

## **PREAMBLE**

The Four-Year Undergraduate Programme in **BCA** (FYUGP) - offered by Fatima Mata National College has a student centric approach in which the student can choose their own pathway for learning. The syllabus has been revised and the revised syllabus is to be effective from 2024 admission. On successful attainment of 133 credits in a three-year period, a student shall be awarded an Undergraduate Degree. In a four-year period, the student can successfully attain 177 credits and shall be awarded with either Undergraduate Honours Degree or Undergraduate Honours with Research Degree. The students can acquire credits through the following categories of subjects.

1. Discipline Specific Core (DSC) Courses
2. Discipline Specific Elective (DSE) Courses
3. General Foundation Courses
  - a) Multi-Disciplinary (MDC) Courses
  - b) Ability Enhancement Courses
  - c) Value Addition Courses
  - d) Skill Enhancement Courses

Discipline Specific Core (DSC) courses are the core credit courses in a particular discipline. Students may choose DSC courses as their major or minor course of study. Discipline Specific Elective (DSE) Courses are a pool of credit courses in a particular discipline. These courses offer specialisation to students in a particular discipline. It can be a major or minor course of study. Multi-Disciplinary Courses (MDC) are Generic Elective courses meant to ensure multi-disciplinary/interdisciplinary education to students. Every Discipline has to offer MDCs. Ability Enhancement Courses (AEC) are courses offered by language and Literature Disciplines to ensure enhancement of language proficiency among students.

Students who secure at least 75 % of marks in all the six semesters can choose Undergraduate Honours with Research stream in the fourth year. Value Addition Courses (VAC) are meant to inculcate ethics, constitutional values, soft skills, sports and such similar values to students. Every discipline may offer VACs. Skill Enhancement Courses (SEC) are skill-based courses in all disciplines which may inculcate skill, competencies and hands on

training. In the first three semesters of the FYUGP, the student should learn one Multi-Disciplinary Course (MDC) each from a discipline other than the Major and Minor disciplines already chosen. The first and second MDC (MDC1 and MDC2), respectively in the first and second semesters, can be offered by all departments. The third MDC (MDC3) in the third semester is common to all the students, with Kerala-specific content (KS), and offered by English (E) and Other Language (OL) departments. Each MDC has 3 credits. Total 9 credits shall be earned from MDC. The four Ability Enhancement Courses (AEC) are to be offered by English and Other language departments. Out of the total 4 Courses, the student has to Choose two from English department and another two from any of the other languages department. VAC and SEC shall be offered by all Disciplines.

### **Exit Points and Credit Requirements**

On Completion of 3 Years (6 Semesters) the student has an option to exit the programme with 133 credits and shall be awarded with a bachelor's degree. The Maximum credit a student can acquire in three-year period is limited to 150. On Completion of 4 years of study (8 Semesters) by acquiring 177 credit the student shall be awarded with a Bachelors (Honours) Degree or Bachelors (Honours with Research) Degree.

One semester is defined as 90 working days and an academic year is divided into two semesters and an optional summer fast track semester. In addition to the 90 working days, 10 working days in a semester shall be used for co-curricular activities. An academic year shall consist of 200 working days. One semester consisting of 18 weeks with 5 working days per week. In each semester 15 days (3week) should be kept a side for examinations including internal examination evaluation and other academic activities. The maximum available weeks for curriculum transactions should be fixed as 15 in each semester. Minimum of 5 teaching / tutorial hours could be made available for a day in a 5-day week. A 4 - year Degree with (Honours/Research) program shall have a minimum credit requirement of 177. A 3-year exit option (Bachelor's Degree) is given to a student completing 133 credits.

### Course outline

Semester	Course Code	Course Title	Type of Course	Academic Level	Instructional hrs/Week			Credit
					T	P	Total	
I	24UCP-DSC111	C Programming	DSC	100-199	3	2	5	4
	24UCP-DSC112	Introduction to Information technology	DSC	100-199	3	2	5	4
	24UCP-DSC113	Office Automation	DSC	100-199	3	2	5	4
	24UCP-MDC111	Introduction to Digital Technology	MDC	100-199	3	0	3	3
II	24UCP-DSC211	Python Programming	DSC	100-199	3	2	5	4
	24UCP-DSC212	Academic Writing	DSC	100-199	3	2	5	4
	24UCP-DSC213	Software Testing	DSC	100-199	3	2	5	4
	24UCP-MDC211	Web Development	MDC	100-199	3	0	3	3
III	24UCP-DSC321	Data Structure	DSC	200-299	3	2	5	4
	24UCP-DSC322	Object Oriented Programming with JAVA	DSC	200-299	3	2	5	4
	24UCP-DSC323	Cyber Security	DSC	200-299	4	-	4	4
	24UCP-DSE321	Basics of Web Technology	DSC	200-299	3	2	5	4
	24UCP-VAC321	Introduction To Data Science	VAC	200-299	3	0	3	3
	24UCP-DSC421	Computer Networks	DSC	200-299	3	2	5	4

IV	24UCP-DSC422	Database Management System	DSC	200-299	3	2	5	4
	24UCP-DSE421	Web Programming using PHP	DSE	200-299	2	4	6	4
	24UCP-VAC421	IT business Venturing	VAC	200-299	3	0	3	3
	24UCP-VAC422	Ethical Hacking	VAC	200-299	3	0	3	3
	24UCP-SEC421	Multimedia Content Development	SEC	200-299	3	0	3	3
<b>SUMMER INTERNSHIP (2Credits)</b>								
V	24UCP-DSC531	Software Engineering	DSC	300-399	4	0	4	4
	24UCP-DSC532	Operating System	DSC	300-399	4	-	4	4
	24UCP-DSC533	Computer Architecture and Organization	DSC	300-399	4	0	4	4
	24UCP-DSE531	Mobile application using flutter	DSE	300-399	4	0	4	4
	24UCP-DSE532	Full Stack Development	DSE	300-399	3	2	5	4
	24UCP-SEC531	Animation Using Blender	SEC	300-399	2	2	4	3
VI	24UCP-DSC631	Data Mining and Warehousing	DSC	300-399	4	0	4	4
	24UCP-DSC632	Computer Graphics	DSC	300-399	3	2	5	4
	24UCP-DSC633	Mini Project	DSC	300-399	-	5	5	4
	24UCP-DSE631	Internet Of Things	DSE	300-399	4	0	4	4
	24UCP-DSE632	Web Commerce	DSE	300-399	4	0	4	4 (Any one)
	24UCP-DSE633	BlockChain Technology	DSE	300-399	4	0	4	

VII	24UCP-DSC741	Data analysis with R	DSC	400-499	3	2	5	4
	24UCP-DSC742	Machine Learning	DSC	400-499	4	0	4	4
	24UCP-DSE741	Research Methodology	DSE	400-499	4	0	4	4
	24UCP-DSC534	Game Development	DSC	300-399	4	0	4	4
	24UCP-DSC535	Software Project Management	DSC	300-399	4	0	4	4
	24UCP-DSC536	Digital Marketing	DSC	300-399	4	0	4	4
VIII	24UCP-DSE841	Design Analysis and Algorithm	DSC	400-499	4	0	4	4
		Online Course I	DSC					
		Online Course II	DSC					
	<i>Online/ Distance Learning mode-A list of courses approved by BOS</i>							

GENERAL INFORMATION ABOUT THE COURSE					
Faculty	APPLIED SCIENCE				
Course offering Department	DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS				
Course Code	24UCP-DSC111				
Course Title	C PROGRAMMING				
Type of Course	DSC				
Semester	I				
Academic Level	100-199..				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	3 hours	-	2 hours	5
Pre-requisites-if any	Basic programming skills, Logical thinking and curiosity.				

Course Summary	The C programming language is a general purpose and procedural language that supports structured programming and provides low-level access to the system memory.
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GENERAL INFORMATION ABOUT THE COURSE					
Faculty	APPLIED SCIENCE				
Course offering Department	DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS				
Course Code	24UCP-DSC112				
Course Title	INTRODUCTION TO INFORMATION TECHNOLOGY				
Type of Course	DSC				
Semester	I				
Academic Level	100-199.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	3 hours	-	2 hours	5
Pre-requisites- if any	Basic knowledge of computers.				
Course Summary	This course deals with different basic concepts of IT and different units of computer systems. Explain different types of hardware's and create awareness about modern digital technologies.				

GENERAL INFORMATION ABOUT THE COURSE					
Faculty	APPLIED SCIENCE				
Course offering Department	DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS				
Course Code	24UCP-DSC113				
Course Title	OFFICE AUTOMATION				
Type of Course	DSC				
Semester	I				
Academic Level	100-199.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	3 hours	-	2 hours	5
Pre-requisites- if any	Basic Computer skills.				
Course Summary	Office Tools are a type of application software. They help the users to perform office-related tasks easily and efficiently. Therefore, these tools help				

	to create, manage, and manipulate large amounts of data and documents. Moreover, they help create presentations, reports, databases, etc.
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GENERAL INFORMATION ABOUT THE COURSE					
Faculty	APPLIED SCIENCE				
Course offering Department	DEPARTMENT OF COMPUTER SCIENCE				
Course Code	24UCP-MDC111				
Course Title	INTRODUCTION TO DIGITAL TECHNOLOGY				
Type of Course	MDC				
Semester	I				
Academic Level	100 - 199.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	3	3 hours	-	-	3
Pre-requisites- if any	Basic computer skills.				
Course Summary	This course explores advanced topics in Information Technology, covering data management, social informatics, IT applications, specific areas like bioinformatics and geoinformatics, futuristic IT such as artificial intelligence, and social impacts. Understand IT strategies like disaster recovery, cloud computing, and green computing. Gain insights into the digital economy, communication models, business governance, and various information systems.				

GENERAL INFORMATION ABOUT THE COURSE					
Faculty	APPLIED SCIENCE				
Course offering Department	DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS				
Course Code	24UCP-DSC211				
Course Title	PYTHON PROGRAMMING				
Type of Course	DSC				
Semester	II				
Academic Level	100 - 199.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	3 hours	-	2 Hours	5
Pre-requisites- if any	No prior programming experience is required, but familiarity with basic computer usage and logic is beneficial.				

Course Summary	This course serves as an introduction to Python, a versatile and widely-used programming language known for its simplicity and readability. Through a combination of theoretical instruction and hands-on exercises, students will gain a solid understanding of Python fundamentals, syntax, data structures, and control flow.
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GENERAL INFORMATION ABOUT THE COURSE					
Faculty	APPLIED SCIENCE				
Course offering Department	DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS				
Course Code	24UCP-DSC212				
Course Title	ACADEMIC WRITING				
Type of Course	DSC				
Semester	II				
Academic Level	100 - 199.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	3 hours	-	2	5
Pre-requisites- if any	Familiarity with basic computer skills.				
Course Summary	This course aims to equip students with the necessary skills for effective academic writing. Through practical exercises and theoretical instruction, students will learn the principles of academic writing, including proper citation techniques, avoiding plagiarism, and using LaTeX for document preparation.				

GENERAL INFORMATION ABOUT THE COURSE					
Faculty	APPLIED SCIENCE				
Course offering Department	DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS				
Course Code	24UCP-DSC213				
Course Title	SOFTWARE TESTING				
Type of Course	DSC				
Semester	II				
Academic Level	100 - 199.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	3 hours	-	2	5
Pre-requisites- if any	A good understanding of the software development life cycle.				
Course Summary	This course makes the students to specialize in various types of testing theoretically as well as practical knowledge				



<b>GENERAL INFORMATION ABOUT THE COURSE</b>					
Faculty	<b>APPLIED SCIENCE</b>				
Course offering Department	<b>DEPARTMENT OF COMPUTER SCIENCE AND APPLICATION</b>				
Course Code	<b>24UCP-MDC211</b>				
Course Title	<b>Web Development</b>				
Type of Course	<b>MDC</b>				
Semester	<b>II</b>				
Academic Level	<b>100-199.</b>				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	3	3 hours	-	-	3
Pre-requisites- if any	NIL				
Course Summary	Web design is the planning and creation of websites. This includes a number of separate skills that all fall under the umbrella of web design. This course aims to instill in students these skills which includes information architecture, user interface, site structure, navigation, layout, colours, fonts, and overall imagery.				

<b>GENERAL INFORMATION ABOUT THE COURSE</b>					
Faculty	<b>APPLIED SCIENCE</b>				
Course offering Department	<b>DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS</b>				
Course Code	<b>24UCP-DSC321</b>				
Course Title	<b>DATA STRUCTURE</b>				
Type of Course	<b>DSC</b>				
Semester	<b>III</b>				
Academic Level	<b>200 - 299.</b>				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	3 hours	-	2 hours	5
Pre-requisites- if any	Fundamental knowledge of programming in C				
Course Summary	This course deals with data structures like arrays, lists, stacks, queues, trees and graphs. Explains how to implement the above data structures in C. Also describe various searching and sorting strategies				

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GENERAL INFORMATION ABOUT THE COURSE					
Faculty	APPLIED SCIENCE				
Course offering Department	DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS				
Course Code	24UCP-DSC322				
Course Title	Object Oriented Programming WITH JAVA				
Type of Course	DSC				
Semester	III				
Academic Level	200 - 299.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	3 hours	-	2	5
Pre-requisites- if any	Basic programming concepts.				
Course Summary	The course covers the fundamentals of java programming, including data types, operators, control structures and arrays. Also advanced concepts such as Packages, Thread, Exception handling etc.				

GENERAL INFORMATION ABOUT THE COURSE					
Faculty	APPLIED SCIENCE				
Course offering Department	DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS				
Course Code	24UCP-DSC323				
Course Title	CYBER SECURITY				
Type of Course	DSC				
Semester	III				
Academic Level	200 - 299.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites- if any	Foundational knowledge in Computers, Networking, Operating systems, Problem solving and Analytical skills				
Course Summary	The course provides a foundational knowledge on cybersecurity, best practices, prevailing laws for protection, understanding and exploration of cyber threats and vulnerabilities observed in the digital landscape				

<b>GENERAL INFORMATION ABOUT THE COURSE</b>					
Faculty	<b>APPLIED SCIENCE</b>				
Course offering Department	<b>DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS</b>				
Course Code	<b>24UCP-DSE321</b>				
Course Title	<b>BASICS OF WEB TECHNOLOGY</b>				
Type of Course	<b>DSE</b>				
Semester	III				
Academic Level	200-299.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	3 hours	-	2 Hours	5
Pre-requisites- if any	NIL				
Course Summary	Web design is the planning and creation of websites. This includes a number of separate skills that all fall under the umbrella of web design. This course aims to instill in students these skills which includes information architecture, user interface, site structure, navigation, layout, colours, fonts, and overall imagery.				

<b>GENERAL INFORMATION ABOUT THE COURSE</b>					
Faculty	<b>APPLIED SCIENCE</b>				
Course offering Department	<b>DEPARTMENT OF COMPUTER SCIENCE AND APPLICATION</b>				
Course Code	<b>24UCP-VAC321</b>				
Course Title	<b>INTRODUCTION TO DATA SCIENCE</b>				
Type of Course	<b>DSE</b>				
Semester	III				
Academic Level	200 - 299.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	3	3 hours	-	-	3
Pre-requisites- if any	NIL				
Course Summary	This course is meant for finding patterns in data, through analysis, we may be able to make better decisions and predictions.				

<b>GENERAL INFORMATION ABOUT THE COURSE</b>	
Faculty	<b>APPLIED SCIENCE</b>

Course offering Department	<b>DEPARTMENT OF COMPUTER SCIENCE AND APPLICATION</b>				
Course Code	<b>24UCP-DSC421</b>				
Course Title	<b>COMPUTER NETWORKS</b>				
Type of Course	<b>DSC</b>				
Semester	IV				
Academic Level	200 - 299.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	3 hours	-	2 hours	5
Pre-requisites- if any	Nil				
Course Summary	This course provides basic understanding on network & transmission media and also explains various interfacing devices and access control. It provides understanding about transport protocols and mechanisms to control traffic flow.				

<b>GENERAL INFORMATION ABOUT THE COURSE</b>					
Faculty	<b>APPLIED SCIENCE</b>				
Course offering Department	<b>DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS</b>				
Course Code	<b>24 UCS-DSC422</b>				
Course Title	<b>DATABASE MANAGEMENT SYSTEMS</b>				
Type of Course	<b>DSC</b>				
Semester	IV				
Academic Level	200 - 299.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	3 hours	-	2 hours	5
Pre-requisites- if any	Familiarization with basic data structures, and object-oriented programming language.				
Course Summary	This course helps to understand the basic concepts and applications of database systems, master the basics of SQL and construct queries using SQL, identify different data models, apply normalization for the development of databases, and also to develop ER and EER diagrams.				

<b>GENERAL INFORMATION ABOUT THE COURSE</b>	
Faculty	<b>APPLIED SCIENCE</b>

Course offering Department	<b>DEPARTMENT OF COMPUTER SCIENCE AND APPLICATION</b>				
Course Code	<b>24UCP-DSE421</b>				
Course Title	<b>WEB PROGRAMMING USING PHP</b>				
Type of Course	<b>DSE</b>				
Semester	IV				
Academic Level	200 - 299.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	2 hours	-	4 Hours	6
Pre-requisites- if any	Familiarity with HTML, CSS, and basic programming concepts is recommended				
Course Summary	This course provides an in-depth exploration of web programming using PHP (Hypertext Preprocessor), a widely-used server-side scripting language designed for web development. Through a combination of theoretical learning and practical exercises, students will gain a comprehensive understanding of PHP and its role in building dynamic, interactive websites.				

<b>GENERAL INFORMATION ABOUT THE COURSE</b>					
Faculty	<b>APPLIED SCIENCE</b>				
Course offering Department	<b>DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS</b>				
Course Code	<b>24UCP-VAC421</b>				
Course Title	<b>IT BUSINESS VENTURING</b>				
Type of Course	<b>VAC</b>				
Semester	IV				
Academic Level	200 - 299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	3	3 hours	-	-	3
Pre-requisites- if any	Computer Networking knowledge, Knowledge of Industry Trends, Familiarity with Case Studies.				
Course Summary	To provide a comprehensive understanding of the concept of an entrepreneur and intricacies involved in managing entrepreneurial projects.				

<b>GENERAL INFORMATION ABOUT THE COURSE</b>	
Faculty	<b>APPLIED SCIENCE</b>
Course offering Department	<b>DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS</b>

Course Code	24UCP-VAC422				
Course Title	ETHICAL HACKING				
Type of Course	VAC				
Semester	IV				
Academic Level	200 - 299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	3	3 hours	-	-	3
Pre-requisites-if any	Computer Networking knowledge, Programming Capabilities				
Course Summary	Ethical hacking is a process wherein professionals use the vulnerabilities of a network/ system to detect intrusions from malicious hackers.				

GENERAL INFORMATION ABOUT THE COURSE					
Faculty	APPLIED SCIENCE				
Course offering Department	DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS				
Course Code	24UCP-SEC421				
Course Title	MULTIMEDIA CONTENT DEVELOPMENT				
Type of Course	SEC				
Semester	IV				
Academic Level	200 - 299.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	3	3 hours	-	-	3
Pre-requisites-if any	Nil				
Course Summary	This course gives an idea on multimedia, text in multimedia, concepts in audio and video, desktop publishing and internet multimedia content distribution				

GENERAL INFORMATION ABOUT THE COURSE	
Faculty	APPLIED SCIENCE
Course offering Department	COMPUTER APPLICATION
Course Code	24UCP-DSC531
Course Title	SOFTWARE ENGINEERING
Type of Course	DSC
Semester	V
Academic Level	300 - 399.

Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites- if any	Basic familiarity with computer systems, good problem-solving skills				
Course Summary	The course deals with activities and approaches involved in the creation and development of software applications				

GENERAL INFORMATION ABOUT THE COURSE					
Faculty	APPLIED SCIENCE				
Course offering Department	DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS				
Course Code	24UCP-DSC532				
Course Title	OPERATING SYSTEM				
Type of Course	DSC				
Semester	V				
Academic Level	300 - 399.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites- if any	Basic Computer Knowledge.				
Course Summary	An Operating System is the most widely used piece of software in any computer. Course is designed to give basic concepts in operating systems and how to make different choices in operating system design and implementation.				

GENERAL INFORMATION ABOUT THE COURSE					
Faculty	APPLIED SCIENCE				
Course offering Department	DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS				
Course Code	24UCP-DSC533				
Course Title	COMPUTER ORGANIZATION AND ARCHITECTURE				
Type of Course	DSC				
Semester	V				
Academic Level	300 - 399.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week

	4	4 hours	-	-	4
Pre-requisites- if any	Understanding computer fundamentals				
Course Summary	This course is designed to understand the architecture of computers, learn about hardware and to familiarize with Boolean algebra, logic gates and microprocessors.				

<b>GENERAL INFORMATION ABOUT THE COURSE</b>					
Faculty	<b>APPLIED SCIENCE</b>				
Course offering Department	<b>DEPARTMENT OF COMPUTER SCIENCE AND APPLICATION</b>				
Course Code	<b>24UCP-DSE531</b>				
Course Title	<b>MOBILE APPLICATION DEVELOPMENT USING FLUTTER</b>				
Type of Course	<b>DSE</b>				
Semester	V				
Academic Level	300 - 399.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites- if any	Skill in any web programming tool/language				
Course Summary	This course covers various methods of mobile application development that are required to become an app developer. It also explains about required tools and techniques to produce mobile apps using Android and Flutter				

<b>GENERAL INFORMATION ABOUT THE COURSE</b>					
Faculty	<b>APPLIED SCIENCE</b>				
Course offering Department	<b>DEPARTMENT OF COMPUTER SCIENCE AND APPLICATION</b>				
Course Code	<b>24UCP-DSE532</b>				
Course Title	<b>Full Stack Development</b>				
Type of Course	<b>DSE</b>				
Semester	V				
Academic Level	300 - 399.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	3 hours	-	2 hours	5



Pre-requisites- if any	Should have knowledge in HTML 5, CSS 3, JavaScript.
Course Summary	The course provides a comprehensive overview of full stack web development, covering both front-end and back-end technologies. Students will learn how to design, develop, and deploy dynamic web applications using industry-standard tools and frameworks

GENERAL INFORMATION ABOUT THE COURSE					
Faculty	APPLIED SCIENCE				
Course offering Department	DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS				
Course Code	24 UCP-SEC531				
Course Title	ANIMATION USING BLENDER				
Type of Course	SEC				
Semester	V				
Academic Level	300-399.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	3	2 hours	-	2 hours	4
Pre-requisites- if any	Nil				
Course Summary	This course provides a comprehensive journey through the Blender interface, mastering vital navigation skills. It explores fundamental modelling techniques enabling the creation of 3D objects and characters				

GENERAL INFORMATION ABOUT THE COURSE					
Faculty	APPLIED SCIENCE				
Course offering Department	DEPARTMENT OF COMPUTER SCIENCE AND APPLICATION				
Course Code	24UCP-DSC631				
Course Title	Data Mining And Warehousing				
Type of Course	DSC				
Semester	VI				
Academic Level	300 - 399.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4

Pre-requisites- if any	Basic computer knowledge, database etc.
Course Summary	This course introduces students to the basic concepts, principles, methods, implementation techniques, and applications of data mining, with a focus on major data mining functions like pattern discovery, classification and clustering.

GENERAL INFORMATION ABOUT THE COURSE					
Faculty	APPLIED SCIENCE				
Course offering Department	DEPARTMENT OF COMPUTER SCIENCE AND APPLICATION				
Course Code	24UCP-DSC632				
Course Title	COMPUTER GRAPHICS				
Type of Course	DSC				
Semester	VI				
Academic Level	300 - 399.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	3 hours	-	2	5
Pre-requisites- if any	Understanding of basic mathematics and geometry, basic Programming skill in C.				
Course Summary	To introduce basic theoretical underpinnings and concepts behind computer graphics and expose students to algorithms, tools and techniques for implementing the same.				

GENERAL INFORMATION ABOUT THE COURSE					
Faculty	APPLIED SCIENCE				
Course offering Department	DEPARTMENT OF COMPUTER SCIENCE AND APPLICATION				
Course Code	24UCP-DSC633				
Course Title	Mini Project				
Type of Course	DSC				
Semester	VI				
Academic Level	300 - 399.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	-	-	5	5
Pre-requisites- if any	Adequate Knowledge in Software Engineering				
Course Summary	Understand about analysis, design, development and testing.				

<b>GENERAL INFORMATION ABOUT THE COURSE</b>					
Faculty	<b>APPLIED SCIENCE</b>				
Course offering Department	<b>DEPARTMENT OF COMPUTER SCIENCE AND APPLICATION</b>				
Course Code	<b>24UCP-DSE631</b>				
Course Title	<b>INTERNET OF THINGS</b>				
Type of Course	DSE				
Semester	VI				
Academic Level	300-399.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites-if any	Basic knowledge in networks				
Course Summary	This course provides an understanding on basics of Iot, architecture of Iot, communication criteria, protocols and about IT,OT systems.				

<b>GENERAL INFORMATION ABOUT THE COURSE</b>					
Faculty	<b>APPLIED SCIENCE</b>				
Course offering Department	<b>DEPARTMENT OF COMPUTER SCIENCE AND APPLICATION</b>				
Course Code	<b>24UCP-DSE632</b>				
Course Title	<b>Web Commerce</b>				
Type of Course	<b>DSE</b>				
Semester	VI				
Academic Level	300 - 399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites-if any	NIL				
Course Summary	This course provides an overview of electronic commerce, covering fundamental concepts, technologies, business models, and strategies used in online business transactions.				

<b>GENERAL INFORMATION ABOUT THE COURSE</b>	
Faculty	<b>APPLIED SCIENCE</b>
Course offering Department	<b>DEPARTMENT OF COMPUTER SCIENCE AND APPLICATION</b>

Course Code	<b>24UCP-DSE633</b>				
Course Title	<b>BLOCKCHAIN TECHNOLOGY</b>				
Type of Course	<b>DSE</b>				
Semester	VI				
Academic Level	300 - 399.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-		4
Pre-requisites- if any	Basic knowledge in Data Structures and Operating System, Experience with Object-Oriented language is required.				
Course Summary	The course introduces the cryptographic principles behind blockchain and helps the students understand concepts like consensus, crypto-currency, smart contracts, use cases etc.				

<b>GENERAL INFORMATION ABOUT THE COURSE</b>					
Faculty	<b>APPLIED SCIENCE</b>				
Course offering Department	<b>DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS</b>				
Course Code	<b>24UCP-DSC741</b>				
Course Title	<b>DATA ANALYSIS WITH R</b>				
Type of Course	<b>DSC</b>				
Semester	VII				
Academic Level	400 - 499.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	3 hours	-	2 Hours	5
Pre-requisites- if any	NIL				
Course Summary	This course provides a comprehensive introduction to data analysis using R programming language. Participants will learn the fundamental principles and techniques for exploring, visualizing, and analyzing data sets.				

<b>GENERAL INFORMATION ABOUT THE COURSE</b>	
Faculty	<b>APPLIED SCIENCE</b>
Course offering Department	<b>DEPARTMENT OF COMPUTER SCIENCE AND APPLICATION</b>
Course Code	<b>24UCP-DSC742</b>
Course Title	<b>Machine Learning</b>
Type of Course	<b>DSC</b>

Semester	VII				
Academic Level	400 - 499.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites- if any	No prior expertise needed, just a desire to explore the exciting realm of machine learning.				
Course Summary	This course brings an understanding about the concepts and algorithms in machine learning. It covers different algorithms in supervised and unsupervised learning methods. A learner after this course will be able to provide solutions to real world problems using machine learning algorithms.				

<b>GENERAL INFORMATION ABOUT THE COURSE</b>					
Faculty	<b>APPLIED SCIENCE</b>				
Course offering Department	<b>DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS</b>				
Course Code	<b>24UCP-DSC534</b>				
Course Title	<b>GAME DEVELOPMENT</b>				
Type of Course	<b>DSC</b>				
Semester	VII				
Academic Level	300 - 399.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites- if any	Basic understanding of programming concepts.				
Course Summary	This course introduces the fundamentals of game design and development using Unity as the primary tool. It covers various aspects of game creation, from conceptualization to implementation, focusing on both theoretical and practical elements.				

<b>GENERAL INFORMATION ABOUT THE COURSE</b>					
Faculty	<b>APPLIED SCIENCE</b>				
Course offering Department	<b>DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS</b>				
Course Code	<b>24UCP-DSC535</b>				
Course Title	<b>SOFTWARE PROJECT MANAGEMENT</b>				
Type of Course	DSC				
Semester	VII				

Academic Level	300 - 399.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-		4
Pre-requisites- if any	Basic understanding of software development process and methodologies				
Course Summary	To familiarize the major aspects of project management consisting of: Project Planning, Project Analysis, Project Selection, Project Implementation and Project Review.				

<b>GENERAL INFORMATION ABOUT THE COURSE</b>					
Faculty	<b>Applied Science</b>				
Course offering Department	<b>DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS</b>				
Course Code	<b>24UCP-DSC536</b>				
Course Title	<b>DIGITAL MARKETING</b>				
Type of Course	<b>DSC</b>				
Semester	VII				
Academic Level	300 - 399.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-		4
Pre-requisites- if any	Basic Computer Skills, Familiarity with Social Media Platforms.				
Course Summary	This course helps to understand digital marketing, meaning of website and levels of website, learn about SMO (social media optimization) like Facebook, twitter and other social media services optimization, understand paid tools like Google AdWords and display advertising techniques.				

<b>GENERAL INFORMATION ABOUT THE COURSE</b>					
Faculty	<b>APPLIED SCIENCE</b>				
Course offering Department	<b>DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS</b>				
Course Code	<b>24UCP-DSC741</b>				
Course Title	<b>RESEARCH METHODOLOGY</b>				
Type of Course	<b>DSC</b>				
Semester	VII				
Academic Level	400 - 499.				

Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites-if any	NIL				
Course Summary	This course aims to impart research concepts in terms of identifying the research problem, collecting relevant data, carrying out the research and technical writing.				

<b>GENERAL INFORMATION ABOUT THE COURSE</b>					
Faculty	<b>APPLIED SCIENCE</b>				
Course offering Department	<b>DEPARTMENT OF COMPUTER SCIENCE AND APPLICATION</b>				
Course Code	<b>24UCS-DSE841</b>				
Course Title	<b>Design Analysis and Algorithm</b>				
Type of Course	<b>DSE</b>				
Semester	VIII				
Academic Level	400-499.				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites-if any	Basic knowledge of Data Structure.				
Course Summary	This course provides a comprehensive exploration of design analysis and algorithms, focusing on fundamental concepts, problem-solving techniques, and algorithmic efficiency.				