

### THIRD YEAR (2019-20)

<b>COURSE CODE</b>	<b>UNIVERSITY CODE</b>	<b>COURSE NAME</b>
<b>C-301</b>	RAS-501	MANAGERIAL ECONOMICS
<b>C-302</b>	RAS-502	INDUSTRIAL SOCIOLOGY
<b>C-303</b>	RCS-501	DATABASE MANAGEMENT
<b>C-304</b>	RCS-502	DESIGN AND ANALYSIS OF ALGORITHM
<b>C-305</b>	RCS-503	PRINCIPLE OF PROGRAMMING LANGUAGE
<b>C-306</b>	RCS-E12	WEB TECHNOLOGY
<b>*C-307</b>	*RCS-551	DBMS Lab
<b>*C-308</b>	*RCS-552	Design and Analysis of Algorithm Lab
<b>*C-309</b>	*RCS-553	Principle of Programming Language Lab
<b>*C-310</b>	*RCS-554	Web Technology Lab
<b>C311</b>	RAS-601	INDUSTRIAL MANAGEMENT
<b>C312</b>	RAS-602	CYBER SECURITY
<b>C313</b>	RCS-601	COMPUTER NETWORKS
<b>C314</b>	RCS-602	COMPILER DESIGN
<b>C315</b>	RCS-603	COMPUTER GRAPHICS
<b>C316</b>	RIT-E21	DESIGN AND DEVELOPMENT OF APPLICATIONS
<b>C317</b>	RIT-E22	DATA WAREHOUSING & DATA MINING
<b>*C318</b>	*RCS-651	COMPUTER NETWORKS LAB
<b>*C319</b>	*RCS-652	Compiler Design Lab
<b>*C320</b>	*RCS-653	COMPUTER GRAPHICS LAB
<b>*C321</b>	*RCS-654	DATA WAREHOUSING & DATA MINING LAB

## THIRD YEAR (2019-20)

### MANAGERIAL ECONOMICS (RAS-501): C301

Year of Study: 2019-20

Course Code	Course Outcome	Bloom's Knowledge Level (KL)
C-301.1	To acquire the knowledge of economic principles applied to a company's decision making in terms of economic viability.	K1
C-301.2	To develop the understanding of Supply, Elasticity of Supply and demand forecasting which contribute in the decision-making.	K6
C-301.3	To analyze the concept of industrial production, factors of production and various elements of cost.	K4
C-301.4	To explain about market, various pricing policies and determining price and output in optimizing the profit.	K2
C-301.5	To apply the knowledge of Indian Market and Economy as a whole to take various macro level industry decisions.	K3, K5

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C301.1		3	2	3	2	3	3	2				3
C301.2		3	2	2	2	3	3	2				2
C301.3		3	2	1	2	3	3	2				2
C301.4		3	2	3	2	3	3	3	2	3	3	1
C301.5		2	2	3	3	3	3	2				2
C301		3	2	2	2	3	3	2	2	3	3	2

CO	PSO1	PSO2
C301.1	1	1
C301.2	1	1
C301.3	1	2
C301.4	1	2
C301.5	1	2
C301	1	2

## THIRD YEAR (2019-20)

**SOCIOLOGY (RAS-502): C302**

**Year of Study: 2019-20**

<b>Course Code</b>	<b>Course Outcome</b>	<b>Bloom's Knowledge Level (KL)</b>
<b>C-302.1</b>	To recognize the nature and scope of sociology and pattern of organizational behaviour.	K1
<b>C-302.2</b>	To understand the productive system and industrial development in India.	K2, K4
<b>C-302.3</b>	To explain various Industrial Policy Resolutions and its application in industry.	K2, K3
<b>C-302.4</b>	To define grievances handling procedures and various agencies to resolve industrial dispute.	K1, K5
<b>C-302.5</b>	To develop various models of industrialization and cultural issues concerning consumer and society.	K6

<b>CO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>
<b>C302.1</b>	-	3	2	3	2	3	3	2	-	-	-	3
<b>C302.2</b>	-	3	2	2	2	3	3	2	-	-	-	2
<b>C302.3</b>	-	3	2	1	2	3	3	2	-	-	-	2
<b>C302.4</b>	-	3	2	3	2	3	3	3	-	-	-	1
<b>C303.5</b>	-	3	3	2	2	3	3	2	-	-	-	3
<b>C302</b>	-	3	2	2	2	3	3	2	-	-	-	2

<b>CO</b>	<b>PSO1</b>	<b>PSO2</b>
<b>C302.1</b>	1	1
<b>C302.2</b>	1	1
<b>C302.3</b>	2	2
<b>C302.4</b>	2	2
<b>C303.5</b>	1	1
<b>C302</b>	1	1

## THIRD YEAR (2019-20)

**DATABASE MANAGEMENT (RCS-501): C303**

**Year of Study: 2019-20**

Course Code	Course Outcome	Bloom's Knowledge Level (KL)
<b>C303.1</b>	Students can differentiate database systems from file systems by enumerating the features provided by database systems and describe each in both function and benefit.	K1, K2, K4
<b>C303.2</b>	Students are able to create and populate a RDBMS for a real life application, with constraints and keys using SQL.	K6
<b>C303.3</b>	Students can analyze the existing design of a database schema and apply concepts of normalization to design an optimal database.	K4, K6
<b>C303.4</b>	Students can apply mechanisms for information retrieval from a database satisfying the ACID properties.	K3
<b>C303.5</b>	Students apply various techniques for concurrency control in multi-transaction systems.	K3, K5

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
<b>C303.1</b>	3	3	3	3	3		2	2	2	3	3	3
<b>C303.2</b>	3	3	3	3	3		2	2	3	3	3	3
<b>C303.3</b>	3	3	3	3	3		2	2	3	3	3	3
<b>C303.4</b>	2	2	2	2	3	2	2	2	2	2	2	2
<b>C303.5</b>	2	2	2	2	3	3	2	2	3	3	3	3
<b>C303</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>

CO	PSO1	PSO2
<b>C303.1</b>	3	3
<b>C303.2</b>	3	3
<b>C303.3</b>	3	3
<b>C303.4</b>	3	3
<b>C303.5</b>	3	3
<b>C303</b>	<b>3</b>	<b>3</b>

## THIRD YEAR (2019-20)

### DESIGN AND ANALYSIS OF ALGORITHM (RCS-502) : C304 Year of Study: 2019-20

Course Code	Course Outcome	Bloom's Knowledge Level (KL)
<b>C-304.1</b>	Students demonstrate knowledge to select appropriate algorithms and the methods to measure and analyze the performance of an algorithm. Able to implement appropriate sorting/searching technique for given problem.	K3, K4
<b>C-304.2</b>	Ability of understanding and applying various advanced data structures concepts like red black and B, B plus tree	K1, K2, K3
<b>C-304.3</b>	Students demonstrate knowledge of problem solving using greedy approach and the approach to divide the problem into smaller problems of same nature (Divide and Conquer approach).	K3
<b>C-304.4</b>	Students demonstrate knowledge of problem-solving using Backtracking, Dynamic Programming and Branch and Bound techniques.	K3
<b>C-304.5</b>	Students have hands on experience on various advanced topics on algorithms. Students can classify different NP Complete problem into various levels of complexity.	K2, K5, K6

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
<b>C304.1</b>	3	3	3	3	2		2			2	3	2
<b>C304.2</b>	3	3	3	3	3			2		3	3	2
<b>C304.3</b>	3	3	3	3	3		2	2	2	3	3	3
<b>C304.4</b>	3	3	3	3	3		2	2	2	3	3	3
<b>C304.5</b>	3	3	3	3	3		2	2	2	3	3	3
<b>C304</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>		<b>2</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>3</b>

CO	PSO1	PSO2
<b>C304.1</b>	3	3
<b>C304.2</b>	3	3
<b>C304.3</b>	3	3
<b>C304.4</b>	3	3
<b>C304.5</b>	3	3
<b>C304</b>	<b>3</b>	<b>3</b>

## THIRD YEAR (2019-20)

### PRINCIPLE OF PROGRAMMING LANGUAGE(RCS-503):C-305 Year of Study: 2019-20

Course Code	Course Outcome	Bloom's Knowledge Level (KL)
C-305.1	Students acquire knowledge of evolution of programming languages, their roles, paradigms and translation processes.	K1
C-305.2	Students understand various semantics and syntax related to program flow control in Imperative programming languages and code reusability.	K2, K3
C-305.3	Students can make the comparative analysis between imperative, object-oriented programming and functional programming paradigms.	K4
C-305.4	Students will acquire knowledge related to semantics of logical, network and concurrent programming environment.	K1, K6
C-305.5	Students will acquire the capability to implement lambda calculus queries.	K3, K5

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C305.1	2	3	3	2	3							
C305.2	3	3	2	3	3						2	2
C305.3		2	3	3						2		2
C305.4	3	3	3	3								2
C305.5	2	2	3	3	3							2
C305	3	3	3	3	3					2	2	2

CO	PSO1	PSO2
C305.1	3	3
C305.2	3	3
C305.3	3	3
C305.4	3	3
C305.5	3	3
C305	3	3

## THIRD YEAR (2019-20)

**WEB TECHNOLOGY (RCS-E12): C306**

**Year of Study: 2019-20**

Course Code	Course Outcome	Bloom's Knowledge Level (KL)
<b>C-306.1</b>	Students are introduced to the concept of Web technologies, Internet, Client-Server Computing and elementary Core Java. Students also understand how to design, implement, test, debug, and document programs that use core java concepts and graphical user interfaces in Java using applet and AWT that respond to different user events. .	K1, K2, K3, K6
<b>C-306.2</b>	Student is familiarized with fundamental language in Web Technologies and acquire knowledge and skills for creation of web site considering both client and server side. Students are able to implement interactive web page(s) using HTML, CSS.	K1, K3
<b>C-306.3</b>	Students learn JavaScript and design a responsive web site using HTML5 and CSS3. Students has acquired the skill to do networking using java	K1, K6
<b>C-306.4</b>	Students are able to make a reusable software component, using Java Bean and understand web-based enterprise applications using Enterprise JavaBeans (EJB). Students also learn to access database through Java programs, using Java DataBase Connectivity (JDBC)	K4, K5
<b>C-306.5</b>	Students are able to develop servlet and JSP applications and implement Session Management techniques.	K3, K6

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
<b>C306.1</b>	3	2	3	3	2	2	2				2	2
<b>C306.2</b>	3	2	3	3	2	2	2				2	2
<b>C306.3</b>	3	2	3	3	2	2	2				2	2
<b>C306.4</b>	3	2	3	3	2	2	2				2	2
<b>C306.5</b>	3	2	3	3	2	2	2				2	2
<b>306</b>	3	2	3	3	2	2	2				2	2

CO	PSO1	PSO2
<b>C306.1</b>	3	3
<b>C306.2</b>	3	3
<b>C306.3</b>	3	3
<b>C306.4</b>	3	3
<b>C306.5</b>	3	3
<b>C306</b>	3	3

**Database Management System Lab (RCS-551) : C307**

**Year of Study: 2019-20**

### THIRD YEAR (2019-20)

Course Code	Course Outcome	Bloom's Knowledge Level (KL)
<b>C307.1</b>	Students can explain the features of relational database and SQL.	K1, K2
<b>C307.2</b>	Students can design ER Model for a database for a given real time application.	K3
<b>C307.3</b>	Students can create and populate an RDBMS for a given problem domain with constraints and keys using SQL.	K4, K6
<b>C307.4</b>	Students can apply data manipulation language to query, update and manage the database.	K5
<b>C307.5</b>	Students will understand the concepts of database security and integrity.	K2

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
<b>C307.1</b>	3	3	3	3	2		2	3		2	2	2
<b>C307.2</b>	3	3	3	3	3			3		3	2	2
<b>C307.3</b>	3	3	3	3	3		2	3	2	3	2	3
<b>C307.4</b>	3	3	3	3	3		2	3	2	3	2	3
<b>C307.5</b>	3	3	3	3	3		2	3	2	3	3	3
<b>C307</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>		<b>2</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>3</b>

CO	PSO1	PSO2
<b>C307.1</b>	3	3
<b>C307.2</b>	3	3
<b>C307.3</b>	3	3
<b>C307.4</b>	3	3
<b>C307.5</b>	3	3
<b>C307</b>	<b>3</b>	<b>3</b>



### THIRD YEAR (2019-20)

Course Code	Course Outcome	Bloom's Knowledge Level (KL)
<b>C-308.1</b>	Students are able to analyze the performance of various algorithms in best case, average case and worst case. Students are able to implement various sorting, searching and graph traversal algorithms.	K3, K4
<b>C-308.2</b>	Students develop better understanding of advanced data structures like rbtree, heaps and btrees.	K2, K6
<b>C-308.3</b>	Students acquire skill to identify the problem given and design the algorithm using various algorithm design techniques.	K1, K2, K5
<b>C-308.4</b>	Students develop better understanding of optimization techniques like dynamic programming, backtracking and branch and bound and their classical problems.	K2, K6
<b>C-308.5</b>	Students understand the importance of different algorithmic paradigms by comparing the performance of different algorithms for same problem in team.	K2, K4

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
<b>C308.1</b>	3	3	3	3	3		3	2	3	3	3	3
<b>C308.2</b>	3	3	3	3	3		3	2	3	3	3	3
<b>C308.3</b>	3	3	3	3	3		3	2	3	3	3	3
<b>C308.4</b>	3	3	3	3	3	2	3	2	3	3	2	2
<b>C308.5</b>	3	3	3	3	3	2	3	2	3	3	3	3
<b>C308</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>

CO	PSO1	PSO2
<b>C308.1</b>	3	3
<b>C308.2</b>	3	3
<b>C308.3</b>	3	3
<b>C308.4</b>	3	3
<b>C308.5</b>	3	3
<b>C308</b>	<b>3</b>	<b>3</b>

## THIRD YEAR (2019-20)

### Principles Of Programming Language Lab(NCS-553) : C309 Year of Study: 2019-20

Course Code	Course Outcome	Bloom's Knowledge Level (KL)
C-309.1	Students understand the significance of an implementation of programming language in a compiler or interpreter	K2, K3
C-309.2	Students learn and understand the benefits and constraints for implementation in imperative, object-oriented, functional, and logical programming language	K1, K2, K3
C-309.3	Student demonstrates the ability to implement projects in imperative, object-oriented, functional, and logical programming language	K3, K6
C-309.4	Students demonstrate the ability to analyze and select appropriate programming language for certain classes of programming problems	K3, K4, K5
C-309.5	Students understand good use of debuggers and related tools.	K2

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C309.1	2	3	3	3						2	2	
C309.2	2	3	3	3					2		2	2
C309.3	2	2	2	2							2	
C309.4	3	3	3	3					2	2	2	2
C309.5	2	3	3	2	3							
C309	2	3	3	3	3				2	2	2	2

CO	PSO1	PSO2
C309.1	3	3
C309.2	3	3
C309.3	3	3
C309.4	3	3
C309.5	3	3
C309	3	3

## THIRD YEAR (2019-20)

**Web Technology Lab (NCS-554): C310**

**Year Of Study: 2019-20**

Course Code	Course Outcome	Bloom's Knowledge Level (KL)
<b>C-310.1</b>	Student gets familiar with HTML and CSS web technologies for development and design of web pages.	K2, K6
<b>C-310.2</b>	Students are able to make console based applications for solving real life problems using syntactical and implementation knowledge of JAVA.	K1, K3
<b>C-310.3</b>	Students are able to design GUI based applications for solving real life problems applying knowledge of event handling using JAVA Swing component.	K3, K5, K6
<b>C-310.4</b>	Students are able to make interactive GUI based applications for solving problems applying knowledge of Multithreading, File I/O and Exception Handling using JAVA Swing component.	K3
<b>C-310.5</b>	Students are able to design web based applications for solving problems applying knowledge of advance JAVA concepts such as Servlets, JDBC, JSP and other web based technologies i.e. php	K4, K6

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
<b>C310.1</b>	3	3	3	3	3		2		3	2	3	3
<b>C310.2</b>	3	3	3	3	3	2	2		3		3	3
<b>C310.3</b>	3	3	3	3	3		2		3		3	3
<b>C310.4</b>	3	3	3	3	3		2		3		3	3
<b>C310.5</b>	3	3	3	3	3		2		3		3	3
<b>C310</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>		<b>2</b>		<b>3</b>	<b>2</b>	<b>3</b>	<b>3</b>

CO	PSO1	PSO2
<b>C310.1</b>	3	3
<b>C310.2</b>	3	3
<b>C310.3</b>	3	3
<b>C310.4</b>	3	3
<b>C310.5</b>	3	3
<b>C310</b>	<b>3</b>	<b>3</b>

## THIRD YEAR (2019-20)

**INDUSTRIAL MANAGEMENT (RAS-601): C311**

**Year of Study: 2019-20**

Course Code	Course Outcome	Bloom's Knowledge Level (KL)
<b>C-311.1</b>	Students are able to get knowledge about the fundamental tools and techniques in Industrial Engineering. It inculcates better understanding regarding application of the industrial management in the field of engineering.	K2, K3
<b>C-311.2</b>	Students improves interrelated work activities and production management in an industry. It emphasizes on the application of management tools for better projects and their productivity.	K3
<b>C-311.3</b>	Students learns about inventory and their models for better productivity and results in an organization.	K1
<b>C-311.4</b>	Students are able to understand the product quality, its techniques and overall quality management that helps to manage the job floor of an industry or a research organization efficiently and effectively by the optimized utilization of the resources for the maximum output.	K2, K3
<b>C-311.5</b>	Students are able to design network analysis in industrial projects	K2, K3

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
<b>C311.1</b>		3	2	3	2	3	3	2				3
<b>C311.2</b>		3	2	2	2	3	3	2				2
<b>C311.3</b>		3	2	1	2	3	3	2				2
<b>C311.4</b>		3	2	3	2	3	3	3	2	3	3	1
<b>C311.5</b>		3	2	2	1	3	3	2	2	2	2	2
<b>C311</b>		<b>3</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>2</b>

CO	PSO1	PSO2
<b>C311.1</b>	1	-
<b>C311.2</b>	1	-
<b>C311.3</b>	1	2
<b>C311.4</b>	1	2
<b>C311.5</b>	<b>1</b>	<b>2</b>
<b>C311</b>	<b>1</b>	<b>2</b>

## THIRD YEAR (2019-20)

**CYBER SECURITY (RAS-602): C312**

**Year of Study: 2019-20**

Course Code	Course Outcome	Bloom's Knowledge Level (KL)
<b>C-312.1</b>	Students are able to analyze cyber security risk management policies in order to adequately protect an organization's critical information and assets. Evaluate the computer network and information security needs of an organization.	K1, K2, K4, K5
<b>C-312.2</b>	Students learns and understand the basic taxonomy and terminology of firewalls, user access controls, host logging, network filtering, intrusion detection and prevention and encryption at all levels.	K1, K2
<b>C-312.3</b>	Students acquires the skills to develop secure information system. And also understand the physical security of IT assets.	K2, K3
<b>C-312.4</b>	Students are able to understand the security policies over the network and cyber law. To familiarize students with cyber laws and cybercrimes.	K1, K2
<b>C-312.5</b>	Students are able to analyze different cyber laws such as patent law, copyright law, IT act and cyber security aspects.	K4

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
<b>C312.1</b>	2			2		2	2	2				
<b>C312.2</b>	2			2		3	2	3	2	2	3	
<b>C312.3</b>	3			2		2	3	3	2	2	3	3
<b>C312.4</b>	2			3		2	3	2	2	2		3
<b>C312.5</b>	2			2		1	2	2	1	1	1	1
<b>C312</b>	<b>2</b>			<b>2</b>		<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>3</b>

CO	PSO1	PSO2
<b>C312.1</b>	2	
<b>C312.2</b>	2	
<b>C312.3</b>	2	<b>2</b>
<b>C312.4</b>	2	<b>2</b>
<b>C313.5</b>	2	<b>2</b>
<b>C312</b>	<b>2</b>	1

## THIRD YEAR (2019-20)

**COMPUTER NETWORKS (RCS-601): C313**

**Year of Study: 2019-20**

Course Code	Course Outcome	Bloom's Knowledge Level (KL)
<b>C-313.1</b>	Study the basic taxonomy and terminology of the computer networking and enumerate the layers of OSI model and TCP/IP model.	K1, K2
<b>C-313.2</b>	Students gets the understanding of data link layer concepts, design issues, and protocols.	K1, K2, K3
<b>C-313.3</b>	Students acquires the skills of the Network layer protocols and also classify the various routing protocols and analyze how to assign the IP addresses for the given network.	K2, K3, K4, K5
<b>C-313.4</b>	Students acquires the skills of the Transport layer protocols and interpreting congestion control algorithms in the sub-networks.	K2, K4
<b>C-313.5</b>	Student can understand various Application layer protocols.	K1, K2

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
<b>C313.1</b>	3	3	3	2	2	3	2		2			3
<b>C313.2</b>	3	3	3	2	2	3	2		2			2
<b>C313.3</b>	3	3	3	3	2	3	2		3			2
<b>C313.4</b>	3	3	2	2	2	3	2		3			2
<b>C313.5</b>	3	3	2	2	2	3	2		3			2
<b>C313</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>2</b>		<b>3</b>			<b>2</b>

CO	PSO1	PSO2
<b>C313.1</b>	<b>3</b>	<b>3</b>
<b>C313.2</b>	<b>3</b>	<b>2</b>
<b>C313.3</b>	<b>3</b>	<b>3</b>
<b>C313.4</b>	<b>2</b>	<b>3</b>
<b>C313.5</b>	<b>3</b>	<b>2</b>
<b>C313</b>	<b>3</b>	<b>3</b>

## THIRD YEAR (2019-20)

**COMPILER DESIGN (RCS-602): C314**

**Year of Study: 2019-20**

Course Code	Course Outcome	Bloom's Knowledge Level (KL)
<b>C-314.1</b>	Students are able to understand how a program written by a user is converted into a code that the machine understands using a compiler. Students are made familiar with commercial compilers like YAAC. Also understand the concept of ambiguous grammars and context free grammars.	K1, K2
<b>C-314.2</b>	Students are able to understand compiler parsing techniques. Students are skilled to represent the various symbols used in a program in a table that can be further used for processing.	K2, K3
<b>C-314.3</b>	Students are able to represent the program in the form of three address code and parse tree. Various translation schemes are demonstrated.	K2, K3, K4, K5
<b>C-314.4</b>	Students are able to implement and maintain the symbol table, allocate storage space and manage error detection and recovery.	K4, K5, K6
<b>C-314.5</b>	Students are able to generate optimized machine code that eventually runs on the hardware to carry out the execution.	K5, K6

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
<b>C314.1</b>	3	3	3	3	2		2	3		2	2	2
<b>C314.2</b>	3	3	3	3	3			3		3	2	2
<b>C314.3</b>	3	3	3	3	3		2	2	2	3	2	3
<b>C314.4</b>	3	3	3	3	3		2	3	2	3	2	3
<b>C314.5</b>	3	3	3	3	3		2	3	2	3	3	2
<b>C314</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>		<b>2</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>2</b>

CO	PSO1	PSO2
<b>C314.1</b>	3	3
<b>C314.2</b>	3	3
<b>C314.3</b>	2	3
<b>C314.4</b>	3	2
<b>C314.5</b>	<b>3</b>	<b>3</b>
<b>C314</b>	<b>3</b>	<b>3</b>

## THIRD YEAR (2019-20)

**COMPUTER GRAPHICS (RCS-603): C315**

**Year of Study: 2019-20**

Course Code	Course Outcome	Bloom's Knowledge Level (KL)
<b>C-315.1</b>	Students are able to understand the basics of computer graphics, different graphics system and discuss various algorithms for scan conversion and their comparative analysis.	K1, K2
<b>C-315.2</b>	Students are able to understand the use of geometric transformations on graphical objects and their application in composite form and also extract scene with different clipping methods	K1, K2, K3
<b>C-315.3</b>	Students are able to analyze complex graphic objects with 3-D viewing, 3-D transformations, clipping and use of various projections	K2, K3, K4
<b>C-315.4</b>	StudentStudents are able to generate the Bezier and Bspline curves with mathematical interpolating functions with use of blending parameters	K2, K3
<b>C-315.5</b>	Students are able to explore visible surface detection techniques for display of 3D scene on 2D view and use illumination models	K2, K4

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
<b>C315.1</b>	3	3	3	2	2	3	2					3
<b>C315.2</b>	3	3	3	2	2	3	2					2
<b>C315.3</b>	3	3	3	3	2	3	2					2
<b>C315.4</b>	3	3	2	2	2		2					2
<b>C315.5</b>	3	3	2	2	2	3	2					2
<b>C315</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>2</b>					<b>2</b>

CO	PSO1	PSO2
<b>C315.1</b>	3	2
<b>C315.2</b>	3	2
<b>C315.3</b>	3	2
<b>C315.4</b>	3	2
<b>C315.5</b>	<b>3</b>	<b>2</b>
<b>C315</b>	<b>3</b>	<b>2</b>



## THIRD YEAR (2019-20)

### DESIGN AND DEVELOPMENT OF APPLICATIONS (RIT-E21): C-316

Year of Study: 2019-20

Course Code	Course Outcome	Bloom's Knowledge Level (KL)
<b>C-316.1</b>	Students are able to understand, identify and create mobile applications with most suitable type and also able to perform requirements gathering, validation, publishing and delivery.	K1, K2
<b>C-316.2</b>	Students are able to evaluate and justify the type and architecture they have chosen for their work and also able to analyze and compare their work with existing work in the field.	K2, K3
<b>C-316.3</b>	Students understand, learn and apply designing applications with multimedia & web capabilities and integrate them with GPS, social media. They also learn about cloud environments and design patterns for mobile applications.	K3, K4
<b>C-316.4</b>	Students get the knowledge of development of applications using android platform. They are also able to understand and remember various aspects of android environment, creating interfaces, data persistence using SQLite database and interaction with server-side apps through Google maps, GPS, WI-FI & social media.	K2, K3, K6
<b>C-316.5</b>	Students understand and gain knowledge for Objective-C, iOS features, UI and touch frameworks, data persistence using SQLite. Also learn introduction to swift its features and iOS marketplaces.	K2, K3, K6

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
<b>C-316.1</b>	2											3
<b>C-316.2</b>	3	2	2				3			2		
<b>C-316.3</b>	3	2				2				3		
<b>C-316.4</b>	3	3	3		3	3	3			3		
<b>C-316.5</b>	3	2	3		3	3	3			3		
<b>C316</b>	<b>3</b>	<b>2</b>	<b>2</b>		<b>3</b>	<b>3</b>	<b>3</b>			<b>3</b>		<b>3</b>

CO	PSO1	PSO2
<b>C316.1</b>	2	
<b>C316.2</b>	2	2
<b>C316.3</b>	3	2
<b>C316.4</b>	3	3
<b>C316.5</b>	<b>3</b>	<b>3</b>
<b>C316</b>	<b>3</b>	<b>3</b>

## THIRD YEAR (2019-20)

**Dataware Housing & Data Mining (RIT-E22): C317**

**Year of Study:2019-20**

Course Code	Course Outcome	Bloom's Knowledge Level (KL)
<b>C-317.1</b>	Students learn the importance for data storage of an organization as a data warehouse. They are able to create and analyse the data warehouse for an organization.	K1, K2
<b>C-317.2</b>	Students learn about the various methods and techniques used for data warehousing implementation. They understand the knowledge about the concept of storing the data on multiple systems.	K2, K3, K4
<b>C-317.3</b>	Students understand the various issues while handling a data. They are able to analyse the raw data to make it suitable for various data mining algorithms.	K2, K4
<b>C-317.4</b>	Students well versed in all data mining algorithms, methods of evaluation. Students are able to implement the appropriate data mining methods like classification, clustering or Frequent Pattern mining on large data sets.	K2, K4, K5, K6
<b>C-317.5</b>	Students are able to use commercially available softwares for data mining. They can analyze the problem domain, use the data collected in enterprise, interpret and visualize the results.	K5, K6

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
<b>C317.1</b>	2		2	3	3	2	2	2	2	2	2	2
<b>C317.2</b>	3	2	2	2	3	2			3			
<b>C317.3</b>	3	3	3	3	3	2	3	3	2	2		3
<b>C317.4</b>	3	3	3	3	3	3	2		2			
<b>C317.5</b>		2	3	2	3	2	2	3	2		2	3
<b>C317</b>	3	3	3	3	3	2	2	3	2	2	2	3

CO	PSO1	PSO2
<b>C317.1</b>	3	2
<b>C317.2</b>	2	2
<b>C317.3</b>	3	3
<b>C317.4</b>	3	3
<b>C317.5</b>	2	2
<b>C317</b>	3	2

## THIRD YEAR (2019-20)

**Computer Networks Lab (NCS-651): C318**

**Year of Study: 2019-20**

Course Code	Course Outcome	Bloom's Knowledge Level (KL)
<b>C-318.1</b>	Students are able to understand and simulate various network topologies using CISCO packet tracer.	K1, K2, K5
<b>C-318.2</b>	Students are able to create network in CISCO Packet Tracer using Routers connected with other network access equipment (like switches and buses) subsequently connected with end devices. Use commands to establish connectivity among them.	K3, K4, K6
<b>C-318.3</b>	Students are able to understand and implement network layer protocols (like DHCP, RIP, OSPF) using CISCO packet tracer.	K2, K3
<b>C-318.4</b>	Students are able to resolve IP address to host name and host name to IP address using JAVA/C.	K3, K4
<b>C-318.5</b>	Students are able to implement a TCP based Client-Server System for one sided communication in JAVA/C.	K3, K6

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
<b>C318.1</b>	2	2	2	2	2	2	2		2			2
<b>C318.2</b>	2	2	2	2	2	2	2		2			2
<b>C318.3</b>	3	3	3	3	2	3	2		3			2
<b>C318.4</b>	3	3	3	3	3	3	2		3			2
<b>C318.5</b>	3	3	2	2	2	3	2		3			2
<b>C318</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>2</b>		<b>3</b>			<b>2</b>

CO	PSO1	PSO2
<b>C318.1</b>	3	2
<b>C318.2</b>	3	2
<b>C318.3</b>	3	3
<b>C318.4</b>	3	2
<b>C318.5</b>	3	3
<b>C318</b>	<b>3</b>	<b>3</b>

## THIRD YEAR (2019-20)

**Compiler Design Lab (NCS-652): C319**

**Year of Study: 2019-20**

Course Code	Course Outcome	Bloom's Knowledge Level (KL)
<b>C-319.1</b>	Students are able to gain knowledge about language processing Tools like LEX and YACC.	K1, K2,
<b>C-319.2</b>	Students are able to check whether regular expressions belong to grammars or not.	K4
<b>C-319.3</b>	Students are able to understand the concepts like grammars, languages, operators and they are also able to check whether grammar is ambiguous or not and its removal using left recursion.	K3, K4
<b>C-319.4</b>	Students are able to understand various parsing techniques like shift reduce, LR parsing.	K2, K3
<b>C-319.5</b>	Students are able to understand code optimization algorithms.	K5, K6

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
<b>C319.1</b>	3	3	3	3	2			3	3	2		2
<b>C319.2</b>	3	3	3	3	3			3	3	3		2
<b>C319.3</b>	2	3	3	3	3			3	3	3		3
<b>C319.4</b>	3	3	3	3	3			3	3	3		3
<b>C319.5</b>	3	3	3	3	3			3	3	3		3
<b>C319</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>			<b>3</b>	<b>3</b>	<b>3</b>		<b>3</b>

CO	PSO1	PSO2
<b>C319.1</b>	3	<b>3</b>
<b>C319.2</b>	3	<b>2</b>
<b>C319.3</b>	3	<b>3</b>
<b>C319.4</b>	3	<b>3</b>
<b>C319.5</b>	3	<b>3</b>
<b>C319</b>	<b>3</b>	3

## THIRD YEAR (2019-20)

**Computer Graphics Lab (NCS-653): C320**

**Year of Study: 2019-20**

<b>Course Code</b>	<b>Course Outcome</b>	<b>Bloom's Knowledge Level (KL)</b>
<b>C-320.1</b>	Students are able to understand the basic concepts of computer graphics and implement the line and circle generation algorithms.	K3
<b>C-320.2</b>	Students are able to design scan conversion problems using C programming	K3
<b>C-320.3</b>	Students are able to apply clipping and filling techniques for modifying an object.	K3, K4
<b>C-320.4</b>	Students are able to understand the concepts of different type of geometric transformation of objects in 2D and 3D	K3, K4
<b>C-320.5</b>	Students are able to understand the practical implementation of modeling, rendering, viewing of objects in 2D	K1

<b>CO</b>	<b>PO 1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>
<b>C320.1</b>	3	2	3	3	2	3	3					2
<b>C320.2</b>	3	3	3	2	2	3	2	2				3
<b>C320.3</b>	3	3	3	2	2	3	2			3		2
<b>C320.4</b>	2	2	3	2	2	3	2					2
<b>C320.5</b>	3	3	2	2	2			2				
<b>C320</b>	3	3	3	2	2	3	2	2		3		2

<b>CO</b>	<b>PSO1</b>	<b>PSO2</b>
<b>C320.1</b>	3	2
<b>C320.2</b>	2	3
<b>C320.3</b>	3	3
<b>C320.4</b>	3	2
<b>C320.5</b>	2	3
<b>C320</b>	3	3

## THIRD YEAR (2019-20)

**Data Warehousing And Data Mining Lab (NCS-654): C321      Year of Study: 2019-20**

Course Code	Course Outcome	Bloom's Knowledge Level (KL)
<b>C-321.1</b>	Students are able to implement the OLAP operations and an ETL tool.	K1, K2
<b>C-321.2</b>	Students are able to organize and prepare the data needed for data mining using pre preprocessing techniques	K2, K5
<b>C-321.3</b>	Students are able to implement the appropriate data mining methods like classification, clustering or Frequent Pattern mining on large data sets.	K2, K3
<b>C-321.4</b>	Students are able to define and apply metrics to measure the performance of various data mining algorithms	K4
<b>C-321.5</b>	Students are able to analyze the problem domain, use the data collected in enterprise, apply the appropriate data mining technique, interpret and visualize the results using modern machine learning tools like WEKA.	K4

<b>CO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>
<b>C321.1</b>	2	2	2		3	3		2	2	2	2	3
<b>C321.2</b>	3	3		3	3	3	2	2	2	2	2	2
<b>C321.3</b>	3	3	3	2	3	2	3		2			3
<b>C321.4</b>	2	3	2	3	3		2		2			2
<b>C321.5</b>	3	3	3	3	3	3	3	2	3	2	2	3
<b>C321</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>3</b>

<b>CO</b>	<b>PSO1</b>	<b>PSO2</b>
<b>C321.1</b>	3	3
<b>C321.2</b>	3	3
<b>C321.3</b>	3	3
<b>C321.4</b>	2	2
<b>C321.5</b>	3	3
<b>C321</b>	<b>3</b>	<b>3</b>