

B.TECH

INFORMATION TECHNOLOGY

FOURTH YEAR

COURSE OUTCOMES

2020-21

FOURTH YEAR

YEAR OF STUDY 2020-21

IV YEAR (2020-21)		
C-401	ROE-074	UNIVERSAL HUMAN VALUES
C-402	RCS-071	APPLICATIONS OF SOFT COMPUTING
C-403	ROE-073	CLOUD COMPUTING
C-404	RCS-076	BLOCK CHAIN ARCHITECTURE DESIGN
C-405	RIT- 701	CRYPTOGRAPHY AND NETWORK SECURITY
C-406	RCS-702	ARTIFICIAL INTELLIGENCE
C-407	RIT 751	CRYPTOGRAPHY AND NETWORK SECURITY LAB
C-408	RCS-752	ARTIFICIAL INTELLIGENCE LAB
C-409	RIT-753	INDUSTRIAL TRAINING
C-410	RIT-754	PROJECT
C-411	ROE-082	ENTERPRENUERSHIP DEVELOPMENT PROGRAMME
C-412	RCS-080	MACHINE LEARNING
C-413	RCS-087	DATA COMPRESSION
C-414	RIT-851	SEMINAR
C-415	RIT-852	PROJECT

IV Year B.Tech (IT)

Session 2020-21

C-401 : (ROE - 074) : UNIVERSAL HUMAN VALUES		
Course Outcomes (CO)		Bloom's Knowledge Level (KL)
C-401.1	Define, identify and remember the facts and process, to assess basic human aspirations /goals and to see the shifts.	K1,K3
C-401.2	Facilitate the competence to understand the harmony in nature/existence and apply it in attaining human goals.	K2,K3,K4
C-401.3	Analyse various factors and sources influencing decision makings, and significance of knowledge in RESOLUTION.	K3,K4
C-401.4	Evaluate transformation in thoughts through knowledge and in expressions as humane conduct (behaviour, work/participation).	K5,K6
C-401.5	Create and develop the understanding of humane tradition and its various components.	K1,K3,K6

C-401 : (ROE - 074) : UNIVERSAL HUMAN VALUES

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO 12
C-401.1		2				1	1	1	1			2
C-401.2			3			2	2	2	2			3
C-401.3		3	3	2		3	3	3	2	2		3
C-401.4		2	3	3		3	3	3	3	3		3
C-401.5			3	3		3	3	3		2		3
C-401		2	3	3		3	3	3	2	2		3

C-401 : (ROE - 074) : UNIVERSAL HUMAN VALUES

CO	PSO1	PSO2
C-401.1	2	
C-401.2	3	2
C-401.3	3	3
C-401.4	3	3
C-401.5	3	3
C-401	3	3

IV Year B.Tech (IT)

Session 2020-21

C-402 : (RCS-071) Applications of Soft Computing		
Course Outcomes (CO)		Bloom's Knowledge Level (KL)
C-402.1	To identify and describe soft computing techniques and their roles in building intelligent machines and understand the concepts of neural networks to achieve human like decision making.	K1,K2
C-402.2	To apply neural networks to pattern classification and regression problems.	K3,K4
C-402.3	Students understand and learn fuzzy logic concepts and reasoning to handle uncertainty.	K1,K2,K3
C-402.4	To apply the fuzzy logic concepts to solve engineering problems related to uncertainty.	K4,K5,k6
C-402.5	To recognize the feasibility of applying a soft computing methodology for a particular problem and learn to apply genetic algorithms to combinatorial optimization problems.	K2,K6

C-402 : (RCS-071) Applications of Soft Computing

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C402.1	3	2	1	2	2							2
C402.2	3	3	2	3	3	2						2
C402.3	3	2	2	2	2							2
C402.4	3	3	3	3	3	3		2				2
C402.5	3	3	3	3	3	2		2				2
C402	3	3	2	3	3	2		2				2

C-402 : (RCS-071) Applications of Soft Computing

CO	PSO1	PSO2
C402.1	3	2
C402.2	3	2
C402.3	3	2
C402.4	3	2
C402.5	3	2
C402	3	2

IV Year B.Tech (IT)

Session 2020-21

C-403 : (ROE-073) Cloud Computing		
Course Outcomes (CO)		Bloom's Knowledge Level (KL)
C-403.1	To understand and define Cloud Computing, different Cloud service and deployment models.	K1,K2
C-403.2	To understand the Cloud applications with their architecture, vulnerabilities, and resource management.	K1,K2,K4
C-403.3	To describe importance of virtualization along with their technologies.	K2,K3
C-403.4	To analyze the components of open stack & Google Cloud platform and understand Mobile Cloud Computing,	K4,K5
C403.5	To understand the design & develop backup strategies for cloud data based on features.	K2,K3,K6

C-403 : (ROE-073) Cloud Computing

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C-403.1	3	2	3		3	2				3	2	2
C-403.2	3	2	3		3	2				3	2	2
C-403.3	3	2	3		3	2				3	2	2
C-403.4	3	2	3		3	2				3	2	2
C-403.5	3	2	3		3	2				3	2	2
C403	3	2	3		3	2				3	2	2

C-403 : (ROE-073) Cloud Computing

CO	PSO1	PSO2
C-403.1	3	3
C-403.2	3	3
C-403.3	3	3
C-403.4	3	3
C-403.5	3	3
C403	3	3

IV Year B.Tech (IT)

Session 2020-21

C-404 : (RCS-076) Blockchain Architecture Design		
Course Outcomes (CO)		Bloom's Knowledge Level (KL)
C-404.1	To understand the Blockchain Architecture, Blockchain design primitives, working of crypto currency and digital ledger. Students recall the crypto- primitives and understand their importance in Blockchain technology.	K1, K2
C-404.2	To understand various consensus protocols like RAFT, PBFT, Proof of Work and their applications in permissioned blockchain and crypto currencies. Students acquire skill to analyze consensus protocols on scalability and throughput parameters.	K2, K3, K4
C-404.3	To understand the working of Hyperledger fabric, its components, SDK, and frontend. Student acquire skills to design, build and deploy smart contract on Hyperledger fabric.	K2, K3, K5
C-404.4	To apply, analyze and evaluate the use of blockchain in Financial software, Capital markets, Supply chain Industries, Government initiatives like land record settlement and public distribution systems.	K3, K4, K5
C404.5	To understand the security considerations for blockchain and learn to apply and evaluate Membership and Access control policies, Privacy in a Blockchain System and confidentiality for smart contracts. Students can integrate ideas from blockchain technology into their own projects.	K2, K3, K5, K6

C-404 : (RCS-076) Blockchain Architecture Design

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C-404.1	2	3	3							3	3	3
C-404.2	3	3	3	3	3						2	3
C-404.3	3	2			2						3	3
C-404.4	2	2	2		3	3		3	3		3	3
C-404.5	2	2	3		3	3		3		3	3	3
C404	2	2	3	3	3	3		3	3	3	3	3

C-404 : (RCS-076) Blockchain Architecture Design

CO	PSO1	PSO2
C-404.1	3	3
C-404.2	3	3
C-404.3	3	3
C-404.4	3	3
C-404.5	3	3
C-404	3	3

IV Year B.Tech (IT)

Session 2020-21

C-405 : (RIT - 701) : CRYPTOGRAPHY AND NETWORK SECURITY		
Course Outcomes (CO)		Bloom's Knowledge Level (KL)
C-405.1	To Understand the basic concept of Classical Encryption Techniques and to analyse various types of ciphers, like stream and block ciphers.	K1,K3
C-405.2	To evaluate the mathematical foundation required for various cryptographic Algorithms with Modular Arithmetic.	K2,K3,K4
C-405.3	To analyse the authentication requirement, authentication functions, message authentication codes, hash function to various algorithms like SHA, MD5, DSS, Digital Signatures and other relevant attacks to these algorithms.	K3,K4
C-405.4	To Evaluate the Key Management and Distribution Techniques and related various algorithms like Key Distribution, Diffie-Hellman Key Exchange, Public Key Distribution, X.509 and PKI.	K5,K6
C-405.5	To Analyse about the IP Security Architecture, Authentication Header, Encapsulating Security Payloads, Key Management, Secure Socket Layer(SSL), Secure Electronic Transaction(SET), Intrusion Detection, Viruses and Firewalls.	K1,K3,K6

C-405 : (RIT - 701) : CRYPTOGRAPHY AND NETWORK SECURITY

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO 12
C-405.1	3	3	3	3								3
C-405.2	3	3	3	3					3		2	3
C-405.3	3	3		3	3		3	3	3		3	3
C-405.4	3		2		2		3	3			3	2
C-405.5	3	3	3	3	3		3	3			3	3
C-405	3	3	3	3	3		3	3	3		3	3

C-405 : (RIT - 701) : CRYPTOGRAPHY AND NETWORK SECURITY

CO	PSO1	PSO2
C-405.1	3	3
C-405.2	3	3
C-405.3	3	3
C-405.4	3	3
C-405.5	3	3
C-405	3	3

IV Year B.Tech (IT)

Session 2020-21

C-406 : (RCS- 702) ARTIFICIAL INTELLIGENCE		
Course Outcomes (CO)		Bloom's Knowledge Level (KL)
C-406.1	To define, understand, describe the key components of the artificial intelligence field and its importance in Computer Science in terms of intelligent agents.	K1,K2
C-406.2	To analyse, formalize the problem as a state space, graph, design heuristics and selection of different search or game-based techniques to solve them.	K4,K5,K6
C-406.3	To apply the fundamentals of knowledge representation and evaluate the working knowledge of reasoning in the presence of incomplete and/or uncertain information.	K3,K5
C-406.4	To understand and apply machine learning techniques to real-world problems on both complete and hidden data.	K2,K3
C406.5	To create the basics of pattern recognition process, classification techniques and apply the same on real world problems.	K2,K3,K6

C-406 : (RCS- 702) ARTIFICIAL INTELLIGENCE

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO 12
C-406.1	2	2										3
C-406.2	3	3	3	3	3				2			3
C-406.3	3	3	3	3	2							3
C-406.4	3	3	3	3	3	3	2		2		3	3
C-406.5	3	3	3	3	3	3	2		2		3	3
C406	3	3	3	3	3	3	2		2		3	3

C-406 : (RCS- 702) ARTIFICIAL INTELLIGENCE

CO	PSO1	PSO2
C-406.1	3	3
C-406.2	3	3
C-406.3	3	3
C-406.4	3	3
C-406.5	3	3
C-406	3	3

IV Year B.Tech (IT)

Session 2020-21

C-407 : (RIT-751) CRYPTOGRAPHY & NETWORK SECURITY LAB		
Course Outcomes (CO)		Bloom's Knowledge Level (KL)
C-407.1	To analyse the basic techniques of encryption and decryption.	K1,K2
C-407.2	To analyse the use of modular arithmetic in various mathematical ciphers.	K4,K5,K6
C-407.3	To understand the concept of Hashing in data transmission.	K3,K5
C-407.4	To analyse the concept of key exchange in public domain.	K2,K3
C-407.5	To understand the various type of security measures in email transmission.	K2,K3,K6

C-407 : (RIT-751) CRYPTOGRAPHY & NETWORK SECURITY LAB

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO 12
C-407.1	3	3	3	2								2
C-407.2	3	3	2	2						2	2	2
C-407.3	3	3	2	2	3					2	2	2
C-407.4	3	3	2	2	2					2	2	3
C-407.5	3	3	3	2	2					2	2	3
C-407	3	3	2	2	2					2	2	2

C-407 : (RIT-751) CRYPTOGRAPHY & NETWORK SECURITY LAB

CO	PSO1	PSO2
C-407.1	3	2
C-407.2	3	2
C-407.3	3	2
C-407.4	3	3
C-407.5	3	3
C-407	3	3

IV Year B.Tech (IT)

Session 2020-21

C-408 : (RIT-752) ARTIFICIAL INTELLIGENCE LAB		
Course Outcomes (CO)		Bloom's Knowledge Level (KL)
C-408.1	To learn different logic programming languages.	K1,K2
C-408.2	To apply and analyse various problem solving techniques on artificial intelligent problems.	K3,K4
C-408.3	To acquire skill to identify the given problem and design the rule based systems.	K2,K6
C-408.4	To develop better understanding to represent various real life problem domains using logic based techniques and use this to perform inference or planning.	K2,K5,K6
C-408.5	To understand the working knowledge in Lisp and demonstrate that for solving the artificial intelligent problems.	K2,K3

C-408 : (RIT-752) ARTIFICIAL INTELLIGENCE LAB

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO 12
C-408.1	2	2	2	2	3							3
C-408.2	3	3	3	3	3	2						3
C-408.3	3	3	3	3	2	3						3
C-408.4	3	3	3	3	3	3	2	1	1		3	3
C-408.5	3	3	3	3	3	2			2	2	3	3
C408	3	3	3	3	3	3	2	1	2	2	3	3

C-408 : (RIT-752) ARTIFICIAL INTELLIGENCE LAB

CO	PSO1	PSO2
C-408.1	3	2
C-408.2	3	2
C-408.3	3	3
C-408.4	3	3
C-408.5	3	3
C-408	3	3

IV Year B.Tech (IT)

Session 2020-21

C-409: (RIT 753) INDUSTRIAL TRAINING		
Course Outcomes (CO)		Bloom's Knowledge Level (KL)
C-409.1	To acquire 'real' working environment and get acquainted with the organization structure, business operations and administrative functions.	K1
C-409.2	To develop hands-on experience in their related field so that they can relate and reinforce what has been taught at the institute.	K4,K5,K6
C-409.3	To acquire knowledge of cooperation and to develop synergetic collaboration between industry and the institute in promoting a knowledgeable society.	K1,K6
C-409.4	Students get stage for the future recruitment by the potential employers and get awareness of the social, cultural, global and environmental responsibility as an engineer.	K1,K2
C-409.5	To acquire presentation and demonstration skills to effectively communicate the progress of the work to peers and superiors using audio/video, software tools.	K5

C-409: (RIT 753) INDUSTRIAL TRAINING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO 12
C-409.1		3	3	2		3	3	3	3	3	3	3
C-409.2			2			3	3	3	3	3	3	2
C-409.3		2			3	2	3	3	2	3	2	3
C-409.4			3			3	3	3	3	3	2	2
C-409.5	2	2	2	2	3		2	2	2		3	2
C409	2	2	3	2	3	3	3	3	3	3	3	2

C-409: (RIT 753) INDUSTRIAL TRAINING

CO	PSO1	PSO2
C-409.1	2	2
C-409.2	3	3
C-409.3	3	3
C-409.4	3	3
C-409.5	3	3
C409	3	3

IV Year B.Tech (IT)

Session 2020-21

C-410 : (RIT 754) PROJECT		
Course Outcomes (CO)		Bloom's Knowledge Level (KL)
C-410.1	Students are able to work effectively in teams to accomplish a common goal.	K2
C-410.2	Students are able to develop the ability to communicate effectively with a wide range of audience.	K3,K5
C-410.3	Students acquire the knowledge to undertake technical, research tasks and ethical response responsibilities to develop a software or hardware product.	K1,K3,K4
C-410.4	Students apply the knowledge for developing a business plan for an entrepreneurial venture and its implementation.	K3,K6
C-410.5	Students develop the ability of self-learning and apply it in life- long learning.	K3,K6

C-410 : (RIT 754) PROJECT

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO 12
C-410.1	3	3		3		3	3	3	3	3	2	3
C-410.2	2	2		3				3	3	3		3
C-410.3	2	3	3	2	3	2		3	3	3		3
C-410.4	3		3		3		3	3	3	3	3	3
C-410.5			3		3	3	3	3	3	2	3	3
C410	3	3	3	3	3	3	3	3	3	3	3	3

C-410 : (RIT 754) PROJECT

CO	PSO1	PSO2
C-410.1	3	2
C-410.2	2	3
C-410.3	3	3
C-410.4	3	3
C-410.5	3	3
C410	3	3

IV Year B.Tech (IT)

Session 2020-21

C-411 (ROE 082) ENTREPRENEURSHIP DEVELOPMENT PROGRAMME		
Course Outcomes (CO)		Bloom's Knowledge Level (KL)
C-411.1	To describe entrepreneurship and policies for development of new business.	K1, K2
C-411.2	To understand project identification and various techniques to evaluate projects.	K2, K5
C-411.3	To explain accounting and relevant management concepts and its application in business.	K2, K3
C-411.4	To analyse the risk management techniques for profit planning in industry.	K4
C-411.5	To discuss various entrepreneurial laws and financial assistance agencies.	K4

C-411 (ROE 082) ENTREPRENEURSHIP DEVELOPMENT PROGRAMME

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO 12
C-411.1		2	2	2	2	3	2	2	1	1	3	2
C-411.2		3	3	2	3	3	3	2	2	3	3	3
C-411.3		3	3	3	2	2	3	1	2	3	3	3
C-411.4		2	2	2	2	2	2	1	1	2	3	2
C-411.5		2	2	2	2	2	2	3	1	3	2	2
C-411		2	2	2	2	2	2	2	1	2	3	2

C-411 (ROE 082) ENTREPRENEURSHIP DEVELOPMENT PROGRAMME

CO	PSO1	PSO2
C-411.1		1
C-411.2		2
C-411.3		2
C-411.4		2
C-411.5		
C-411		2

IV Year B.Tech (IT)

Session 2020-21

C-412 (RCS 080) MACHINE LEARNING		
Course Outcomes (CO)		Bloom's Knowledge Level (KL)
C-412.1	To understand the fundamental concepts, issues and challenges involved in machine learning.	K1,K2
C-412.2	To understand and apply the mathematical relationships of various supervised and unsupervised Machine Learning algorithms.	K2,K3
C-412.3	To recognize the hypothesis space and learning concepts involved in various probabilistic algorithms required for the model selection and their evaluation.	K2,K3
C-412.4	To identify and evaluate the concept of computational learning and its complexity. They are able to design the solutions for the problems involving instance-based learning.	K4,K5,K6
C-412.5	To understand the reinforcement learning concept and the optimization strategies. They are able to design the optimization strategies for the models of evolution.	K2,K6

C-412 (RCS 080) MACHINE LEARNING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO 12
C412.1	1	2		3	3	2					2	2
C412.2	3	3	2	3	3	3					2	2
C412.3	3	3	2	3	3	2					2	2
C412.4	3	3	2	3	3	3					2	2
C412.5	3	3	2	3	3	3					2	2
C412	3	3	2	3	3	3					2	2

C-412 (RCS 080) MACHINE LEARNING

CO	PSO1	PSO2
C412.1	3	2
C412.2	3	2
C412.3	3	2
C412.4	3	2
C412.5	3	2
C412	3	2

IV Year B.Tech (IT)

Session 2019-20

C-413 (RCS 087) DATA COMPRESSION		
Course Outcomes (CO)		Bloom's Knowledge Level (KL)
C-413.1	To understand lossless and lossy compression techniques with different compression models and compression codes.	K1,K2
C-413.2	To analyse and demonstrate the ability to interpret the mathematics behind different compression coding schemes.	K4
C-413.3	To identify authentication requirements for network security with ability to evaluate and apply various compression functions and dictionary compression coding techniques.	K3,K5
C-413.4	To interpret and create quantization model, uniform and non-uniform quantization with different scales.	K4, K6
C-413.5	To understand, compare and contrast various techniques of scalar and vector quantization and remember standards for various compression techniques.	K1, K2 , K4

C-413 (RCS 087) DATA COMPRESSION

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO 12
C413.1	3	3	3	3	2		2		2	2		2
C413.2	3	3	3	3	2	2	2		2	2		2
C413.3	3	2	3	3	2	2	2		2			
C413.4	3	2	2	3	2	2	2		2	2		2
C413.5	2	3	3	2	3	2	2		2			
C413	3	3	3	3	2	2	2		2	2		2

C-413 (RCS 087) DATA COMPRESSION

CO	PSO1	PSO2
C413.1	3	3
C413.2	2	2
C413.3	3	3
C413.4	3	3
C413.5	3	2
C413	3	3

IV Year B.Tech (IT)

Session 2020-21

C-414 (RIT 851) SEMINAR		
Course Outcomes (CO)		Bloom's Knowledge Level (KL)
C-414.1	Students are able to focus on presentations in a variety of formats.	K1
C-414.2	Students understand the need of personality growth, development and communication skills.	K2
C-414.3	Students get skills like extrovert in nature to maintain better interpersonal relationship on the job and off the job.	K1, K2
C-414.4	Students acquire all round development to suit the industry needs.	K1, K2
C-414.5	Students develop the skill to explore latest happening in technology and survey on selected topics, addressing issues of science in society today.	K6

C-414 (RIT 851) SEMINAR

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO 12
C412.1		3		2	2		3	2	3	2	3	2
C412.2		3		3	2		2		3	3	3	2
C412.3		3		3	2		2	2	3	2	3	
C412.4		3		3	3		3		3	3	3	2
C412.5		3		2	2		2	2	3	3	3	2
C412		3		3	2		2	2	3		3	2

C-414 (RIT 851) SEMINAR

CO	PSO1	PSO2
C414.1	3	3
C414.2	2	2
C414.3	3	3
C414.4	3	3
C414.5	3	3
C414	3	3

IV Year B.Tech (IT)

Session 2020-21

C-415 (RIT 852) PROJECT		
Course Outcomes (CO)		Bloom's Knowledge Level (KL)
C-415.1	The students are able to work effectively in teams to accomplish a common goal.	K2
C-415.2	The students are able to develop the ability to communicate effectively with a wide range of audience.	K3,K5
C-415.3	The students acquire the knowledge to undertake technical, research tasks and ethical response responsibilities to develop a software or hardware product.	K1,K3,K4
C-415.4	The students apply the knowledge for developing a business plan for an entrepreneurial venture and its implementation.	K3,K6
C-415.5	The students develop the ability of self-learning and apply it in life- long learning.	K3,K6

C-415 (RIT 852) PROJECT

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO 12
C-415.1	3	3		3		3	3	3	3	3	2	3
C-415.2	2	2		3				3	3	3		3
C-415.3	2	3	3	2	3	2		3	3	3		3
C-415.4	3		3		3		3	3	3	3	3	3
C-415.5			3		3	3	3	3	3	2	3	3
C-415	3	3	3	3	3	3	3	3	3	3	3	3

C-415 (RIT 852) PROJECT

CO	PSO1	PSO2
C415.1	3	3
C415.2	3	3
C415.3	3	3
C415.4	3	3
C415.5	3	3
C415	3	3

Program Level Course Mapping With PO – Final Year (2020-21)

C O	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C-401												
C-402												
C-403												
C-404												
C-405												
C-406												
C-407												
C-408												
C-409												
C-410												
C-411												
C-412												
C-413												
C-414												
C-415												
C-416												
C-417												

Program Level Course mapping with PSO Final Year (2020-21)

CO	PSO1	PSO2
C-401		
C-402		
C-403		
C-404		
C-405		
C-406		
C-407		
C-408		
C-409		
C-410		
C-411		
C-412		
C-413		
C-414		
C-415		
C-416		
C-417		