hepper, Klaus Rindtor, Thomas Schaeck	Pearson	18 th	2014.


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Course Details:

Class	B. Tech, Sem- VIII
Course Code and Course Title	0ICPE406 - PE-4- Security Assessment and Disaster Recovery
Prerequisite/s	OICPC30S - Data Encpction, Steganography and Digital Watermarking
Teaching Scheme: Lecture/Tutorial/Practical	3/0/0
Credits:	3
Evaluation Scheme: ISE/MSE/ESE	10/30/10/50

Course Outcomes (COs):

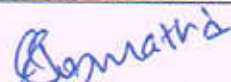
Upon successful completion of this course, the student will be able to:

0ICPE406_1	Understanding Risk Management Basics and Cyber Risk Fundamentals. (K2)
0ICPE406_2	Demonstrate techniques for identifying and evaluating cyber risks. (K3)
0ICPE406_3	Determine appropriate scales for likelihood and consequence assessments in cyber risk scenarios. (K4)
0ICPE406_4	Evaluate organizational compliance with standards and frameworks. (K5)
0ICPE406_5	Define and develop metrics for measuring information security effectiveness. (K6)

Course Contents:

Sr. No.	Unit Name	Contact Hours
Unit 1	Introduction, what is risk and risk management, risk assessment, monitoring and review, cyberspace, cyber system. What is cyber risk, communication and consultation of cyber risk, cyber risk assessment, monitoring and review of cyber risk	7
Unit 2	Context establishment, context, goals and objectives, target of assessment, interface to cyberspace and attack surface, scope, focus and assumption, assets, scale and risk evaluation criteria,	7
Unit 3	Risk identification techniques, malicious risks, non-malicious risks, risk analysis, threat analysis, vulnerability analysis, likelihood of incidents, consequences of incidents, Risk evaluation, consolidation of risk analysis results, evaluation of risk level, risk aggregation, risk grouping, risk treatment identification, risk acceptance	7
Unit 4	Two-factor measure, three-factor measure, many-factor measure, which measure to use for cyber risk?, classification of scales, qualitative versus quantitative risk assessment, scale for likelihood, scale for consequence, what scale to use for cyber risk	7
Unit 5	Defining information security metrics, Risk analysis techniques, Automating metric calculations and tools. What is an IT security assessment, what is an IT security audit, what is compliance, how does and audit differs from assessment, case study: Enron, WorldCom, TJX Credit Card Breach	7


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Unit 6	Organization do to be in compliance, Auditing within IT infrastructure, managing IT compliance, Auditing standards and frameworks, COSO, COBIT, ISO/IEC 27001 standard, ISO/IEC 27002 standard, NIST 800-53,	7
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Text Books:					
Sr. No	Title	Author	Publisher	Edition	Year of Edition
1	Cyber-Risk Management	AtleRefsdal BjornarSolhaug, Ketil Stolen	Springer	1st	2015
2.	Information Security Risk Assessment Toolkit-	Mark Talabis and Jason Martin	Elsevier	1 st	2013
3.	T Security Risk Control Management – An Audit Preparation Plan	Raymond Pompon	Apress	1 st	2016

Reference Books:					
Sr. No	Title	Author	Publisher	Edition	Year of Edition
1	Auditing IT Infrastructures for Compliance	Marty M. Weiss and Michael G. Solomon	Jones & Bartlett Learning	2 st	2015
2.	Quantitative Risk Assessment: The Scientific Platform by –	TerjeAven	Cambridge University Press	1 st	2011


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Course Details:

Class	B. Tech., Sem. VII
Course Code and Course Title	0ICPE407- PE-4-Blockchain Platform and UseCase
Prerequisite/s	0ICPC305 /Blockchain Technology
Teaching Scheme: Lecture/Tutorial/Practical	3/0/0
Credits	3
Evaluation Scheme: ISE/MSE/ESE	10/30/10/50

Course Outcomes (COs):

Upon successful completion of this course, the student will be able to:

0ICPE407_1	Describe the foundational principles of blockchain technology, including decentralization, consensus mechanisms, and cryptographic techniques (K2)
0ICPE407_2	Compare and contrast major blockchain platforms such as Ethereum, Hyperledger Fabric, and others in terms of architecture, consensus mechanisms, scalability, and suitability for various applications.(K5)
0ICPE407_3	Develop and deploy smart contracts using programming languages like Solidity (K6)
0ICPE407_4	Design decentralized applications (DApps) that leverage blockchain platforms for specific use cases.(K3)
0ICPE407_5	Assess the potential of blockchain technology in various sectors such as finance, supply chain management, healthcare, government, energy, and real estate.(K4)

Course Contents:

UnitNo.	Unit Name	Contact Hours
Unit 1	Introduction to Blockchain Technology Overview of distributed ledger technology (DLT),decentralization, consensus mechanisms, cryptographic principles	7
Unit 2	Blockchain Platforms Overview Introduction to major blockchain platforms: Ethereum, Hyperledger Fabric, Corda, Binance Smart Chain, Solana, Comparison of platforms based on architecture, consensus mechanisms, scalability, and use cases	7


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Unit 3	Smart Contracts and Decentralized Applications (DApps) Smart contracts: concepts, design patterns, Solidity programming language, Development frameworks and tools (Truffle, Remix), Case studies of popular DApps and their impact	7
Unit 4	Blockchain Use Cases in Finance and Banking Applications of blockchain in banking (e.g., cross-border payments, trade finance), Central bank digital currencies (CBDCs) and stablecoins, Regulatory considerations and challenges Blockchain Use Cases in Healthcare Patient data management and interoperability, Drug traceability and counterfeit prevention, Privacy and security considerations	7
Unit 5	Blockchain Use Cases in Supply Chain Management Traceability and provenance of goods using blockchain, Supply chain transparency and efficiency, Case studies of successful implementations (e.g., IBM Food Trust, VeChain) Blockchain Use Cases in Government and Public Sector Identity management and digital voting systems, Blockchain for transparent and accountable governance, Case studies from various countries and regions	7
Unit 6	Emerging Trends and Future Directions DeFi (Decentralized Finance) and its impact on traditional finance, Non-fungible tokens (NFTs): concepts, applications, and controversies, Blockchain interoperability and the role of cross-chain protocols	7

Text Books:

Sr. No	Title	Author	Publisher	Edition	Year of Edition
1	Blockchain Technology	Chandramouli Subramanian	Universities Press	1 st	2020
2	Block Chain & Cryptocurrencies	Anshul Kaushik	Khanna Publishing House	1 st	2018
4	Blockchain for Dummies	Tiana Laurence	John Wiley & Sons.	2 nd	2019


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Reference Books:					
Sr. No	Title	Author	Publisher	Edition	Year of Edition
1	Mastering Blockchain: Deeper insights into decentralization, cryptography, Bitcoin, and popular Blockchain frameworks	Imran Bashir	Packt Publishing	1 st	2017
2	Blockchain: Blueprint for a New Economy	Melanie Swan	Shroff Publisher O'Reilly Publisher Media	1 st	2015
3	Mastering Bitcoin: Programming the Open Blockchain	Andreas Antonopoulos.	-Shroff/O'Reilly;	2 st	2017


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Course Details:

Class	B. Tech., Sem. VII
Course Code and Course Title	0ICPC408-Blockchain Security and Performance
Prerequisite/s	0ICPC305 /Blockchain Technology
Teaching Scheme: Lecture/Tutorial/Practical	3/0/0
Credits	3
Evaluation Scheme: (Theory)	10/30/10/50
ISE-I /MSE/ISE-II/ ESE	

Course Outcomes (COs):

Upon successful completion of this course, the student will be able to:

0ICPC408_1	Describe the foundational principles of blockchain security, including cryptographic techniques, consensus algorithms, and decentralization..(K2)
0ICPC408_2	Analyze the security risks associated with blockchain technology, such as 51% attacks, double spending, and smart contract vulnerabilities. (K4)
0ICPC408_3	Apply security best practices for blockchain networks, including key management, secure wallet management, and network security. (K3)
0ICPC408_4	Optimize blockchain architecture and design for improved performance(K5)
0ICPC408_5	Assess regulatory and compliance considerations related to blockchain security.(K5)


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Course Contents:		
UnitNo.	Unit Name	Contact Hours
Unit 1	Basics: The Double-Spend Problem, Byzantine Generals' Computing Problems, Distributed Systems, Distributed Consensus, Distributed ledger technology, Types of blockchains (public, private, consortium). Cryptographic Foundations: Cryptographic hash functions, Digital signatures and public-key cryptography, Merkle trees and their role in blockchain	7
Unit 2	Blockchain Security: Threatmodels and attack vectors, Double-spending problem and consensus mechanisms, 51% attacks and Byzantine Fault Tolerance (BFT)	7
Unit 3	Consensus Algorithms : Proof of Work (PoW), Proof of Stake (PoS), and alternatives, Practical Byzantine Fault Tolerance (PBFT), PAXOS, RAFT, Comparison and analysis of consensus algorithms	7
Unit 4	Smart Contract Security: Introduction to smart contracts, Vulnerabilities (e.g., reentrancy, overflow, logic errors), Best practices for secure smart contract development	7
Unit 5	Performance Optimization Techniques: Network performance and latency issues, Optimization strategies for transaction throughput, Benchmarking and performance measurement tools	7
Unit 6	Case Studies and Real-World Applications: Ethereum and decentralized applications (dApps), Hyperledger and enterprise blockchain solutions, Regulatory considerations and privacy concerns	7

Text Books:					
Sr. No	Title	Author	Publisher	Edition	Year of Edition
1	Blockchain Technology	ChandramouliSubramanian	Universities Press	1 st	2020
2	Block Chain & Crypto Currencies	AnshulKaushik	Khanna Publishing House	1 st	2018
3	Blockchain for Dummies	Tiana Laurence	John Wiley & Sons.	2 nd	2019


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Reference Books:

Sr. No	Title	Author	Publisher	Edition	Year of Edition
1	Mastering Blockchain: Deeper insights into decentralization, cryptography, Bitcoin, and popular Blockchain frameworks	Imran Bashir	Packt Publishing	1 st	2017
2	Blockchain: Blueprint for a New Economy	Melanie Swan	Shroff Publisher O'Reilly Publisher Media	1 st	2015
3	Mastering Bitcoin: Programming the Open Blockchain	Andreas Antonopoulos.	-	1 st	2017


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Course Details:

Class	B. Tech, Sem. VII
Course Code and Course Title	0ICPE451 / – PE-4 Ubiquitous Computing Laboratory
Prerequisite/s	OTCPC362 /Embedded System for IoT Laboratory
Teaching Scheme: Lecture/Tutorial/Practical	0/0/2
Credits	1
Evaluation Scheme: (Practical) ISE/ESE	25/50
Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
0ICPE451_1	Develop and implement adaptive real-time systems and smart home automation (K3)
0ICPE451_2	Design and implement predictive maintenance systems and environmental monitoring solutions (K3)
0ICPE451_3	Integrate IoT devices and implement edge computing solutions for optimized performance (K3)

Exp. No.	Experiment List
1.	Create a mobile app that streams video in real-time and adapts quality based on network conditions.
2.	Develop a smart home system that adjusts lighting and temperature based on user presence and activity
3.	Implement a predictive maintenance system that anticipates machine failures using sensor data and machine learning.
4.	Design a system that collects and disseminates environmental data (e.g., air quality, noise levels) using multimedia presentations.
5.	Develop a location-based service application that provides relevant information (e.g., nearby restaurants) based on the user's current location.
6.	Create a system that optimizes energy usage in a data center by dynamically adjusting computing resources based on workload.
7.	Integrate multiple IoT devices to create a cohesive system for smart agriculture, monitoring soil moisture, temperature, and crop health.
8.	Develop an AR application that assists users in indoor navigation, providing real-time directions and contextual information.
9.	Implement an edge computing solution that processes data locally on IoT devices to reduce latency and bandwidth usage in a smart city application.
10.	Micro project


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Text Books:					
Sr. No	Title	Author	Publisher	Edition	Year of Edition
1	"Ubiquitous Computing, Smart devices, environment and interaction,"	Stefan Poslad	Wiley	1 st	2014
2	Fundamentals of Mobile and Pervasive Computing	Frank Adelstein, Sandeep Gupta, Golden Richard III, Loren Schwiebert, "	Tata McGraw Hills	2 nd	2000

Reference Books:					
Sr. No	Title	Author	Publisher	Edition	Year of Edition
1	"Pervasive Computing,"	Jochen Burkhardt, Horst Henn, Stefan Hepper, Klaus Rindtor, Thomas Schaeck	Pearson	18 th	2014.


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Course Details:

Class	B. Tech, Sem - VIII
Course Code and Course Title	OICPE452 -- PE-4- Security Assessment and Disaster Recovery Laboratory
Prerequisite/s	OICPC358/ Data Encryption, Steganography and Digital Watermarking Laboratory
Teaching Scheme: Lecture/Tutorial/Practical	0/0/2
Credits:	1
Evaluation Scheme (Practical): ISE/ESE	25/50

Course Outcomes (COs):

Upon successful completion of this course, the student will be able to:

OICPE452_1	Perform code auditing and static analysis to identify vulnerabilities and bugs (K3)
OICPE452_2	Install and utilize Splunk for advanced data analysis and visualization (K3)
OICPE452_3	Conduct cybersecurity risk assessment and generate detailed reports (K3)

Exp. No.	Experiment List
1.	To audit the c/c++ or Python code using RATS code checking tool.
2.	Implement Flawfinder stand-alone script to check for calls to know potentially vulnerable library function calls
3.	Implement FindBugs standalone GUI application, or Eclipse plugin for loading custom rules set.
4.	Implement pychecker stand-alone script to find bugs in the code.
5.	Installation of splunk and study basic working as to stores data in its index and therefore separate database required.
6.	Implement splunk to discovers useful information automatically without searching manually
7.	Implement splunk to converts log data into Visual graphs and reports to simplify analysis, reporting and troubleshooting
8.	Submit a report on cyber security risk assessment for SCADA and DCS networks.


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Text Books:					
Sr. No	Title	Author	Publisher	Edition	Year of Edition
1	Cyber-Risk Management	Atle Refsdal Bjornar Solhaug, Ketil Stolen	Springer	1 st	2015
2.	Information Security Risk Assessment Toolkit-	Mark Talabis and Jason Martin	Elsevier	1 st	2013
3.	T Security Risk Control Management – An Audit Preparation Plan	Raymond Pompon	Apress	1 st	2016

Reference Books:					
Sr. No	Title	Author	Publisher	Edition	Year of Edition
1	Auditing IT Infrastructures for Compliance	Marty M. Weiss and Michael G. Solomon	Jones & Bartlett Learning	2 nd	2015
2.	Quantitative Risk Assessment: The Scientific Platform by –	Terje Aven	Cambridge University Press	1 st	2011


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Course Details:

Class	B. Tech., Sem. VII
Course Code and Course Title	0ICPE453- PE-4-Lab Blockchain Platform and UseCase
Prerequisite/s	OICPC305 /Blockchain Technology
Teaching Scheme: Lecture/Tutorial/Practical	0/0/2
Credits	1
Evaluation Scheme: (Practical) ISE /ESE	25/50

Course Outcomes (COs):

Upon successful completion of this course, the student will be able to:

0ICPE453_1	Develop and deploy smart contracts and decentralized applications on the Ethereum blockchain (K3)
0ICPE453_2	Set up and configure a Hyperledger Fabric network and develop chaincode (K3)
0ICPE453_3	Develop and implement blockchain-based applications for voting and healthcare management (K3)

Exp. No.	Experiment List
1.	Install and configure a local blockchain network using Ganache (for Ethereum)
2.	Deploy the contract on a local Ethereum network (using Remix IDE or Truffle framework).
3.	Develop a simple DApp (Decentralized Application) to interact with the deployed smart contract and Use Web3.js to connect the DApp to the blockchain.
4.	Set up a basic Hyperledger Fabric network using Docker and Understand the components like peer nodes, ordering service, and channels.


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5.	Write a simple chaincode in Go/JavaScript and Deploy the chaincode on the Hyperledger Fabric network and perform basic transactions.
6.	(i) Create a smart contract for a basic token (ERC-20) on Ethereum. (ii) Develop a basic DApp to facilitate token exchange between users.
7.	Design a smart contract to track products through a supply chain.
8.	Create a smart contract for identity verification and Implement a DApp where users can create, verify, and manage their identities on the blockchain.
9.	Design and implement a blockchain-based voting system and Ensure the system provides transparency, security, and anonymity
10.	Create a prototype for a blockchain-based healthcare record management system. Develop a smart contract for patient record management and access control.

Text Books:

Sr. No	Title	Author	Publisher	Edition	Year of Edition
1	Blockchain Technology	Chandramoulisubramanian	Universities Press	1 st	2020
2	Block Chain & Crypto Currencies	AnshulKaushik	Khanna Publishing House	1 st	2018
4	Blockchain for Dummies	Tiana Laurence	John Wiley & Sons.	2 nd	2019


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Reference Books:

Sr. No	Title	Author	Publisher	Edition	Year of Edition
1	Mastering Blockchain: Deeper insights into decentralization, cryptography, Bitcoin, and popular Blockchain frameworks	Imran Bashir	Packt Publishing	1 st	2017
2	Blockchain: Blueprint for a New Economy	Melanie Swan	Shroff Publisher O'Reilly Publisher Media	1 st	2015



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Course Details:

Class	B. Tech, Sem. VII
Course Code and Course Title	0ICPC454 / Cloud Computing Laboratory
Prerequisite/s	OICPCI5T /Computer Networks Laboratory
Teaching Scheme: Lecture/Tutorial/Practical	0/0/2
Credits	1
Evaluation Scheme: (Practical) ISE/ESE	25/50

Course Outcomes(COs):

Upon successful completion of this course, the student will be able to:

0ICPC454_1	Install and configure virtualization environments and development tools (K3)
0ICPC454_2	Develop, deploy, and manage web applications using cloud platforms and simulation tools (K3)
0ICPC454_3	Set up containerization and Hadoop environments for application deployment (K3)

Exp. No.	Experiment List
1.	Install Virtualbox/VMware Workstation with different flavours of linux or windows OS on top of windows7 or 8.
2.	Install a C compiler in the virtual machine created using virtual box and execute Simple Programs.
3.	Install Google App Engine. Create hello world app and other simple web applications using python/java.
4.	Use GAE launcher to launch the web applications.
5.	Simulate a cloud scenario using Cloud Sim and run a scheduling algorithm that is not present in CloudSim.
6.	Find a procedure to transfer the files from one virtual machine to another virtual machine.
7.	Find a procedure to launch virtual machine using try stack (Online Open stack Demo Version)
8.	Install Hadoop single node cluster and run simple applications like wordcount.
9.	Creating and Executing Your First Container Using Docker.
10.	Run a Container from Docker Hub.


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Text Books:					
Sr. No	Title	Author	Publisher	Edition	Year of Edition
1	, "Cloud Computing for Dummies",	Judith Hurwitz, R.Bloor, M.Kanfman, F.Halper,	Wiley India.	1 st	2014
2	Ronald Krutz and Russell Dean Vines, "Cloud Security", Wiley-India	Ronald Krutz and Russell Dean Vines	Wiley-India	1 st	2013

Reference Books:					
Sr. No	Title	Author	Publisher	Edition	Year of Edition
1	Barrie Sosinsky, "Cloud Computing Bible", Wiley India	Barrie Sosinsky,	Wiley India	1 st	2009
2.	"Cloud Computing : A Practical Approach",	Antohy T Velte, et.al,	McGraw Hill.	1 st	2013

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Course Details:

Class	B. Tech, Sem. VII
Course Code and Course Title	0ICPC455/Machine Learning Laboratory
Prerequisite/s	0ICE5253/ Programming Laboratory- I
Teaching Scheme: Lecture/Tutorial/Practical	0/0/2
Credits	1
Evaluation Scheme (Practical) : ISE/MSE	25/50

Course Outcomes(COs):

Upon successful completion of this course, the student will be able to:

0ICPC455_1	Implement regression and classification algorithms to solve predictive modeling problems (K3)
0ICPC455_2	Design and execute advanced machine learning algorithms for classification, regression, and clustering (K3)
0ICPC455_3	Develop data mining techniques and recommendation systems for data-driven insights (K3)

Exp. No.	Experiment List
1.	Study and implementation of Simple Linear Regression
2.	Write a program to implement Multiple Linear Regression
3.	Write a program to implement Logistic Regression.
4.	Write a program to implement Multi-class Classification
5.	Write a program to implement Decision Tree algorithm
6.	Write a program to implement Random Forest algorithm
7.	Write a program to implement K-means Clustering
8.	Write a program to implement association rule mining
9.	Write a program to implement Neural Network
10.	Write a program to implement Backpropagation algorithm of Neural Network
11.	Demonstrate simple recommendation system.



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Text Books:					
Sr. No	Title	Author	Publisher	Edition	Year of Edition
1	Machine Learning with Python- an approach to applied ML	AbhishekVijayvargiya	BPB Publications	1 st	2018
2	Machine Learning	Tom M. Mitchell	McGraw Hill Education	1 st	1997

Reference Books:					
Sr. No	Title	Author	Publisher	Edition	Year of Edition
1	Machine Learning for dummies	John Paul Muller	Wiley Publication	1 st	2016
2	Introduction to Machine Learning	EthemAlpaydin	PHI	2 nd	2013


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Course Details:

Class	Final Year B.Tech., Sem.VII
Course Code and Course Title	01CHS409 Project Management and Finance
Prerequisite/s	01CPC311/Software Engineering
Teaching Scheme: Lecture/Tutorial/Practical	2/0/0
Total Hours	28
Credits	02
Evaluation Scheme: ISE I/ ISEII	25/25

Course Outcomes(COs):

Upon successful completion of this course, the student will be able to:

01CHS409_1	Understand the concept to of Project Management(K ²)
01CHS409_2	Judge Team building and leadership skills through project management functions(K ⁴)
01CHS409_3	Prepare total project management plan and risk management plan including Individual participant's role.(K3)
01CHS409_4	Estimate costing and pricing of project based on organizational requirements.(K ⁴)
01CHS409_5	Determining financial goals of the project(K ³)

Course Contents:

Unit No.	Unit Name	Contact Hours
Unit1	Introduction to Project Management Introduction, Understanding Project Management, Differing Views of Project Management, General Systems Management, Project Management Life Cycle	04 Hrs.
Unit2	Project Management Functions Controlling, Directing, Project Authority, Barriers to Project Team Development, Team Building as an Ongoing Process, Leadership in a Project Environment, Life-Cycle Leadership, Organizational Impact, Employee-Manager Problems, Management Pitfalls, Communications, Project Review Meetings, Project Management Bottlenecks	06 Hrs.
Unit3	Planning General Planning, Life-Cycle Phases, Proposal Preparation, Understanding Participants' Roles, Project Planning, The Planning Cycle, Work Planning Authorization, Project Plan, Total Project Planning	04 Hrs.
Unit4	Risk Management Definition of Risk, Definition of Risk Management, Risk Management Process, Plan Risk Management, Plan Risk Management, Risk Identification, Risk Analysis, Qualitative Risk Analysis, Quantitative Risk Analysis	04 Hrs.


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Unit5	Pricing and Estimating GlobalPricingStrategies, TypesofEstimates, PricingProcess, OrganizationalInput Requirements, Labor Distributions, The Pricing Review Procedure, Estimating Pitfalls, Estimating High-Risk Projects, Project Risks, Life-Cycle Costing(LCC)	06 Hrs.
Unit6	Financial Management Meaning, NatureandScopeofFinance, FinancialGoal: ProfitMaximizationvs WealthMaximization, FinanceFunctions- InvestmentDecision, FinancingDecision, Dividend Decision, Liquidity Decision	04 Hrs.

TextBooks:

Sr. No	Title	Author	Publisher	Edition	Yearof Edition
1.	Project Management: A Systems Approach to Planning, Scheduling, and Controlling	<u>HaroldKerzner</u>	Wiley	13 th	2022
2	Fundamentals of Financial Management	R.P.Rostogi	Taxmann Publications PrivateLimited	7 th	2024

Reference Books:

Sr. No	Title	Author	Publisher	Edition	Yearof Edition
1.	Advanced Project Portfolio Management and the PMO	<u>Gerald I.Kendall, Steven C.Rollins</u>	J. Ross Publishing	1 st	2003
2	FundamentalofFinancial Management	<u>SKGupta, RKSh arma</u>	OSRPublishers Odisha	1 st	2022


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Course Details:

Class	Final Year B.Tech., Sem.VII
Course Code and Course Title	0ICPR456 In-Plant Training
Prerequisite/s	-
Teaching Scheme: Lecture/Tutorial/Practical	-
Total Hours	-
Credits	01
Evaluation Scheme: ESE	50

Course Outcomes(COs):

Upon successful completion of this course, the student will be able to:

0ICPR456_1	Analyze about the various softskills such as time management
0ICPR456_2	Understand the knowledge level skills, attribute for the students
0ICPR456_3	Apply the knowledge participate and collaborate new CAS projects
0ICPR456_4	Understand and improve their Knowledge and skills career development
0ICPR456_5	Analyze the industries fulfill the related skills career development

Course Contents:

The students Undergone for 15 days In-Plant Training under Curriculum credits

Mode of Assessment

This subject content of the internship emerging with thrust areas, the completion of work and the submission of report and assessment should be done at the end of part-I



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Course Details:

Class	Final Year B.Tech., Sem.VII
Course code and course Title	0ICPR457 Project(Phase-I)
Prerequisite/s	-
Teaching Scheme: Lecture/Tutorial/Practical	0/0/4
Total Hours	-
Credits	02
Evaluation Scheme: ISE/ESE	50/100

Course Outcomes(COs):

Upon successful completion of this course, the student will be able to:

0ICPR410_1	Identify and formulate the real-world problem for the project in the field of their own interest (K2)
0ICPR410_2	Survey technical literature ,biogs, documents about latest technological trends etc. to come-up with an innovative idea for technical project(K2)
0ICPR410_3	Analyzethehardwareand/orsoftwarerequirementsoftheproposedwork(K4)
0ICPR410_4	Identify and use relevant tools (from industry) and technologies for documentation, designing,coding, testing and debugging the software, hardware pertaining to the project(K3)
0ICPR410_5	Defend or argue or appraise the results obtained during project work(K5)
0ICPR410_6	Design the prototype of the selected idea (K6)



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Course Contents:

- Project work is to be carried out in the group of three to four students.
- Someone has said that choosing teammates for project is way more significant than Choosing life partner. So here you will develop team building skills. On the contrary, Students must learn how to adjust with unknown team members and get the work done.
- Pre-project is intended to help the students become better learners and better engineers.
- The students shall select the project by reviewing the literature in the domain of their interest and with the consultation of the respective supervisor/guide and approval from the department and submit the brief document discussing outline of the project with clear objectives
- The students are encouraged to acquire and exercise professional skills such as inter-personal communication, presentation skills etc.
- The students shall be exposed to all the standard tools used in the industry with help of industry experts.
- The skills that students acquired during project are intended to make them better prepared for accomplishing their Major project with a great success.
- The students are supposed to learn to manage time to achieve the scheduled milestones of their project work.
- Students should maintain a project logbook containing weekly progress of the project.
- During semester project will be evaluated progress-wise as per the project calendar provided by the department.
- The students will prepare a prototype of their work by the end of the semester and it will be showcased along with a technical poster in the event organized by the department.
- project report should be prepared using Latex/word and submitted in soft and hard form



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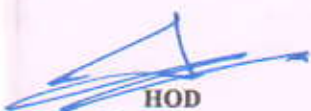
Course Details:

Class	Final Year B.Tech., Sem. VIII
Course Code and Course Title	0ICPR458 Internship/Project(Phase-II)
Prerequisite/s	-
Teaching Scheme: Lecture/Tutorial/Practical	0/0/20
Total Hours	-
Credits	10
Evaluation Scheme: ISE/ESE	100/200

Course Outcomes(COs):

Upon successful completion of this course, student will be able to:

0ICPR457_1	Identify, formulate and solve a problem.(K1)
0ICPR457_2	Analyze the hardware and/or software requirements of the system(K4)
0ICPR457_3	Use different tools available in the market or design, coding, testing and deployment and documentation (K3)
0ICPR457_4	Design and construct hardware and/or software system, component, or process to meet desired requirements of the problem undertaken. (K6)



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(Internet of Things and Cyber security including Block Chain Technology)

Course Contents:

- Industry* or Institute Project is the task based work leading to partial or complete solution to a problem identified by industry/ institute. This final year project is intended to work on real-world problem solving and hence the students may be allowed to work as interns at various industries or institutes of national importance or the research labs.
- If the students opt for internships at industry, they will work on the problem statements defined by industry with contribution from internal mentor as well. The students who opt for in-house project will be encouraged to formulate the own ideas to solve the real-world problems in the domain of their interests leading to concrete solution to the problem in the institute premises. OR they can be part of any live ongoing research project in the department. The topics being selected should be from the thrust areas and sub-domains of computer science and engineering. The ideas sponsored by industry to be implemented at institute will also be encouraged. Also, it is advised that the students opting for in-house projects should extend their ideas identified in pre-project phase in semester VII.
- Irrespective of Industry sponsored project to be implemented at industry or in-house project, project group will select a project topic with consent from guide and approval from the department and submit the brief document discussing outline of the project with clear objectives. The students are required to undergo literature survey, formulate the problem and propose a methodology to achieve the objectives.
- Project work should involve analytical, experimental, design or combination of these in the area of Computer Science and Engineering; multi-disciplinary work is also encouraged.
- Students should maintain a project logbook containing weekly progress of the project.
- The project evaluation committee will evaluate the project throughout the semester. The progress of the project will be monitored and assessed as per the project calendar provided by the department.
- On completion of the work, students should prepare an article and should submit the same to national / international conference, research symposiums, and national / international peer reviewed journals. The students should participate in the project exhibitions/ competitions in and outside the institute at state/national level.
- On completion of the work, a project report should be prepared using Latex and the soft and print copy of the same should be submitted to the department.
- Students need to undergo all the modes of evaluation scheduled by the department time- to-time.