

K.S.Rangasamy College of Arts& Science, (Autonomous), Tiruchengode-637 215

Department of Computer Science



BACHELOR OF SCIENCE (COMPUTER SCIENCE)

PROGRAMME OUTCOMES (PO)

After completion of the programme, the graduates will be able to

PO1: Apply the fundamental knowledge in algorithms, programming languages and technical skills to solve problems.

PO2: Exhibit the acquired skills in different domains such as Project Management, Risk Management and Change Management.

PO3: Identify and formulate the techniques, skills, modern tools to solve real time problems.

PO4: Design and construct the software systems of varying complexity with awareness on innovation and sustainable development.

PO5: Analyze the local and global impact of ecofriendly hardware/software applications for sustainable development with professional and ethical responsibilities.

PROGRAMME SPECIFIC OUTCOMES (PSO)

After completion of the programme, the graduates will be able to

PSO1: Define the essential working principles of hardware and software systems.

PSO2: Apply design and development strategy in the creation of software systems.

PSO3: Develop independent thinking, possess problem solving skills and excel in the capability for self-learning.

PSO4: Use knowledge for the development of real time applications with innovative ideas and emerging technologies.

PSO5: Understand and formulate professional, ethical, legal, security and social issues and responsibilities for the computing profession.

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K. S. Rangasamy College of Arts & Science
(Autonomous)
TIRUCHENGODE - 637 215
Namakkal-Dt. Tamil Nadu, INDIA

MR. M. PRASAD, M.Sc., M.D.A.
Controller of Examinations
K.S. Rangasamy College of Arts & Science (Autonomous)
Tiruchengode - 637 215, Tamil Nadu, India

SEMESTER I - COURSE OUTCOMES (CO)
After completion of the course, the students will be able to

18UCSM101	CORE I: PROBLEM SOLVING TECHNIQUES AND C PROGRAMMING
CO1	Attain problem solving ability.
CO2	Know the basic terminology of C Programming.
CO3	Develop programs using control structures and arrays.
CO4	Understand the String handling and functions.
CO5	Develop the program using Pointers and Structure concepts.

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	M	H	M	L	M	L	H	H	H
CO2	H	M	H	M	L	M	M	H	H	M
CO3	H	M	H	M	L	M	H	H	H	H
CO4	H	M	M	M	L	M	M	H	H	H
CO5	H	M	L	M	L	M	M	M	M	M

H-High; M-Medium; L-Low

18UCSM102	CORE II: INFORMATION TECHNOLOGY
CO1	Understand the basic components of a computer system.
CO2	Aware of secondary storage devices and their characteristics.
CO3	Understand the concepts and fundamentals of data communication and computer networks.
CO4	Utilize database management systems to manipulate data for various applications.
CO5	Gain knowledge of Internet technologies and basic web authoring.

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	M	H	L	L	H	H	H	M	M
CO2	L	L	L	M	H	H	M	M	H	H
CO3	M	M	L	L	H	M	H	M	H	H
CO4	M	M	H	M	L	M	H	M	M	H
CO5	H	H	M	M	L	H	H	M	H	H

H-High; M-Medium; L-Low
A. S. Rangasamy College of Arts & Science (Autonomous)
TIRUOHENGODE - 637 215
Tamil Nadu

PRINCIPAL
A. S. Rangasamy College of Arts & Science
(Autonomous)
TIRUOHENGODE - 637 215

Mr. M. KRASAD,
Controller of Examinations
A. S. Rangasamy College of Arts & Science (Autonomous)
Tiruhengode - 637 215, Tamil Nadu.

18UCSMP101	CORE PRACTICAL I: PROGRAMMING IN C
CO1	Develop simple programs.
CO2	Implement various control structures.
CO3	Develop program using Arrays and String Handling concepts.
CO4	Implement Function and Structure concepts.
CO5	Understand Pointer concepts.

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	M	H	M	L	M	L	H	H	H
CO2	H	M	H	M	L	M	M	H	H	M
CO3	H	M	H	M	L	M	H	H	H	H
CO4	H	M	M	M	L	M	M	H	H	H
CO5	H	M	L	M	L	M	M	M	M	M

H-High; M-Medium; L-Low

18UCSMP102	CORE PRACTICAL II:OFFICE PACKAGE
CO1	Create personal, academic, and business documents in a professional way.
CO2	Enhance word processing skills using the required tools.
CO3	Understand the basic concepts of spreadsheets and usage of formulae.
CO4	Create and manipulate simple slide shows with outline and notes.
CO5	Improve the quality of output in terms of presentations.

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	M	H	L	L	H	H	H	M	M
CO2	L	L	L	M	H	H	M	M	H	H
CO3	M	M	L	L	H	M	H	M	H	H
CO4	M	M	H	M	L	M	H	M	M	H
CO5	H	H	M	M	L	H	H	M	H	H

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Ms. M. Prasad
 Controller of Examinations
 K.S. Rangasamy College of Arts & Science (Autonomous)
 Tiruchengode - 637 215, Tamilnadu, India.

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 K. S. Rangasamy College of Arts & Science
 (Autonomous)
 TIRUCHENGODE - 637 215
 Namakkal-Dt. Tamil Nadu, INDIA

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 K. S. Rangasamy College of Arts & Science
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18UCSMP102	CORE PRACTICAL II:OFFICE PACKAGE
CO1	Create personal, academic, and business documents in a professional way.
CO2	Enhance word processing skills using the required tools.
CO3	Understand the basic concepts of spreadsheets and usage of formulae.
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MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	M	H	L	L	H	H	H	M	M
CO2	L	L	L	M	H	H	M	M	H	H
CO3	M	M	L	L	H	M	H	M	H	H
CO4	M	M	H	M	L	M	H	M	M	H
CO5	H	H	M	M	L	H	H	M	H	H

H-High; M-Medium; L-Low

18UMACSA101	ALLIED I: ALGEBRA AND CALCULUS
CO1	Calculate Eigen values and Rank of a matrix
CO2	Solve algebraic equations
CO3	Understand the variations in variables.
CO4	Understand the difference between partial and total differentiation
CO5	Evaluate simple integrations

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	M	H	M	M	M	M	H	M	M
CO2	M	M	H	M	M	M	M	H	M	M
CO3	M	H	H	M	M	M	H	H	M	M
CO4	M	H	M	H	M	M	H	M	H	M
CO5	M	M	M	H	M	M	M	M	H	M

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 Namakkal-Dt. Tamil Nadu. INDIA

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 K. S. Rangasamy College of Arts & Science (Autonomous)
 TIRUCHENGODE - 637 215
 Namakkal-Dt. Tamil Nadu. INDIA

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SEMESTER II - COURSE OUTCOMES (CO)
After completion of the course, the students will be able to

18UCSM201	CORE III: OBJECT ORIENTED PROGRAMMING WITH C++
CO1	Understand the difference between Procedure-oriented and Object-Oriented Programming.
CO2	Create classes and objects with different types of functions.
CO3	Use Constructor and Destructor functions in a proper way.
CO4	Approach a program logically using Inheritance and Polymorphism.
CO5	Understand I/O Streams, File Pointer concepts and Templates.

MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	H	M	M	H	L	H	H	M	M	H
CO2	H	M	H	H	L	M	H	H	H	M
CO3	H	M	M	M	L	M	H	H	H	M
CO4	H	M	M	M	L	M	M	H	H	H
CO5	H	M	M	M	L	M	H	M	M	H

H-High; M-Medium; L-Low

18UCSM202	CORE IV: COMPUTER ARCHITECTURE
CO1	Understand the basic concepts of logic circuits.
CO2	Know the data representation and micro operations
CO3	Evaluate the working principles of CPU.
CO4	Understand pipeline and vector processing concepts.
CO5	Identify Input, Output and memory organization.

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L	L	M	L	H	H	M	M	M	H
CO2	M	L	M	L	H	M	H	M	H	H
CO3	L	M	M	M	H	M	M	L	M	M
CO4	L	M	L	M	H	M	M	L	M	M
CO5	L	M	M	M	H	M	M	L	M	H

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18UCSMP201	CORE PRACTICAL III: PROGRAMMING IN C++
CO1	Implement OOPs concepts.
CO2	Solve numerical method problems.
CO3	Understand the various concepts associated with members functions.
CO4	Explore concepts associated with Inheritance.
CO5	Implement concepts associated with Files and Templates.

MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	H	M	M	H	L	H	H	M	M	H
CO2	H	M	H	H	L	M	H	H	H	M
CO3	H	M	M	M	L	M	H	H	H	M
CO4	H	M	M	M	L	M	M	H	H	H
CO5	H	M	M	M	L	M	H	M	M	H

H-High; M-Medium; L-Low

18UMACSA201	ALLIED II: NUMERICAL METHODS
CO1	Find solution of algebraic and transcendental equations.
CO2	Solve system of linear equations.
CO3	Interpolate unknown values from known values.
CO4	Know numerical methods of solving differential equations.
CO5	Find the solution of the integral equations.

MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	M	M	H	M	M	M	M	H	M	M
CO2	M	M	H	M	M	M	M	H	M	M
CO3	M	M	H	M	M	M	M	H	M	M
CO4	M	M	H	M	M	M	M	H	M	M
CO5	M	M	H	M	M	M	M	H	M	M

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Namakkal-Dt. Tamil Nadu, INDIA

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Controller of Examinations

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SEMESTER III - COURSE OUTCOMES (CO)
After completion of the course, the students will be able to

18UCSM301	CORE V: PROGRAMMING IN JAVA
CO1	Understand the basic terminology of Java Programming
CO2	Develop programs using control structures
CO3	Able to understand the interfaces and packages
CO4	Understand the multithreaded programming and exceptions
CO5	Develop program using Applets and files

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	M	H	M	L	L	M	L	M	L
CO2	H	H	M	H	L	M	H	M	H	H
CO3	H	H	H	M	L	M	M	M	M	H
CO4	H	H	H	H	L	M	M	M	M	H
CO5	H	H	H	H	L	M	H	M	H	H

H-High; M-Medium; L-Low

18UCSM302	CORE VI: DATA STRUCTURES
CO1	Attain the knowledge of linear and non-linear data structures and analyze the efficiency of the algorithms.
CO2	Handle operations like searching, insertion, deletion, traversing mechanism on linked list.
CO3	Understand the stack and queue with its applications.
CO4	Demonstrate different methods for traversing trees.
CO5	Demonstrate knowledge of various sorting and searching techniques.

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	M	L	M	H	H	M	H	M	H
CO2	H	M	M	M	M	M	H	H	H	H
CO3	M	H	M	M	M	M	H	H	H	H
CO4	M	H	M	M	L	M	H	H	H	H
CO5	M	H	L	M	M	H	H	H	H	H

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18UCSMP301	CORE PRACTICAL IV: PROGRAMMING IN JAVA
CO1	Able to build programs using control statements and arrays.
CO2	Develop programs using inheritance and overloading.
CO3	Able to build programs using interfaces and packages.
CO4	Develop programs to handle exceptions.
CO5	Able to build program using Applets and files.

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	M	H	M	L	L	M	L	M	L
CO2	H	H	M	H	L	M	H	M	H	H
CO3	H	H	H	M	L	M	M	M	M	H
CO4	H	H	H	H	L	M	M	M	M	H
CO5	H	H	H	H	L	M	H	M	H	H

H-High; M-Medium; L-Low

18UCSSBP301	SBC PRACTICAL I: WEB DESIGNING USING HTML, CSS (INTERNAL EVALUATION)
CO1	Able to create webpage using paragraph, list and table tags.
CO2	Design a web page using forms.
CO3	Able to design web page using frames and hyperlinks.
CO4	Able to design menus using CSS.
CO5	Create a webpage using various style sheets.

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	L	H	M	L	M	H	H	H	H
CO2	H	L	H	M	L	H	M	H	H	M
CO3	H	M	H	M	L	H	H	M	M	H
CO4	H	H	M	M	L	H	M	H	M	H
CO5	H	M	M	M	L	H	H	M	M	H

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18UCSAC301	ADD-ON COURSE I: DTP Office Automation (Practical)
CO1	Create documents and templates by applying different formatting styles.
CO2	Understand graphics by using various tools.
CO3	Understand CorelDraw workspace, tools, panels and basic techniques.
CO4	Create logos, advertisements and other graphic documents.
CO5	Understand the Layer basics and enhancing digital Photographs.

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	L	M	M	L	M	H	H	H	L
CO2	H	L	H	L	M	H	H	M	M	M
CO3	H	L	H	M	L	H	H	H	M	L
CO4	M	L	H	M	L	H	M	M	H	L
CO5	M	L	H	M	L	M	H	H	H	L

H-High; M-Medium; L-Low

18UMACSA301	ALLIED III: STATISTICAL METHODS
CO1	Find averages and positional averages.
CO2	Measure the degree of relationship between variables.
CO3	Measure the seasonal variations.
CO4	Gain knowledge on probability theory.
CO5	Know about discrete and continuous distributions.

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	M	H	M	M	M	M	H	M	M
CO2	M	M	H	M	M	M	M	H	M	M
CO3	M	M	H	M	M	M	M	H	M	M
CO4	M	M	H	M	M	M	M	H	M	M
CO5	M	M	H	M	M	M	M	H	M	M

H-High; M-Medium; L-Low

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Namakkal-Dt. Tamil Nadu, INDIA

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18UECCSA301	ALLIED - III: DIGITAL ELECTRONICS AND MICROPROCESSOR
CO1	Understand the structure of various number systems and its application in digital design.
CO2	Acquire the fundamental concepts and techniques used in digital electronics.
CO3	Examine the units in microcomputer based system.
CO4	Apply knowledge and demonstrate programming proficiency using the various addressing modes and data transfer instructions of the target microprocessor.
CO5	Design real world applications using 8085 microprocessor.


MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	M	M	L	L	H	M	M	L	L
CO2	H	M	L	M	L	H	M	L	M	L
CO3	H	H	M	L	L	H	H	M	L	L
CO4	M	M	L	L	L	M	M	L	L	L
CO5	H	H	M	H	M	H	H	M	H	M

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 Namakkal-Dt. Tamil Nadu, INDIA


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 Controller of Examinations
 K.S. Rangasamy College of Arts & Science (Autonomous)
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SEMESTER IV - COURSE OUTCOMES (CO)
After completion of the course, the students will be able to

18UCSM401	CORE VII: PROGRAMMING IN .NET (VB.NET & ASP.NET)
CO1	To describe the basic structure of a VB.NET and apply main features of the Integrated Development Environment (IDE).
CO2	To understand exception handling mechanisms and the elements of OOPs concepts.
CO3	To understand the usage of HTML controls in web form.
CO4	To attain knowledge on utilizing the validation controls.
CO5	To translate general requirements into data-related solutions using database concepts for real time applications.

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	H	M	M	H	M	M	M
CO2	H	H	M	M	L	H	H	H	H	H
CO3	H	H	M	M	L	H	H	M	H	H
CO4	H	M	H	M	L	H	H	H	H	M
CO5	H	H	H	H	M	H	H	H	H	M

H-High; M-Medium; L-Low

18UCSM402	CORE VIII: RELATIONAL DATABASE MANAGEMENT SYSTEMS
CO1	Understand the basic concepts of database.
CO2	Aware of logical design and Data Normalization.
CO3	Understand basics of SQL and effective query building concepts.
CO4	Familiar with basic database storage structures and access techniques.
CO5	Gain knowledge on Transaction Management.

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	H	L	H	L	M	M	M
CO2	H	H	H	M	L	M	H	H	H	H
CO3	H	H	H	M	M	M	H	H	M	M
CO4	M	M	M	H	H	H	H	H	H	H
CO5	M	H	H	M	L	M	M	M	M	H

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18UCSMP401	CORE PRACTICAL V:PROGRAMMING IN .NET
CO1	Understand the tools in .NET.
CO2	Improve the logical ability for developing program.
CO3	Create and manipulate Database.
CO4	Connect the backend with the frontend.
CO5	Maintain the data consistency.

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	H	M	M	H	M	M	M
CO2	H	H	M	M	L	H	H	H	H	H
CO3	H	H	M	M	L	H	H	M	H	H
CO4	H	M	H	M	L	H	H	H	H	M
CO5	H	H	H	H	M	H	H	H	H	M

H-High; M-Medium; L-Low

18UCSSBP401	SBC PRACTICAL II: JAVASCRIPT (INTERNAL EVALUATION)
CO1	Understand the basic concepts of HTML and JavaScript.
CO2	Implement interactive web pages using HTML and JavaScript.
CO3	Perform online validation in forms.
CO4	Apply a structured approach to identify the needs, interests and functionality of a website.
CO5	Build Dynamic Website using JavaScript.

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	M	M	M	L	M	H	H	H	M
CO2	H	M	M	M	L	H	H	M	H	M
CO3	H	M	M	L	L	H	H	H	M	M
CO4	H	M	L	M	L	H	H	H	H	M
CO5	H	M	M	L	M	H	M	H	H	M

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18UCSAC401	ADD-ON COURSE II:ANIMATION 3D Animation Lab (Practical)
CO1	Learn the basics of 3D Modeling and Texturing.
CO2	Enhance the 3D Rendering process and Trimmed surfaces.
CO3	Understand the basic concepts of Lighting and Shading Techniques.
CO4	Create and manipulate Animations with proper story boarding.
CO5	Improve the quality of Key frame Interpolations and File Formats.

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	L	M	M	L	M	L	M	M	M
CO2	H	L	H	L	M	H	M	H	H	M
CO3	H	L	H	M	L	H	M	M	M	L
CO4	M	L	H	M	L	H	H	H	M	L
CO5	M	L	H	M	L	H	H	H	M	L

H-High; M-Medium; L-Low

18UCSAL401	ADVANCED LEARNERS COURSE:MOBILE COMMERCE
CO1	Understand the basic concepts of E-commerce and its applications.
CO2	Perceive the knowledge of E-commerce technology .
CO3	Learn the technology, the applications, and the business model of mobile commerce and WAP.
CO4	Understand the security and payment methods of m-commerce.
CO5	Recognize the money infrastructure and fraud prevention in m-commerce.

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L	M	M	M	L	H	M	H	M	M
CO2	L	M	M	M	H	H	M	H	M	M
CO3	M	H	M	M	H	H	H	M	H	M
CO4	L	M	L	M	H	H	M	H	H	H
CO5	L	M	M	M	H	H	M	H	M	H

H-High; M-Medium; L-Low
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 K. S. Rangasamy College of Arts & Science
 (Autonomous)
 TIRUCHENGODE - 637 215
 Namakkal-Dt. Tamil Nadu, INDIA

Mr. M. PRASAD, M.Sc., M.B.A., etc.
 Controller of Examinations
 K.S. Rangasamy College of Arts & Science (Autonomous)
 Tiruchengode - 637 215

18UCSAL402	ADVANCED LEARNER COURSE: CYBER SECURITY
CO1	Know the fundamentals of Cyber Security.
CO2	Describe the tactics, techniques and procedures used by cyber criminals.
CO3	Discriminate how Cyber Security professionals use technologies, processes and procedures to defend all components of the network.
CO4	Define technologies, products and procedures used to protect confidentiality, ensure integrity and provide high availability.
CO5	Implement continuous network monitoring and provide real-time security solutions.

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	M	L	M	L	H	H	M	H	H
CO2	H	M	L	M	M	M	H	H	M	M
CO3	M	M	M	M	H	M	H	H	M	M
CO4	M	M	L	M	H	M	M	H	H	H
CO5	H	H	M	M	M	M	H	M	H	H

H-High; M-Medium; L-Low

18UMACSA401	ALLIED IV: OPERATIONS RESEARCH
CO1	Formulate and solve real life problems through LPP
CO2	Calculate the optimum transportation schedule
CO3	Find the optimum assignment model
CO4	Use the techniques for planning and scheduling of projects
CO5	Identify the optimum strategies in business

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	M	H	M	M	M	M	H	M	M
CO2	M	M	H	M	M	M	M	H	M	M
CO3	M	M	H	M	M	M	M	H	M	M
CO4	M	M	H	M	M	M	M	H	M	M
CO5	M	M	H	M	M	M	M	H	M	M

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K. S. Rangasamy College of Arts & Science
 (Autonomous)
 TIRUCHENGODE - 637 215
 Namakkal-Dt. Tamil Nadu, INDIA


Mr. M. PRASAD, M.Sc., M.B.A., etc.
 Controller of Examinations
 K.S. Rangasamy College of Arts & Science (Autonomous)

18UECCSA401	ALLIED-IV: INTERNET OF THINGS
CO1	Understand the basic principles, requirements, functions and system architecture of IoT.
CO2	Design IoT development boards and devices for RFID, WSN and M2M communication.
CO3	Choose sensors for Industrial and Automotive IoT, configure data communication Protocols.
CO4	Prototype embedded devices for IoT and M2M, embedded platforms and design software for IoT applications.
CO5	Analyze the functioning of IoT applications in smart premises, connected car, environment monitoring and agriculture through quantitative case studies.

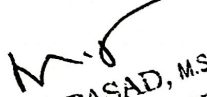
MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	M	M	L	L	H	M	M	L	L
CO2	H	H	L	M	L	H	H	L	M	L
CO3	M	H	M	M	M	M	H	M	M	M
CO4	H	M	M	M	M	H	M	M	M	M
CO5	M	M	M	H	H	M	M	M	H	H

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 (Autonomous)
 TIRUCHENGODE - 637 215
 Namakkal-Dt. Tamil Nadu, INDIA


Mr. M. PRASAD, M.Sc., M.B.A., M.Phil.
 Controller of Examinations
 K.S. Rangasamy College of Arts & Science (Autonomous)
 Tiruchengode - 637 215, Tamilnadu, India

SEMESTER V - COURSE OUTCOMES (CO)
After completion of the course, the students will be able to

18UCSM501	CORE IX: DATA MINING AND WAREHOUSING
CO1	Understand the basics of Data Warehousing and Pattern Mining.
CO2	Acquire knowledge about problem definition and classification techniques.
CO3	Understand the concepts classification and clustering Algorithms and its method.
CO4	Know the concepts of pattern discovery and data.
CO5	Gain knowledge of data models.

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	M	H	H	L	H	M	M	H	H
CO2	H	H	M	H	L	H	M	M	H	H
CO3	H	M	M	M	L	H	H	M	H	H
CO4	H	M	M	M	L	H	H	M	H	H
CO5	H	H	H	M	L	H	H	M	H	H

H-High; M-Medium; L-Low

18UCSM502	CORE X: SOFTWARE ENGINEERING
CO1	Understand the concepts of process, product and project development.
CO2	Acquire knowledge of requirement analysis.
CO3	Understand the knowledge of software design and testing.
CO4	Know the basics of software maintenance.
CO5	Gain knowledge of project management techniques.

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	M	M	H	L	H	M	M	H	H
CO2	M	H	M	H	M	H	M	H	H	H
CO3	M	M	H	H	L	H	H	M	H	H
CO4	M	M	H	M	L	H	H	M	H	H
CO5	M	H	M	M	L	H	H	M	M	H

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(Autonomous)
TIRUCHENGODE - 637 215
Namakkal-Dt. Tamil Nadu, INDIA

Mr. M. PRASAD, M.Sc., M.B.A., M.Phil.
Controller of Examinations
K.S. Rangasamy College of Arts & Science (Autonomous)
Tiruchengode - 637 215, Tamilnadu, Indi.

18UCSM503	CORE XI: OPERATING SYSTEMS
CO1	Analyze the structure of OS and process management.
CO2	Analyze and design the application to run thread model of operating systems through multi-threading.
CO3	Understand the concepts of paging.
CO4	Attain knowledge on files and storage management.
CO5	Describe protection and security concepts.

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	H	H	M	L	H	H	M	M	M
CO2	M	M	H	M	L	H	H	M	M	H
CO3	M	H	M	M	L	H	H	H	H	H
CO4	M	H	M	L	L	M	H	H	H	H
CO5	M	M	M	L	M	H	H	H	M	H

H-High; M-Medium; L-Low

18UCSEL501	ELECTIVE I: E-COMMERCE
CO1	Understand the basics of E-Commerce.
CO2	Know about E-marketing and its applications.
CO3	Understand the concepts of E-security and gain knowledge about the payment systems.
CO4	Understand the E-strategy and mobile commerce.
CO5	Acquire the knowledge of Legal and Ethical issues.

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L	M	M	M	L	M	M	M	M	H
CO2	L	M	M	M	H	H	M	M	H	H
CO3	M	H	M	M	H	H	H	H	H	H
CO4	L	M	L	M	H	H	H	M	M	H
CO5	L	M	L	M	H	H	H	H	H	H

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 K. S. Rangasamy College of Arts & Science
 (Autonomous)
 TIRUCHENGODE - 637 215
 Namakkal-Dt. Tamil Nadu, INDIA

M.S.
 Mr. M. PRASAD, M.Sc., M.B.A., M.A.
 Controller of Examinations
 K.S. Rangasamy College of Arts & Science (Autonomous)
 Tiruchengode - 637 215, Tamil Nadu, IN

18UCSEL502	ELECTIVE I: COMPUTER GRAPHICS
CO1	Understand the basics of computer graphics.
CO2	Acquire knowledge about two dimensional and their transformations.
CO3	Understand the concepts of virtualization and gain knowledge about the user interface between the computer graphics.
CO4	Know the concepts of three dimensional viewing methods.
CO5	Gain knowledge of Video, audio and mobile applications.

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	L	M	M	L	H	M	M	H	H
CO2	H	L	M	M	L	H	M	M	H	H
CO3	M	M	H	M	L	H	H	M	H	H
CO4	H	M	M	H	L	H	H	M	H	H
CO5	H	M	M	M	L	H	H	M	H	H

H-High; M-Medium; L-Low

18UCSMP501	CORE PRACTICAL VI:R -PROGRAMMING
CO1	Understand the concepts of descriptive statistics.
CO2	Gain knowledge on matrix manipulations.
CO3	Develop programs using control structures.
CO4	Apply computational techniques.
CO5	Learn exploratory data analysis.

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	L	M	M	L	H	M	M	H	H
CO2	H	M	M	M	L	H	H	M	H	H
CO3	H	M	M	M	L	H	H	M	H	H
CO4	H	M	M	M	L	H	H	M	M	H
CO5	H	H	H	M	H	H	H	M	H	H

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(Autonomous)
TIRUCHENGODE - 637 215
Namakkal-Dt. Tamil Nadu, INDIA

Mr. M. PRASAD, M.Sc., M.B.A., M.Phil.
Controller of Examinations
K.S. Rangasamy College of Arts & Science (Autonomous)
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18UCSMP502	CORE PRACTICAL VII: COMPUTER HARDWARE
CO1	Know the concepts of computer hardware components
CO2	Acquire the knowledge about the function of hardware
CO3	Install operating systems
CO4	Know about the software applications and utilities
CO5	Create users and groups

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L	M	M	M	L	H	M	M	H	H
CO2	M	H	M	M	L	H	H	M	H	L
CO3	M	H	M	M	L	H	H	H	H	L
CO4	M	H	M	M	M	H	H	M	M	H
CO5	M	H	L	M	M	H	H	M	H	H

H-High; M-Medium; L-Low

18UCSSBP501	SBC PRACTICAL III:MySQL (INTERNAL EVALUATION)
CO1	Write structured queries.
CO2	Implement record manipulation.
CO3	Understand the concepts classification and clustering Algorithms and its method.
CO4	Know the concepts of pattern discovery and data.
CO5	Gain knowledge of data models.

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	L	M	M	L	M	L	M	M	L
CO2	H	L	M	M	L	H	M	M	M	M
CO3	M	M	H	M	L	M	M	H	M	M
CO4	H	M	M	H	L	H	M	M	H	M
CO5	H	M	M	M	L	H	M	M	M	M

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 (Autonomous)
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 Namakkal-Dt. Tamil Nadu, INDIA

Mr. M. PRASAD, M.Sc., M.B.A., M.Phil
 Controller of Examinations
 K.S. Rangasamy College of Arts & Science (Autonomous)
 Tiruchengode - 637 215, Tamilnadu, India

SEMESTER VI - COURSE OUTCOMES (CO)
After completion of the course, the students will be able to

18UCSM601	CORE XII: PYTHON PROGRAMMING
CO1	Know the concepts of basics of Python Programming.
CO2	Understand the knowledge about the control statements.
CO3	Develop the programs using function concepts.
CO4	Implement the Error Handling functions.
CO5	Understand the OOPs features.

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	M	H	M	L	H	M	M	H	M
CO2	H	M	H	M	L	H	H	H	H	H
CO3	H	M	M	M	M	M	M	M	H	M
CO4	H	M	M	M	L	H	H	H	H	H
CO5	H	M	M	M	L	M	M	H	H	H

H-High; M-Medium; L-Low

18UCSM602	CORE XIII: COMPUTER NETWORKS (Fifth Unit as Self-study)
CO1	Understand the basics of Computer Networks.
CO2	Acquire knowledge about Digital Media Transmission.
CO3	Understand the concepts of Design issues and Networking Algorithms.
CO4	Know the basics of Network protocols.
CO5	Gain knowledge of Network Security.

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	M	L	M	L	H	M	M	H	H
CO2	M	H	L	M	L	H	M	M	H	H
CO3	M	H	L	H	L	H	H	M	H	H
CO4	H	H	M	H	L	H	H	M	H	H
CO5	H	M	M	M	H	H	H	M	H	H

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K. S. Rangasamy College of Arts & Science
(Autonomous)
TIRUCHENGODE - 637 215
Namakkal-Dt. Tamil Nadu, INDIA

Mr. N. PRASAD, M.Sc., M.B.A.,
Controller of Examinations
K.S. Rangasamy College of Arts & Science (Autonomous)
Tiruchengode, 637 215, Tamil Nadu, India

18UCSEL601	ELECTIVE I: CLOUD COMPUTING
CO1	Understand the basics of cloud computing
CO2	Acquire knowledge about cloud computing works in family, community and corporation.
CO3	Understand the concepts of virtualization and gain knowledge about Google, Amazon and Microsoft cloud with its services.
CO4	Know the cloud security and its applications.
CO5	Gain knowledge of Video, audio streaming and mobile cloud.

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	M	M	M	L	H	M	M	H	H
CO2	H	H	M	M	L	H	M	M	H	H
CO3	H	M	M	M	L	H	H	M	H	H
CO4	H	M	M	M	H	H	H	M	H	H
CO5	H	M	M	M	L	H	H	M	H	H

H-High; M-Medium; L-Low

18UCSEL602	ELECTIVE II: MOBILE COMPUTING
CO1	Describe the basic Wireless Transmission.
CO2	Overview of multiplexing techniques in wireless networks.
CO3	Understand telecommunication Systems concepts.
CO4	Attain the knowledge of satellite system.
CO5	Learn the concept of mobile network layer.

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	H	M	M	L	M	H	M	M	M
CO2	H	H	M	H	L	H	H	H	H	H
CO3	H	H	H	M	L	H	H	M	H	H
CO4	H	H	M	H	L	H	H	H	H	M
CO5	H	H	M	H	L	H	H	H	H	M

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 TIRUCHENGODE - 637 215
 Namakkal-Dt, Tamil Nadu, INDIA

Mr. M. PRASAD, M.Sc., M.B.A., M.Phil.
 Controller of Examinations
 K.S. Rangasamy College of Arts & Science (Autonomous)
 Tiruchengode - 637 215, Tamilnadu, India

18UCSMP601	CORE PRACTICAL VIII: PYTHON PROGRAMMING
CO1	Develop Simple programs.
CO2	Implement the LIST, TUPLES, SET and DICTIONARY.
CO3	Develop programs using Exceptions and loops.
CO4	Implement various modules like re module, SciPy and NumPy modules.
CO5	Develop program using data sets.

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	M	H	M	L	H	M	M	H	M
CO2	H	M	H	M	L	H	H	H	H	H
CO3	H	M	M	M	M	M	M	M	H	M
CO4	H	M	M	M	L	H	H	H	H	H
CO5	H	M	M	M	L	M	M	H	H	H

H-High; M-Medium; L-Low

18UCSMP602	CORE PRACTICAL IX: COMPUTER NETWORKING
CO1	Learn the concepts of network cables.
CO2	Understand the configuration process.
CO3	Implement the concept using peer to peer networking
CO4	Install the network devices using switch and hub.
CO5	Know about the LAN technologies.

MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	M	L	M	L	H	M	M	H	H
CO2	M	H	L	M	L	H	M	M	H	H
CO3	M	H	L	H	L	H	H	M	H	H
CO4	H	H	M	H	L	H	H	M	H	H
CO5	H	H	M	H	H	H	H	M	H	H

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 K. S. Rangasamy College of Arts & Science
 (Autonomous)

TIRUCHENGODE - 637 215 Mr. M. PRASAD, M.Sc., M.B.A., M.Phil.
 Namakkal-Dt. Tamil Nadu, INDIA
 Controller of Examinations
 K.S. Rangasamy College of Arts & Science (Autonomous)
 Tiruchengode - 637 215, Tamilnadu, India.


18UCSSBP601	SBC PRACTICAL IV: PHP (INTERNAL EVALUATION)
CO1	Develop programs to organize data using Array.
CO2	Implement programs using functions, control and looping statements.
CO3	Develop web page authentication
CO4	Implement record manipulation.
CO5	Develop web application.


MAPPING:

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	L	H	M	L	M	M	H	M	M
CO2	M	L	M	H	L	M	M	M	H	M
CO3	H	M	M	M	M	H	M	M	M	M
CO4	H	H	M	L	L	H	M	H	M	M
CO5	H	M	M	M	M	H	M	M	M	M

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 Namakkal-Dt. Tamil Nadu, INDIA


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 K.S. Rangasamy College of Arts & Science (Autonomous)
 Tiruchengode - 637 215, Tamilnadu, India.