Nallamuthu Gounder Mahalingam College

Department of Information Technology

Vision

The Vision of our Department is to assist the student in becoming proficient in using latest Technologies, and critical thinking being prepared for the next level of education and successfully attaining the skills and proficiencies required of today's work force.

Mission

The Information Technology department is committed to providing the highest quality technology services and support, thereby enhancing the operation, and educational capabilities among the students.

Programme Educational Objectives:

PEO1	Prepare the students to engage in independent learning for developing the Applications based on industry and social needs.
PEO2	To train students to a level where they can readily compete for the higher educational programs.
PEO3	To make students as computer professionals, who can be directly employed or start their own work as Programmer, Web Designer, Database User, Testing professional, Designer of a System and Network administrator or implementer.
PEO4	To familiar with the contemporary issues, latest trends in technological development and there by innovate new ideas and solutions to existing problems.
PEO5	To participate effectively as a member of a development team and undertake leadership roles in appropriate arena.

Programme Outcomes:

PO1	***Problem solving***: Ability to apply the knowledge of mathematical fundamentals and programming ability to solve complex problems in the field of Information Technology.
PO2	***Disciplinary knowledge***: Exhibit the knowledge of emerging technologies and tools to create need based customized applications for Industrial Automations.
PO3	***Entrepreneurship skills*:** Ability to become Entrepreneur by acquiring skills related to their domain and to address the industry and social needs with Environmental considerations.
PO4	***Research-related skills:*** Ability to cultivate research-based knowledge for innovating new ideas and solutions to contemporary issues by linking knowledge of Computer Science with other domains.
PO5	***Moral and ethical awareness/reasoning:*** Exhibit professional ethics on usage of digital data.
PO6	***Lifelong learning:*** Knack to pursue higher studies of specialization courses by clearing entrance exams in top institutions.
PO7	***Critical thinking:*** Aptitude to analyze, design and implement tools and applications to solve real world hitches.
PO8	***Information/digital literacy:*** Ability to handle different types of networks, hardware and other resources in large scale platform for Industry 4.0.
PO9	***Data analytic skills:*** Capability of presenting and securing voluminous data with emerging tools and techniques.
PO10	***Contemporary Skills***: Skill enrichment to provide Web based solutions using recent technologies and tools.

Programme Specific Outcomes:

PSO1	To identify and utilize latest updation on recent technologies by applying knowledge on Artificial Intelligence, Internet of Things and Mobile computing.
PSO2	To develop the ability to integrate Information technology with business applications and to impart the knowledge on fundamentals of research.

Mapping (POs and PSOs with COs): H - High, M - Medium, L – Low

Traceability Matrix of Generic Program Learning Outcomes with Generic Program Education Objectives

	PEO1	**PEO2**	**PEO3**	**PEO4**	**PEO5**
PO1: ***Problem solving***:	M	L	M	H	M
PO2: ***Disciplinary knowledge***	H	M	M	H	M
PO3: ***Entrepreneurship skills***	L	L	H	M	H
PO4: ***Research-related skills***	L	H	M	M	M
PO5: ***Moral and ethical awareness/reasoning***	L	M	H	L	H
PO6: ***Lifelong learning***	M	H	L	L	L
PO7: ***Critical thinking***	H	M	H	H	M
PO8: ***Information/digital literacy***	H	L	H	H	L
PO9: ***Data analytic skills:***	L	L	H	H	L
PO10: ***Contemporary Skills***	H	L	M	H	M

Programme Code:	B.Sc. – IT			**Programme Title:**	Information Technology	
Course Code:	22UIT101			**Title**	**Batch:**	2022 - 2025
				Programming in 'C'	**Semester:**	I
Lecture Hrs./Week	4	**Tutorial Hrs./Sem.**	4		**Credits:**	4

Course Objective

To cultivate programming ability on logic development, clear view on control structures, pointers (memory management), file handling, etc.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To keep in mind the fundamentals of C programming.	K1
CO2	To understand the concepts of problem solving techniques.	K2
CO3	To apply concepts and techniques for implementation.	K3
CO4	To analyze the level of logical thinking in program development	K4
CO5	To evaluate the program output.	K5

Mapping

PO/ PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	L	L	-	-	-	H	-	-	-	-	-	-
CO2	H	-	L	M	-	M	H	L	M	L	-	L
CO3	M	L	M	H	M	M	H	-	M	L	-	M
CO4	H	-	M	-	L	-	H	M	M	M	-	L
CO5	M	M	-	M	-	L	M	-	-	L	-	-

Programme Code:	B.Sc. - IT			Programme Title:	Information Technology	
Course Code:	22UIT102			Title	Batch:	2022 - 2025
				Computer System Architecture	Semester:	I
Lecture Hrs./Week	5	Tutorial Hrs./Sem.	-		Credits:	4

Course Objective

To obtain the basic knowledge of computer organization, input, output and memory organization.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To remember basic building block of digital computer system	K1
CO2	To understand the execution sequence of instruction through the processor	K2
CO3	To apply interfacing of various peripheral devices used with the system	K3
CO4	To analyze functioning of various parts of the computer from hardware point of view	K4
CO5	To judge the pros and cons of various types of memory organizations	K5

Mapping

PO/ PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	L	L	H	-	M	M	H	H	L	-	M	-
CO2	M	M	L	-	L	L	H	L	L	-	L	-
CO3	L	L	H	-	M	M	H	H	L	-	M	-
CO4	L	L	H	-	H	M	H	H	M	-	M	-
CO5	L	M	L	M	L	L	M	H	H	-	L	-

Programme Code:	B.Sc. - IT			**Programme Title :**	Information Technology	
Course Code:	22UIT1A1			**Title:**	**Batch :**	2022 - 2025
				Mathematics – I (Statistics)	**Semester :**	I
Lecture Hrs/Week:	4	**Tutorial Hrs./ Sem.**	5		**Credits :**	4

Course Objective

Learning various statistical methods like central tendency, dispersion, correlation and regression, probability and sampling theory.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To remember the formula of different Means, Median, Mode, Deviations, Correlation, Regression, Probability, Chi square test, Degree of Freedom, etc.	K1
CO2	To understand the concepts Central tendency, Dispersion, Correlation and regression, Probability and Sampling theory.	K2
CO3	To solve the problems by using formula to apply the programs	K3
CO4	To analyze the solution is right or wrong	K4
CO5	To evaluate the results through the program outputs	K5

Mapping

PO/ PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	M	M	M	H	H	M	L	-	-	L	-	-
CO2	M	M	H	H	H	H	-	-	-	L	-	M
CO3	H	-	L	H	H	M	M	-	-	-	-	M
CO4	M	M	M	H	H	L	-	-	-	-	-	H
CO5	L	L	M	H	H	M	-	-	-	-	-	M

Programme Code:	B. Sc. - IT			**Programme Title:**	Information Technology	
Course Code:	22UIT103			**Title**	**Batch:**	2022 - 2025
				Lab. I Programming in 'C'	**Semester:**	I
Practical Hrs./Week:	4	**Tutorial Hrs./Sem.**	-		**Credits**:	2

Course Objective

To understand, learn and apply the various programming concepts of 'C' and improving the programming skills in 'C'**.**

Course Outcomes

CO Number	CO Statement	Knowledge Level
CO1	To apply appropriate mathematical and scientific program logic	K3
CO2	To apply appropriate pointers, structure, and files	K3
CO3	To apply appropriate data structure concepts	K3
CO4	To analyze a problem in different logic	K4
CO5	To verify the solutions of various problems with input and output data	K5
CO6	To create a program using preprocessor directives.	K6

Mapping

PO/PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	H	M	L	-	M	M	L	-	L	-	-	-
CO2	H	M	-	-	M	H	L	-	-	M	-	-
CO3	H	M	M	-	H	H	M	-	L	-	-	-
CO4	H	M	M	-	M	M	H	-	M	-	-	-

Programme Code:	B.Sc.- IT			**Programme Title:**	Information Technology	
Course Code:	22UIT204			**Title**	**Batch:**	2022 - 2025
				Object Oriented Programming with Java	**Semester:**	II
Lecture Hrs./Week	4	**Tutorial Hrs./Sem.**	-		**Credits:**	4

Course Objective

To provide knowledge about basic concepts of OOPs, methods, interfaces, multithreads, packages and applets.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To keep in mind the basic concepts of OOPs	K1
CO2	To apprehend a knowledge about how to use java for internet applications	K2
CO3	To implement file, applet, thread concepts for web applications	K3
CO4	To review the usage of packages, exceptions and string concept for developing stand - alone java programs	K4
CO5	To assess the various types of stream classes and file handling	K5

Mapping

PO/ PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	H	H	M	-	M	H	H	L	L	L	M	M
CO2	H	H	H	-	L	L	H	L	M	H	M	M
CO3	M	H	H	-	L	M	H	L	M	H	M	M
CO4	H	H	H	M	M	M	M	L	M	M	-	-
CO5	H	H	M	M	L	M	M	M	M	L	-	-

Programme Code:	B. Sc. - IT		**Programme Title:**	Information Technology	
Course Code:	22UIT205		**Title**	**Batch:**	2022 - 2025
			Data Structures	**Semester:**	II
Lecture Hrs/Week:	4	**Tutorial Hrs./ Sem.** -		**Credits:**	4

Course Objective

To have adequate knowledge about linear data structures, queues, linked list, trees, searching, sorting and hashing.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To recollect basic concepts of data handle.	K1
CO2	To comprehend data structures like stack, queue, linked list and trees..	K2
CO3	To implement data structure techniques in problem solving	K3
CO4	To analyze space and time complexity of algorithms and to evaluate various data structures.	K4
CO5	To evaluate different algorithm results through the program outputs	K5

Mapping

PO/ PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	H	-	-	-	L	M	-	-	-	-	-	-
CO2	M	-	-	-	M	H	M	-	M	-	-	-
CO3	H	M	-	M	-		M	-		-	-	-
CO4	H	-	-	H	-	H	M	-	H	-	-	L
CO5	H	-	M	-	M	M	-	-	-	-	-	L

Programme Code:	B.Sc. - IT			**Programme Title:**	Information Technology	
Course Code:	22UIT2A2			**Title**	**Batch:**	2022 - 2025
				Mathematics II (Discrete Structures)	**Semester:**	II
Lecture Hrs./Week	4	**Tutorial Hrs./Sem.**	10		**Credits:**	4

Course Objective

On successful completion of this subject the students should know Set theory, Mathematical logic, Relations, Graph theory, Languages and Grammars

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To remember the basic concepts of set theory, mathematical logic, relations and graph theory.	K1
CO2	To infer the basic terminology of discrete mathematics	K2
CO3	To construct discrete notations in the programs	K3
CO4	To analyze discrete concepts through programs	K4
CO5	To determine languages and grammars for programming	K5

Mapping

PO/PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	H	M	L	L	L	H	M	M	-	M	-	M
CO2	-	M	M	M	-	M	M	L	L	L	-	M
CO3	M	M	M	M	-	M	-	L	-	-	-	M
CO4	M	L	L	L	L	M	L	H	-	-	-	L
CO5	-	M	L	H	L	M	-	-	-	M	-	-

Programme Code:	B.Sc. - IT			Programme Title:	Information Technology	
Course Code:	22UIT206			Title	Batch:	2022 - 2025
				LAB. II – Programming in Java	Semester:	II
Practical Hrs./Week	4	Tutorial Hrs./Sem.	-		Credits:	2

Course Objective

To apply various concepts of java like inheritance, multithreading, exception handling, AWT, applet, package for improving the programming skills in java.

Course Outcomes

On the successful completion of the course, students will be able to

CO	CO Statement	Knowledge
CO1	To apply basic object oriented programming concepts in java	K3
CO2	To analyze the usage of packages, exceptions in program development	K4
CO3	To prove the need of Applets in internet applications development	K5
CO4	To verify the database connectivity using java	K5
CO5	To create forms using AWT components	K6

Mapping

PO/PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO 9	PO10	PSO 1	PSO2
CO1	H	H	M	L	M	H	H	L	L	L	M	M
CO2	H	H	H	M	M	M	M	L	M	M	L	L
CO3	H	H	H	L	L	L	H	L	M	H	M	M
CO4	H	H	H	M	M	M	M	L	M	M	L	L
CO5	H	H	H	L	L	L	H	L	M	H	M	M

Programme Code:	B.Sc. - IT			Programme Title :	Information Technology	
Course Code:	22UIT307			Title:	Batch :	2022 - 2025
				Core V: Operating Systems	Semester :	III
Lecture Hrs/Week:	5	Tutorial Hrs./Sem.	-		Credits :	4

Course Objective

On successful completion of this subject the students should know the basic concepts of operating system, memory management, process management, information management, deadlocks, parallel processing, distributed processing and Windows NT, XP, & 7.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To recollect fundamentals of operating system concepts.	K1
CO2	To understand basic principles and advanced concepts of the operating system.	K2
CO3	To apply the different mathematical foundations, algorithmic principles with approaches in computer based systems.	K3
CO4	To analyze the various architectural components involved in OS and its applications.	K4
CO5	To evaluate different operating system configurations	K5

Mapping

PO/ PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	-	L	-	L	-	H	-	-	-	-	L	-
CO2	L	H	H	M	-	H	M	-	L	L	-	-
CO3	H	M	L	M	M	M	M	M	M	M	M	H
CO4	M	H	M	H	M	H	M	M	H	M	-	M
CO5	-	H	-	M	H	H	-	M	H	H	M	M

Programme Code:	B.Sc. - IT			**Programme Title:**	Information Technology	
Course Code:	22UIT308			**Title**	**Batch:**	2022 - 2025
				Core VI: Relational Database Management System	**Semester:**	III
Lecture Hrs./Week	4	**Tutorial Hrs./Sem.**	-		**Credits:**	4

Course Objective

To provide better understanding of various concepts of DBMS, Oracle, Normalization, Data Management and retrieval, PL/SQL Commands, Operations and Security.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To keep in mind the basic concepts of database	K1
CO2	To get the idea of a database from SQL statements	K2
CO3	To execute different forms of queries using SQL and PL/SQL statements	K3
CO4	To analyze various data models which describe the structure of database	K4
CO5	To interpret PL/SQL commands in programming	K5

Mapping

PO /PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	H	H	-	L	L	L	H	-	H	L	L	H
CO2	H	L	M	L	-	L	L	H	M	M	-	H
CO3	H	L	M	H	-	L	L	M	H	M	-	H
CO4	L	M	L	L	L	M	L	H	-	-	-	L
CO5	-	M	L	H	L	M	-	-	-	M	-	-

Programme Code:	B.Sc. - IT			**Programme Title:**	Information Technology	
Course Code:	22UIT3A3			**Title**	**Batch:**	2022 – 2025
				Allied III : Microprocessor and Assembly Language Programming	**Semester:**	III
Lecture Hrs./Week	5	**Tutorial Hrs./Sem.**	-		**Credits:**	4

Course Objective

Understand the evolution of microprocessor, Addressing modes, pin diagrams of various processors, Assembly Language Programs,Other Microprocessors, Advanced Microprocessor, Mobile Processors, Interfacing A/D converter and Applications.

Course Outcomes

CO Number	CO Statement	Knowledge Level
CO1	To Recall in mind the various microprocessor and microcontrollers manufacturer name, year, versions, bit-size, etc	K1
CO2	To Understand the basic concepts of 16 bit and 32 bit microprocessors.	K2
CO3	To apply the instructions in the Assembly Language Programs.	K3
CO4	To analyze the various products of processors and controllers.	K4
CO5	To Conclude the various products of processors and controllers.	K5

Mapping

PO/PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	M	M	H	H	H	H	M	H	H	H	M	M
CO2	H	M	H	H	M	M	H	M	H	M	M	H
CO3	M	H	H	H	M	H	H	M	M	H	H	M
CO4	M	M	M	M	M	M	M	H	H	M	M	M
CO5	M	M	L	H	M	M	M	M	M	L	M	M

Programme Code:	B.Sc. - IT			Programme Title:	Information Technology	
Course Code:	22UIT309			Title	Batch:	2022 - 2025
				Core Lab. III - RDBMS	Semester:	III
Practical Hrs./Week	4	Tutorial Hrs./Sem.	-		Credits:	2

Course Objective

To understand, learn and apply the various programming concepts in ORACLE (Basic commands, Trigger, Functions, etc.)

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To apply appropriate queries in oracle	K3
CO2	To apply various commands in SQL and PL/SQL and tags and concepts in the application.	K3
CO3	To analyze various database applications.	K4
CO4	To verify different forms of queries using SQL and PL/SQL statements	K5
CO5	To create various data models which describe the structure of database	K6

Mapping

PO /PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	M	M	M	M	-	H	-	M	-	-	-	L
CO2	M	M	H	L	L	M	L	H	-	-	-	L
CO3	-	M	L	H	L	M	-	-	-	M	-	-
CO4	M	M	H	L	L	M	L	H	-	-	-	L
CO5	-	M	L	H	L	M	-	-	-	M	-	-

Programme Code:	B.Sc. - IT			**Programme Title:**	Information Technology	
Course Code:	22UIT310			**Title**	**Batch:**	2022 - 2025
				Core Lab. IV – Web Designing (HTML & DHTML)	**Semester:**	III
Practical Hrs./Week	4	**Tutorial Hrs./Sem.**	-		**Credits:**	2

Course Objective

To know the Basic and Advanced Tags of HTML, Style sheets, and to know the basics of Angular and JavaScript.

Course Outcomes

On the successful completion of the course, students will be able to

CO	CO Statement	Knowledge
CO1	To develop webpage using various style sheet formats and HTML tags	K3
CO2	To analyze various style sheet formats for web pages	K4
CO3	To assess the various functions in Angular and JavaScript for creating applications	K5
CO4	To verify the usage of CSS creating applications	K5
CO5	To create applications using Advanced Tags of HTML	K6

Mapping

PO/PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO 9	PO10	PSO 1	PSO2
CO1	L	M	M	L	L	M	M	L	L	H	L	M
CO2	L	M	L	L	L	L	H	L	H	H	L	M
CO3	L	M	M	L	L	M	M	M	H	H	L	M
CO4	L	M	L	L	L	L	H	L	H	H	L	M
CO5	L	M	M	L	L	M	M	L	L	H	L	M

Programme Code:	B.Sc. - IT			Programme Title:	Information Technology	
Course Code:	22UIT3N1			Title	Batch:	2022 - 2025
				Non-Major Elective - I Social Networks	Semester:	III
Lecture Hrs./Week	1	Tutorial Hrs./Sem.	-		Credits:	2

Course Objective

To provide the overall view of various concepts of Social Networks such as history, classification of social media, services, pros and cons.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To keep in mind basics of Social Networks	K1
CO2	To understand the classification of Social Media	K2
CO3	To deploy various data privacy feature in social media platforms	K3
CO4	To analyze the security aspects in social media.	K4
CO5	To judge the pros and cons of various types of social media platforms	K5

Mapping

PO/ PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	-	M	H	M	H	-	L	H	H	M	-	M
CO2	-	M	H	M	H	-	L	M	H	M	-	M
CO3	-	H	H	H	H	-	M	M	H	H	-	M
CO4	-	H	H	H	H	-	M	M	H	H	-	M
CO5	-	L	H	M	H	M	M	M	H	H	-	M

Programme Code:	B.Sc. - IT			**Programme Title:**	Information Technology	
Course Code:	22UIT3N2			**Title**	**Batch:**	2022 - 2025
				Non-Major Elective I - Hardware & Networking	**Semester:**	III
Lecture Hrs./Week	1	**Tutorial Hrs./Sem.**	-		**Credits:**	2

Course Objective

To make understand various concepts of processors, input / output hardware, communication channels, networks with their types etc.

Course Outcomes

CO Number	CO Statement	Knowledge Level
CO1	To recollect the basics of I/O hardware.	K1
CO2	To understand about working of processors.	K2
CO3	To implement a network operating system.	K3
CO4	To analyze different types of networks and topologies.	K4
CO5	To Determine the concepts of Hardware and Networks.	K5

Mapping

PO /PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	L	M	H	H	H	H	M	H	H	H	H	H
CO2	L	M	H	H	M	M	H	M	H	M	M	H
CO3	M	M	H	M	M	M	H	H	M	H	M	M
CO4	M	M	M	L	M	L	M	H	H	M	M	M
CO5	M	L	L	M	M	L	M	M	M	L	M	M

Programme Code:	B.Sc. - IT			**Programme Title:**	Information Technology	
Course Code:	22UIT411			**Title**	**Batch:**	2022 - 2025
				Core VIII : Data Communication and Networks	**Semester:**	IV
Lecture Hrs./Week	4	**Tutorial Hrs./Sem.**	-		**Credits:**	4

Course Objective

To provide basic concepts of networking like data transmission, topology, OSI model, TCP/IP, transmission media, X.25 protocol, frame relay, ATM and accessing the internet.

Course Outcomes

On the successful completion of the course, students will be able

CO Number	CO Statement	Knowledge Level
CO1	To recall basics of data communication and networking	K1
CO2	To demonstrate various types of networks and topologies	K2
CO3	To make use of routing algorithms	K3
CO4	To categorize different ways of accessing the internet	K4
CO5	To Compare various types of protocols(X.25,Frame relay,ISDN,ATM)	K5

Mapping

PO/PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	H		M	M	H	H		H				
CO2	H	M	M	M	M	H		H	H	H		H
CO3	M	M	H	M	H	H	H	H				H
CO4	M	H	H	H	M	H	H	H	H	H		H
CO5	H		M	H	H	H	H	H		H		

Programme Code:	B.Sc. - IT			Programme Title:	Information Technology	
Course Code:	22UIT412			Title	Batch:	2022 - 2025
					Semester:	IV
Lecture Hrs./Week	4	Tutorial Hrs./Sem.	5	Core IX : Advanced Java Programming	Credits:	4

Course Objective

On successful completion of this subject the students can understand various concepts of Swings, Beans, JDBC, Servlet, JSP, JSTL, AJAX etc.

Course Outcome

On the successful completion of the course, students will be able

CO Number	CO Statement	Knowledge Level
CO1	To recollect the knowledge of GUI based applications, Web based applications and Database applications.	K1
CO2	To understand development of the Internet programming through java programming.	K2
CO3	To apply different powerful GUI components from existing applications to create new web pages.	K3
CO4	To analysis different applications for solving the real time problems in Industry.	K4
CO5	To Prove the various concepts using problems.	K5

Mapping

PO/PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	M	H	H	H	M	H	M	H	H	H	H	H
CO2	M	H	H	M	M	M	H	M	H	M	M	H
CO3	M	H	M	H	H	M	H	H	M	H	H	H
CO4	M	H	H	H	H	M	H	H	H	M	H	H
CO5	H	H	H	H	H	H	H	H	H	H	H	H

Programme Code:	B.Sc. - IT			Programme Title:	Information Technology	
Course Code:	22UIT4A4			Title	Batch:	2022 - 2025
				Allied IV : Software Engineering	Semester:	IV
Lecture Hrs./Week	4	Tutorial Hrs./Sem.	-		Credits:	4

Course Objective

Understand the software development life cycle, process models, requirements analysis, design concepts, software quality and testing techniques.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To recollect the various process models, requirements, Designs, Quality, Testing.	K1
CO2	To Understand the software development phases.	K2
CO3	To apply concepts into the testing lab.	K3
CO4	To evaluate the expected result with testing output.	K4
CO5	To justify the concepts of software development and testing phase.	K5

Mapping

PO /PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	M	M	H	H	H	H	M	H	H	H	M	M
CO2	H	M	H	H	M	M	H	M	H	M	M	H
CO3	M	H	H	H	M	H	H	M	M	H	H	M
CO4	M	M	M	M	M	M	M	H	H	M	M	M
CO5	M	M	L	H	M	M	M	M	M	L	M	M

Programme Code:	B.Sc. - IT			**Programme Title:**	Information Technology	
Course Code:	22UIT413			**Title**	**Batch:**	2022 - 2025
				Lab. - V Programming in Advanced Java	**Semester:**	IV
Practical Hrs./Week	6	**Tutorial Hrs./Sem.**	-		**Credits:**	3

Course Objective

Understand the practical experience in various concepts of Swings, Beans, JDBC, Servlet, JSP, JSTL, AJAX, etc...

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To apply the different components of java programming.	K3
CO2	To analysis the concepts to enhance in the application level.	K4
CO3	To validate the user friendliness and desire performance implied for given input.	K5
CO4	To test the different components of Advanced Java using programs.	K6
CO5	To create connectivity using database.	K6

Mapping

PO/ PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO 9	PO10	PSO 1	PSO2
CO1	H	H	M	L	M	H	H	L	L	L	M	M
CO2	H	M	H	M	H	M	M	L	H	M	L	L
CO3	H	H	M	L	L	L	H	L	M	H	L	M
CO4	H	H	H	M	M	M	M	L	M	M	L	L
CO5	H	H	M	L	L	L	H	L	M	H	H	M

Programme Code:	B.Sc. - IT			Programme Title:	Information Technology	
Course Code:	22UIT4N1			Title	Batch:	2022 - 2025
				Non Major Elective - II (Data Analytics)	Semester:	IV
Lecture Hrs./Week	1	Tutorial Hrs./Sem.	-		Credits:	2

Course Objective

To bestow an understanding of various concepts of data analytics, tools, applications and career opportunities in the field of data analytics.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To keep in mind the basic understanding of fundamentals of data analytics	K1
CO2	To understand the types of data analytics	K2
CO3	To apply the tools in various domain	K3
CO4	To identify career opportunities	K4
CO5	To interpret technical skill of data scientist	K5

Mapping

PO/PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	M	H	-	L	L	L	H	-	H	L	L	H
CO2	H	L	M	H	-	L	L	H	H	M	-	L
CO3	H	L	M	M	-	L	L	M	H	M	-	H
CO4	L	M	L	L	L	M	L	H	-	-	-	L
CO5	-	M	L	H	L	M	-	-	-	M	-	-

Programme Code:	B.Sc. - IT			Programme Title:	Information Technology	
Course Code:	22UIT4N2			Title	Batch:	2022 - 2025
				Non Major Elective - II : Computer Security	Semester:	IV
Lecture Hrs./Week	1	Tutorial Hrs./Sem.	--		Credits:	2

Course Objective

To understanding of various concepts of data security, cryptography, substitution techniques, encryption, decryption etc.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To find the basic fundamentals of data security	K1
CO2	To illustrate the concepts of ciphers and cryptography methods	K2
CO3	To organize the idea of encryption and decryption methods	K3
CO4	To discover basic issues in data security	K4
CO5	To compare substitution and Transposition techniques	K5

Mapping

PO/PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	-	-	M	-	H	H	H	M	H	M	-	H
CO2	M	-	-	-	H	H	M	M	M	-	-	H
CO3	-	M	H	H	-	-	M	H	M	M	-	H
CO4	-	M	H	-	-	H	H	H	H	M	-	H
CO5	M	-	-	H	-	-	M	M	-	-	-	-

Programme Code:	B.Sc. - IT			**Programme Title:**	Information Technology	
Course Code:	22UIT514			**Title**	**Batch:**	2022 - 2025
				Core – XI : Information Security	**Semester:**	V
Lecture Hrs./Week	6	**Tutorial Hrs./Sem.**	-		**Credits:**	4

Course Objective

To endow with better knowledge on various concepts of Security, Symmetric and Asymmetric algorithms, Digital certificates, E-mail, WWW, 2G, 3G etc.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To Recollect basic concepts of network security	K1
CO2	To Understand basic knowledge of cryptography	K2
CO3	To Apply diverse security mechanisms	K3
CO4	To Evaluate various security algorithms	K4
CO5	To Interpret different types of protocols	K5

Mapping

PO /PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	H	H	-	L	L	L	H	-	H	L	L	H
CO2	H	L	M	L	-	L	L	H	M	M	-	H
CO3	H	L	M	H	-	L	L	M	H	M	-	H
CO4	L	M	L	L	L	M	L	H	-	-	-	L
CO5	-	M	L	H	L	M	-	-	-	M	-	-

Programme Code:	B.Sc. - IT			Programme Title:	Information Technology	
Course Code:	22UIT515			Title	Batch:	2022 - 2025
				Core – XII : Python Programming	Semester:	VI
Lecture Hrs./Week	5	Tutorial Hrs./Sem.	5		Credits:	4

Course Objective

To understand various concepts of Python and expertise in Python programming knowledge

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To recollect basic programming concepts	K1
CO2	To understand and familiar with the basic coding in python	K2
CO3	To apply python terminologies for developing applications in small scale	K3
CO4	To figure out advanced concepts in python for developing web based	K4
CO5	To assess the data analysis tools usage in python.	K5

Mapping

PO/ PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	H	H	L	L	L	M	M	L	L	M	M	M
CO2	H	H	L	L	L	M	M	L	L	M	M	M
CO3	H	H	L	L	L	M	H	M	L	L	L	L
CO4	H	H	H	L	L	L	H	H	H	H	M	M
CO5	L	L	M	H	M	L	M	L	H	H	M	M

Programme Code:	B.Sc. - IT			Programme Title:	Information Technology	
Course Code:	22UIT5E1			Title	Batch:	2022 - 2025
				Core Elective-I: Data Mining and Analytics	Semester:	V
Lecture Hrs./Week	6	Tutorial Hrs./Sem.	-		Credits:	4

Course Objective

To give a better understanding of various concepts of Data mining includes KDD, Association rules, Classification, Clustering, and also about big data analytics

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To keep in mind the various basic concepts of data mining	K1
CO2	To understand different types of data mining to be applied in various domain areas	K2
CO3	To execute data mining algorithms for finding hidden interesting patterns in data.	K3
CO4	To evaluate various data mining algorithms to solve real world problems	K5
CO5	To judge the pros and cons in handling big data.	K5

Mapping

PO/ PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	H	H	H	H	L	M	H	H	H	M	H	H
CO2	L	M	M	H	L	M	M	L	H	L	H	H
CO3	M	M	M	H	L	L	L	L	H	L	M	M
CO4	H	H	H	H	L	M	M	M	H	L	M	M
CO5	L	M	M	M	H	L	M	H	H	M	M	M

Programme Code:	B.Sc. - IT			**Programme Title:**	Information Technology	
Course Code:	22UIT5E2			**Title**	**Batch:**	2022 - 2025
				Core Elective – I : Artificial Intelligence	**Semester:**	V
Lecture Hrs./Week:	6	**Tutorial Hrs./Sem.:**	-		**Credits:**	4

Course Objective

To embed a deep knowledge about search techniques, reasoning, game playing, expert systems and prolog.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To Understand the nature of AI problems and task domains of AI	K1
CO2	To Apply the appropriate search procedures to solve the problems by using best algorithms.	K3
CO3	To Analyze and select the suitable knowledge representation method.	K4
CO4	To Manipulate the acquired knowledge and infer new knowledge.	K4
CO5	To Demonstrate the development of AI and expert systems by encoding the knowledge	K5

Mapping

PO/PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	M	M	M	M	M	H	M	H	M	H	L	L
CO2	H	M	M	H	M	H	M	H	M	H	M	M
CO3	H	H	H	M	M	M	H	H	M	H	M	H
CO4	H	H	H	M	H	M	H	H	M	H	H	H
CO5	H	H	H	H	H	H	H	H	M	H	H	H

Programme Code:	B.Sc. - IT			**Programme Title:**	Information Technology	
Course Code:	22UIT5E3			**Title**	**Batch:**	2022 - 2025
				Core Elective – I : E-Commerce	**Semester:**	V
Lecture Hrs./Week	6	**Tutorial Hrs./Sem.**	--		**Credits:**	4

Course Objective

To learn E-Business revenue models, E-marketing, E-security, CRM, online payment systems and sales.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	**CO Statement**	**Knowledge Level**
CO1	To remember basic concepts of e-commerce	K1
CO2	To understand the role of E-marketing, E-security, E-payment systems in current scenario	K2
CO3	To apply mobile payments.	K3
CO4	To analyze various portalsassociated with e-commerce	K4
CO5	To justify legal and ethical issues in digital economy and phishing	K5

Mapping

PO/PSO / CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PSO1**	**PSO2**
CO1	M	-	-	-	-	-	-	-	L	-	-	-
CO2	H	M	H	M	-	M	-	M	M	M	-	H
CO3	H	M	H	M	M	H	M	M	M	M	-	H
CO4	M	H	M	-	-	H	-	-	L	-	-	H
CO5	H	-	M	M	H	M	-	M	-	M	-	H

Programme Code:	B.Sc. - IT			Programme Title:	Information Technology	
Course Code:	22UIT516			Title	Batch:	2022 - 2025
				Core Lab. – VII : Python Programming	Semester:	V
Practical Hrs./Week	5	Tutorial Hrs./Sem.	-		Credits:	3

Course Objective

To apply various concepts like string handling, mathematical functions, control structure and files in Python language.

Course Outcomes

On the successful completion of the course, students will be able to

CO	CO Statement	Knowledge
CO1	To deploy the list and tuple using control structures	K3
CO2	To examine need of files and its related functions	K4
CO3	To choose various packages suitable for the application	K5
CO4	To verify the usage of various in built functions and packages	K5
CO5	To create an application using python as a developing tool	K6

Mapping

PO/ PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO 9	PO10	PSO 1	PSO2
CO1	M	M	L	L	L	M	M	L	M	L	L	L
CO2	L	M	L	L	L	M	M	L	M	M	L	L
CO3	L	M	L	L	L	M	H	H	H	L	L	L
CO4	M	M	L	M	L	M	H	H	M	L	L	L
CO5	L	M	L	L	L	M	H	H	H	M	L	L

Programme Code:	B.Sc. - IT			Programme Title:	Information Technology	
Course Code:	22UIT517			Title	Batch:	2022 - 2025
				Core Lab - VIII : VisualProgramming	Semester:	V
Practical Hrs./Week	4	Tutorial Hrs./Sem.	-		Credits:	2

Course Objective

To understand the practical experience in various concepts of C#.Net and VB.NET (Data types, Statements, Properties, Inheritance, Polymorphism, Multithreading, and Database Connectivity and Web Services).

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statements	Knowledge Level
CO1	To experiment the concepts of web-oriented programs.	K3
CO2	To motivate to create menu-based program for basic manipulation	K4
CO3	To create applications using database connectivity	K6
CO4	To Test the field elements using validator control	K6
CO5	To design the data in grid control	K6

Mapping

PO/ PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO 9	PO10	PSO 1	PSO2
CO1	M	M	L	L	L	M	M	L	M	L	L	L
CO2	L	M	L	L	L	M	M	L	M	M	L	L
CO3	L	M	L	L	L	M	H	H	H	L	L	L
CO4	M	M	L	M	L	M	H	H	M	L	L	L
CO5	L	M	L	L	L	M	H	H	H	M	L	L

22UIT518

Programme Code:	B.Sc. - IT			Programme Title:	Information Technology	
Course Code:	22UIT5AL			Title	Batch:	2022 - 2025
				Advanced Learner Course – I : R Programming (Optional)	Semester:	V
Lecture Hrs./Week	SS	Tutorial Hrs./Sem.	-		Credits:	5*

Course Objective

To provide understanding of various concepts of R Programming like functions, variables,data types and standardizing etc.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To keep in mind a broad understanding of techniques of R Programming	K1
CO2	To understand the structural design of R Programming	K2
CO3	To apply R Programs in real time	K3
CO4	To analyze the issues associated with R Programming	K4
CO5	To Determine the various concepts of R Programming	K5

Mapping

PO/PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	L	M	H	H	H	H	M	H	H	H	M	M
CO2	L	M	H	H	M	M	H	M	H	M	M	H
CO3	M	H	H	M	M	H	H	M	M	H	M	M
CO4	M	M	M	L	M	M	M	H	H	M	M	M
CO5	M	L	L	M	M	L	M	M	M	L	M	M

Programme Code:	B.Sc. - IT			**Programme Title:**	Information Technology	
Course Code:	22UIT5S1			**Title**	**Batch:**	2022 - 2025
				Skill Based Lab. - II : Web Development (PHP)	**Semester:**	V
Practical Hrs./Week	3	**Tutorial Hrs./Sem.**	--		**Credits:**	2

Course Objective

To known the various programming concepts of database, string functions, date & time functions, content navigation and creating web page.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To motivate the students to create dynamic website	K4
CO2	To test the various tags in the application.	K5
CO3	To create files in the websiteusing database.	K6
CO4	To construct and upload a file to the server and create directory	K6
CO5	To choose and add the products that are selected from a web page	K6

Mapping

PO/PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	M	H	H	H	M	M		M		H		
CO2	M	H	H	H	M	H	M	M	M	H		H
CO3			M	H		H	M	M	H	H		H
CO4	M	H	M	H	M	H		M	H	H		
CO5	M	H	H	H		H	M		H	H		

Programme Code:	B.Sc. - IT			**Programme Title:**	Information Technology	
Course Code:	22UIT5S2			**Title**	**Batch:**	2022 - 2025
				Skill Based Lab. - II : Web Development (ASP.net)	**Semester:**	V
Practical Hrs./Week	3	**Tutorial Hrs./Sem.**	--		**Credits:**	2

Course Objective

To know various scripting concepts, tags in ASP.net Programming and creating web page.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	KnowledgeLevel
CO1	To make use of the different controls in asp.net.	K3
CO2	To analyze various applications in the web.	K4
CO3	To create websites withdatabase.	K6
CO4	To Test the field elements using validator control	K6
CO5	To design the data in grid control	K6

Mapping

PO/PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	M	H	H	H	H	M	H	M	H	H		H
CO2	M	H	M	H	M		H			H		
CO3		H	H	H	H	M	H	M	H	H		H
CO4	H	H	M		M		M	M				H
CO5	H	H	M	M		M	M	M		**H**		

Programme Code:	B.Sc. - IT			Programme Title:	Information Technology	
Course Code:	22VIT501			Title	Batch:	2022 - 2025
				Value Added Course - I : Social Networks	Semester:	V
Lecture Hrs./Week	30 Hrs.	Tutorial Hrs./Sem.	-		Credits:	-

Course Objective

To provide the overall view of various concepts of Social media such as Facebook, Twitter, LinkedIn, Instagram, etc.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To keep in mind basics of Social Networks	K1
CO2	To understand the classification of Social Media	K2
CO3	To deploy various data privacy feature in social media platforms	K3
CO4	To analyze the security aspects in social media.	K4
CO5	To assess the various social media platforms.	K5

Mapping

PO/ PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	-	M	H	M	H	-	L	H	H	M	-	M
CO2	-	M	H	M	H	-	L	M	H	M	-	M
CO3	-	H	H	H	H	-	M	M	H	H	-	M
CO4	-	H	H	H	H	-	M	M	H	H	-	M
CO5	-	L	H	M	H	M	M	M	H	H	-	M

Programme Code:	B.Sc.- IT			Programme Title:	Information Technology	
Course Code:	22UIT618			Title	Batch:	2022 - 2025
				Core XIV : Open Source Methodologies	Semester:	VI
Lecture Hrs./Week	5	Tutorial Hrs./Sem.	_		Credits:	4

Course Objective

On successful completion of this subject the students should have the knowledge about Unix & Linux Operating System concepts, normal & administrative commands and Android application development.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To remember the various Unix commands for directory, editor, shell programming. Android layers, components, and user interfaces.	K1
CO2	To get the idea of the Unix, Linux, and Android program commands.	K2
CO3	To execute the programs by using the various Unix, Linux commands.	K3
CO4	To review by using the commands and operations get proper output.	K4
CO5	To Assess the commands of Unix and Linux.	K5

Mapping

PO/PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	-	M	-	H	H	H	M	H	H	H	H	H
CO2	-	M	H	H	M	M	H	M	H	M	M	H
CO3	M	M	H	M	M	M	H	H	M	H	M	M
CO4	M	M	M	L	M	L	M	H	H	M	M	M
CO5	M	L	-	M	M	L	M	M	M	L	M	M

Programme Code:	B.Sc. - IT			Programme Title:	Information Technology	
Course Code:	22UIT6E1			Title	Batch:	2022 - 2025
				Core Elective – II : Big Data Analytics	Semester:	VI
Lecture Hrs./Week	6	Tutorial Hrs./Sem.	-		Credits:	4

Course Objective

To cultivate knowledge of big data analytics technologies and to transform the business.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To remember the fundamentals of Big Data.	K1
CO2	To understand the concepts of Hadoop	K2
CO3	To apply different types of Analytics	K3
CO4	To evaluate the results and transform the business	K4
CO5	To determine business through big data	K5

Mapping

PO /PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	H	M	L	L	L	H	M	M	-	M	-	M
CO2	-	M	L	M	-	M	M	L	L	L	-	M
CO3	M	M	M	M	-	H	-	M	-	-	-	L
CO4	M	M	H	L	L	M	L	H	-	-	-	L
CO5	-	M	L	H	L	M	-	-	-	M	-	-

Programme Code:	B.Sc. - IT			**Programme Title:**	Information Technology	
Course Code:	22UIT6E2			**Title**	**Batch:**	2022 - 2025
				Core Elective – II : Machine Learning	**Semester:**	VI
Lecture Hrs./Week	6	**Tutorial Hrs./Sem.**	-		**Credits:**	4

Course Objective

To cultivate knowledge about concepts and techniques of Machine Learning.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To Understand the basic concepts and techniques of Machine Learning.	K1
CO2	To understand the concepts of regression methods, classification methods, clustering methods	K2
CO3	To apply the inference and learning algorithms for the hidden Markov model.	K3
CO4	To evaluate the results for Dimensionality reduction Techniques	K4
CO5	To determine the mathematical relationships within and across Machine Learning algorithms and the paradigms of supervised and un-supervised learning.	K5

Mapping

PO /PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	H	M	L	L	L	H	M	M	-	M	-	M
CO2	-	M	L	M	-	M	M	L	L	L	-	M
CO3	M	M	M	M	-	H	-	M	-	-	-	L
CO4	M	M	H	L	L	M	L	H	-	-	-	L

Programme Code:	B.Sc. - IT			**Programme Title:**	Information Technology	
Course Code:	22UIT6E3			**Title**	**Batch:**	2022 - 2025
				Core Elective - II Block Chain Technology	**Semester:**	VI
Lecture Hrs/Week:	6	Tutorial Hrs./ Sem.	-		**Credits:**	4

Course Objective

To understand the fundamentals of block chain and Cryptocurrency, influence and role of block chain in various fields.

Course Outcomes

On the successful completion of the course, students will be able to

CO1	To keep in mind the fundamentals of Blockchain technology and crypto currency	K1
CO2	To understand the mining mechanism in Blockchain.	K2
CO3	To apply and identify security measures, and various types of services that allow people to trade and transact with bitcoin.	K3
CO4	To analyze security, privacy, and efficiency of a given Blockchain system.	K4
CO5	To explain the Blockchain technology in various fields.	K5

Mapping

PO/PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	M	H	H	H	-	H	M	-	H	H	H	H
CO2	M	-	H	M	M	-	M	M	H	-	M	-
CO3	M	H	-	H	H	M	-	H	-	H	H	H
CO4	H	-	H	H	H	-	H	-	M	M	H	-
CO5	H	H	-	H	-	H	M	H	-	H	-	H

Programme Code:	B.Sc. - IT			**Programme Title:**	Information Technology	
Course Code:	22UIT6E4			**Title**	**Batch:**	2022 - 2025
				Core Elective – III : Cloud Computing	**Semester:**	VI
Lecture Hrs./Week	6	**Tutorial Hrs./Sem.**	-		**Credits:**	4

Course Objective

To understand various concepts of cloud computing and learn types of cloud services, usage of cloud etc.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	**CO Statement**	**Knowledge Level**
CO1	To recollect cloud networking concepts	K1
CO2	To understand and familiar with the basic concepts of cloud computing and python	K2
CO3	To apply the terminologies in designing cloud based applications	K3
CO4	To figure out security issues in cloud computing	K4
CO5	To judge the pros and cons of various types of cloud providers	K5

Mapping

PO/ PSO / CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PSO1**	**PSO2**
CO1	H	H	H	M	M	M	M	H	H	H	H	H
CO2	H	H	H	M	L	M	M	H	H	H	H	H
CO3	M	H	H	H	M	L	M	H	H	H	H	H
CO4	L	M	H	H	H	L	M	H	H	H	H	H
CO5	L	H	H	L	M	L	M	H	M	M	M	M

Programme Code:	B.Sc. - IT			**Programme Title:**	Information Technology	
Course Code:	22UIT6E5			**Title**	**Batch:**	2022 - 2025
				Core Elective III: Internet of Things (IoT)	**Semester:**	VI
Lecture Hrs./Week	6	**Tutorial Hrs./Sem.**	-		**Credits:**	4

Course Objective

Understand about the definition and usage of Internet of things and the key components of IoT system

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To remember the various concepts of IoT.	K1
CO2	To Understand the basic concepts of M2M and sensors	K2
CO3	To apply the concepts into the embedded devices	K3
CO4	To analyze the various privacy issues.	K4
CO5	To evaluate software design for IoT applications	K5

Mapping

PO /PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	H	M	L	L	L	H	M	M	-	M	-	M
CO2	-	M	L	M	-	M	M	L	L	L	-	M
CO3	M	M	M	M	-	H	-	M	-	-	-	L
CO4	M	M	H	L	L	M	L	H	-	-	-	L
CO5	-	M	L	H	L	M	-	-	-	M	-	-

Course Code:	22UIT6E6			Title:	Batch :	2022 - 2025
				Core Elective – III Mobile Computing	Semester :	VI
Lecture Hrs./Week:	6	Tutorial Hrs./Sem.	-		Credits :	4

Course Objective

To Understand the various concepts and techniques of WAP, GSM, CDMA, 2G, 3G, 4G etc...

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To keep in mind the various networks, standards, communication medium, Spread spectrum techniques.	K1
CO2	To Understand the basic concepts of wireless networks.	K2
CO3	To deploy the mobile applications to the devices.	K3
CO4	To analyze the various wireless networks technologies.	K4
CO5	To evaluate the importance of mobile communications.	K5

Mapping

PO/ PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	-	M	-	L	M	M	M	H	H	M	-	L
CO2	L	M	M	M	H	H	M	M	M	M	M	M
CO3	M	H	H	M	H	H	H	M	H	H	M	M
CO4	-	H	H	M	H	H	H	H	M	H	H	H
CO5	-	H	H	M	H	H	M	H	H	H	-	M

Programme Code:	B.Sc. - IT			**Programme Title:**	Information Technology	
Course Code:	22UIT619			**Title**	**Batch:**	2022 - 2025
				Core Lab. – IX : Open Source Methodologies (Linux)	**Semester:**	VI
Practical Hrs./Week	5	**Tutorial Hrs./Sem.**	-		**Credits:**	3

Course Objective

To obtain the practical knowledge about Unix & Linux Operating System commands, Administrative, Normal Commands and Basic Android Applications.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To apply the concepts of GNOME, shell and SDK.	K3
CO2	To analyze the various commands.	K4
CO3	To verify the results for the different input data.	K5
CO4	To create applications in Linux.	K6
CO5	To create various simple Android applications.	K6

Mapping

PO /PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	M	M	M	M	-	H	-	M	-	-	-	L
CO2	M	M	H	L	L	M	L	H	-	-	-	L
CO3	-	M	L	H	L	M	-	-	-	M	-	-
CO4	M	M	H	L	L	M	L	H	-	-	-	L
CO5	-	M	L	H	L	M	-	-	-	M	-	-

Programme Code:	B.Sc. - IT			Programme Title:	Information Technology	
Course Code:	22UIT620			Title	Batch:	2022 - 2025
				Core Lab - X : Software Testing Tools	Semester:	VI
Practical Hrs./Week	4	Tutorial Hrs./Sem.	--		Credits:	2

Course Objective

To gain the knowledge to apply the various programming concepts of Software testing like integration, unit, functional, non-functional testing and about product metrics.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To make use of properties for checking the values	K3
CO2	To justify the expected result with the obtained result.	K5
CO3	To create GUI based database applications to test	K6
CO4	To develop test cases for the testing programs	K6
CO5	To test wesites using selenium controls	K6

Mapping

PO/PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	H	H	M	H	-	-	M	--	M	H	-	H
CO2	-	H	-	H	-	M	-	M	H	H	-	H
CO3	H	H	M	H	-	H	-	-	-	H	-	H
CO4	-	H	-	H	-	H	M	M	M	M	-	-
CO5	H	H	M	H	-	M	-	-	M	M	-	-

Programme Code:	B.Sc. - IT			Programme Title:	Information Technology	
Course Code:	22UIT621			Title	Batch:	2022 - 2025
				Project	Semester:	VI
Practical Hrs./Week:	-	Tutorial Hrs./Sem.	-		Credits:	2

Course Objective

To learn depth knowledge about tools used in software application development, web designing & web technologies and understand the usage of front end and back end tools.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To create database, tables, coding	K6
CO2	To apply the coding into System side	K3
CO3	To apply various tools in real time Applications/Software	K3
CO4	To analyze the system requirements of the Application /Software	K4
CO5	To verify the developed Application with the customer requirements	K5
CO6	Evaluate the Applications/Softwares through the stake holder	K6

Mapping

PO/PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	H	M	H	H	H	M	H	M	H	M	M	M
CO2	H	M	H	H	H	M	H	M	M	H	M	M
CO3	H	H	M	M	H	M	H	M	M	H	M	M
CO4	H	H	H	H	H	H	H	H	H	H	H	M
CO5	H	H	H	M	H	M	H	H	H	H	H	H
CO6	H	H	H	H	H	H	H	M	H	H	H	H

Programme Code:	B.Sc. - IT			**Programme Title:**	Information Technology	
Course Code:	22UIT6AL			**Title**	**Batch:**	2022 - 2025
				Advanced Learner Course II : R Programming Lab.(Optional)	**Semester:**	VI
Practical Hrs./Week	Self-Study	**Tutorial Hrs./Sem.**	-		**Credits:**	5*

Course Objective

To apply various concepts of R language.

Course Outcomes

On the successful completion of the course, students will be able to

CO	CO Statement	Knowledge
CO1	To deploy programs using control structures	K3
CO2	To analyze the vector, files and data frame usage in program generation	K4
CO3	To select appropriate tools for data analysis in R	K5
CO4	To verify the usage of data frame usage in program generation	K5
CO5	To create applications using R in built packages and functions	K6

Mapping

PO/ PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	H	M	L	L	L	M	M	L	M	L	L	L
CO2	M	M	L	L	L	M	M	L	H	L	L	L
CO3	L	L	L	M	M	L	M	M	H	H	L	L
CO4	M	M	L	L	L	M	M	L	H	L	L	L
CO5	L	L	L	M	M	L	M	M	H	H	L	L

Programme Code:	B.Sc. - IT			Programme Title:	Information Technology	
Course Code:	22UIT6S1			Title	Batch:	2022 - 2025
				Skill Based Lab. III - Naan Mudhalvan (Photoshop)	Semester:	VI
Practical Hrs./Week	3	Tutorial Hrs./Sem.	-		Credits:	2

Course Objective

To learn, apply and create various editing techniques of Photoshop.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To deploy basic tools for designing photos.	K3
CO2	To examine various editing tools.	K4
CO3	To choose manipulation of text with photos.	K5
CO4	To verify filters and layers	K5
CO5	To create pdf document	K6

Mapping

PO /PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	H	M	L	L	L	H	M	M	-	M	-	M
CO2	-	M	L	M	-	M	M	L	L	L	-	M
CO3	M	M	M	M	-	H	-	M	-	-	-	L
CO4	M	M	H	L	L	M	L	H	-	-	-	L
CO5	-	M	L	H	L	M	-	-	-	M	-	-

Programme Code:	B.Sc. - IT			**Programme Title:**	Information Technology	
Course Code:	22UIT6S2			**Title**	**Batch:**	2022 - 2025
				Skill Based Lab. III - Naan Mudhalvan (CorelDraw)	**Semester:**	VI
Practical Hrs./Week	3	**Tutorial Hrs./Sem.**	-		**Credits:**	2

Course Objective

To learn, apply and create various designing concepts of CorelDraw.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	**CO Statement**	**Knowledge Level**
CO1	To deploy basic geometric shapes	K3
CO2	To examine various line tools.	K4
CO3	To choose manipulation of images	K5
CO4	To verify filters options	K5
CO5	To create layers	K6

Mapping

PO /PSO / CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PSO1**	**PSO2**
CO1	H	M	L	L	L	H	M	M	-	M	-	M
CO2	-	M	L	M	-	M	M	L	L	L	-	M
CO3	M	M	M	M	-	H	-	M	-	-	-	L
CO4	M	M	H	L	L	M	L	H	-	-	-	L
CO5	-	M	L	H	L	M	-	-	-	M	-	-

Programme Code:	B.Sc. - IT			Programme Title:	Information Technology	
Course Code:	22VIT602			Title	Batch:	2022-2025
				Value Added Course - 2	Semester:	VI
Lecture Hrs./Week	30 Hrs.	Tutorial Hrs./Sem.	-	Crux of Cyber Security and Crime	Credits:	-

Course Objective

On successful completion of this subject the students can understand various concepts of Cybercrime, security tips for email and smartphones etc.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	To keep in mind the fundamentals of cyber security & crimes	K1
CO2	To understand the types of security mechanisms	K2
CO3	To apply and identify security measures, and various types of malwares and viruses	K3
CO4	To analyze security, privacy, and efficiency of a email	K4
CO5	To Assess the concepts of Antivirus and safety mechanisms.	K5

Mapping

PO /PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	M	H	H	H	M	H	M	H	H	H	H	H
CO2	M	H	H	M	M	M	H	M	H	M	M	H
CO3	M	M	M	H	H	M	H	H	M	H	H	H
CO4	H	H	H	H	H	M	H	H	H	M	H	H
CO5	H	H	H	H	H	H	H	H	H	H	H	H

NALLAMUTHU GOUNDER MAHALINGAM COLLEGE POLLACHI

Dr. R. MUTHUKUMARAN,
M.A.,M.Phil.,B.Ed.,Ph.D.
PRINCIPAL
N.G.M. College, Pollachi - 1
Coimbatore Distric.