B.SC. COMPUTER SCIENCE

Semester	Course Code	Course Category	Hours/ Week	Credits	Marks for Evaluation		
					CIA	ESE	Total
III	25UCSVAC1	Value Added Course – I	30	-	-	100	100

Course Title	Data Analytics and PowerBI

SYLLABUS		
Unit	**Contents**	**Hours**
I	Data Science vs Data Analytics – Data Science in Business – Data Analytics in Business – Data Ecosystem & Lifecycle	6
II	Data Privacy & Ethics – Data Integrity – Data Analytics Skills needed – How to improve skills – The Data Driven Decision Making Framework	6
III	Introduction to Power BI – What is Business Intelligence – Components of Power BI – Power BI Desktop – Power BI Service – Power BI Installation steps – Power BI Architecture	6
IV	Power BI Desktop: Features – Reasons – Multiple Views – Desktop Window – Types of Tabs – Supported Browsers – Supported Language	6
V	Power BI Desktop vs Power BI Service – Supported Data Sources – Comparison with other Power BI Tools	6

Text Book(s):

Greg Deckler, "Learn Power BI", Packt Publishing, 2021

Web Resource(s):

1. https://online.hbs.edu/Documents/a-beginners-guide-to-data-and-analytics.pdf?_gl=1*1r6r7tj*_gcl_au*MTU0MTE0NjU4My4xNzM4ODk4NzA2
2. https://www.tutorialspoint.com/power_bi/index.htm

Course Outcomes

Upon successful completion of this course, the student will be able to:

CO No.	CO Statement
CO1	Explain the underlying concepts of Data Analytics
CO2	Make use of the Data Driven Framework
CO3	Influence the knowledge on the Power BI
CO4	Analyze the classification of Power BI Desktop
CO5	Develop a case study with real world scenarios

Course Coordinator: Dr. S. Mohamed Iliyas

Semester	Course Code	Course Category	Hours/ Week	Credits	Marks for Evaluation		
					CIA	ESE	Total
V	25UCSVAC2	Value Added Course – II	30	-	-	100	100

Course Title	Kotlin Programming

SYLLABUS		
Unit	**Contents**	**Hours**
I	Kotlin Home– Introduction to Kotlin - Need of Kotlin – Kotlin Get Started: IDE – Installation	6
II	Syntax - Output: The Print() Function –Comments: Single-line comments – Multiline comments – Variables: Variable Type – valkeyword – Display variables – Variable Names - Data Types: Numbers – Integer – Floating Point – Booleans – Characters – Strings – Arrays – Type Conversion	6
III	Operators: Arithmetic – Assignment – Comparison – Logical – Strings – Booleans: Values - Expressions – If…Else – When – Loops: While – The Do..While – Break and Continue	6
IV	Arrays: Access the Elements – Change an Array Element – Array Length / Size – Loop Through an Array - For Loop – Ranges – Functions: Predefined Functions – Creating User Defined Function - Function Calling – Function Parameters – Returning a Value	6
V	Kotlin OOP: Classes and Objects – Constructors – Class Functions – Inheritance	6

Text Book(s):
John Horton, “Android Programming with Kotlin for Beginners”, Packt Publishing, 2019
Web Resource(s):
1. https://kotlinlang.org/ 2. https://www.geeksforgeeks.org/kotlin-programming-language/

Course Outcomes	
Upon successful completion of this course, the student will be able to:	
CO No.	**CO Statement**
CO1	Explain the underlying concepts of Kotlin
CO2	Make use of the various syntax and methods of Kotlin
CO3	Influence the knowledge on the Operators and Expressions
CO4	Analyze the classification of Arrays in Kotlin
CO5	Develop an application using Kotlin with real world scenarios

Course Coordinator: Dr. S. Mohamed Iliyas

M.SC. COMPUTER SCIENCE

Semester	Course Code	Course Category	Hours / Week	Credits	Marks for Evaluation		
					CIA	ESE	Total
III	25PCSVAC1	Value Added Course – I	30	-	-	100	100
Course Title	**Full Stack Web Development**						

SYLLABUS		
Unit	**Contents**	**Hours**
I	**Introduction to Full-Stack Development:** Brief History of web Development – Towards Full Stack Development – Benefits of Full Stack Development. Introduction to version control with Git and GitHub	6
II	**Front-End Development: HTML5:** Semantic elements, forms, multimedia integration, **CSS3:** Flexbox, Grid, responsive design principles, animations, **JavaScript:** ES6+ features, DOM manipulation, event handling - Basics of front-end frameworks	6
III	**Back-End Development with Express:** Introduction to Express.js and middleware, Setting up RESTful routes, Handling requests and responses, Template engines: EJS, Error handling in Express	6
IV	**Database Integration:** Overview of databases: SQL vs. NoSQL, Setting up and querying MySQL databases, Setting up and querying MongoDB databases, Using an ORM/ODM : Sequelize for MySQL, Mongoose for MongoDB.	6
V	**API Development, Authentication, and Testing:** Advanced API development: REST and GraphQL basics, implementing authentication using JWT. Introduction to API testing tools-Postman, Writing basic tests for APIs using tools: Jest and Mocha.	6

Text Book(s):

1. Harvey M. Deitel, *Web Development: Full Stack,* Cengage Learning, 2021, **ISBN:** 978-0357673850.
2. Philip Ackermann , *Full Stack Web Development: A Comprehensive Guide*, Rheinwerk Computing, 2022, **ISBN:** 978-1493224371

Web Links

1. https://www.mongodb.com/resources/basics/full-stack-development
2. https://www.geeksforgeeks.org/how-to-become-a-full-stack-web-developer/

Course Outcomes

Upon successful completion of this course, the student will be able to:

CO No.	CO Statement
CO1	Apply the concept of Full Stack Development
CO2	Summarize the features of HTML5 and CSS3
CO3	Simplify the knowledge on ExpressJS
CO4	Explain the concept of database integration using MongoDB
CO5	Solve real world scenarios using API Development

Course Coordinator : Dr. Vaaheedha Kfatheen

B.SC. ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

Semester	Course Code	Course Category	Hours/ Week	Credits	Marks for Evaluation		
					CIA	ESE	Total
III	25UAIVAC1	Value Added Course – I	30	-	-	100	100

Course Title	Digital Marketing and Content Creation using AI

SYLLABUS		
Unit	**Contents**	**Hours**
I	AI in Digital Marketing – AI Digital Marketing Tools – Examples of AI in Digital Marketing	6
II	Using AI in Digital Marketing: Content and Image Creation – Customer Service and Support – Customer segmentation – SEO – Pay-per-click Advertising – Data Analytics – Email Marketing	6
III	Merits of AI in Digital Marketing – Demerits of AI in Digital Marketing – Most Common Skills used in AI Driven Digital Marketing	6
IV	AI in Content Creation – Overview – How AI content creation works? – AI Content Creation Tools	6
V	Benefits – Challenges – Future - Conversational AI: Working – Components – Advantages – Challenges	6

Text Book(s):
Jim Sterne, "Artificial Intelligence for Marketing Practical Applications", Wiley Publications, 2017
Web Resource(s):
1. https://flutter.dev/ 2. https://www.geeksforgeeks.org/flutter-tutorial/

Course Outcomes	
Upon successful completion of this course, the student will be able to:	
CO No.	**CO Statement**
CO1	Apply the concept of AI in Digital Marketing
CO2	Summarize the features of SEO
CO3	Simplify the skills needed for Digital Marketing
CO4	Explain the concept of AI Content Creation
CO5	Evaluate real world scenarios using Conversational AI

Course Coordinator: Dr. S. Mohamed Iliyas

Semester	Course Code	Course Category	Hours/ Week	Credits	Marks for Evaluation		
					CIA	ESE	Total
V	25UAIVAC2	Value Added Course – II	30	-	-	100	100

Course Title	UX / UI Design

SYLLABUS		
Unit	**Contents**	**Hours**
I	UX /UI design – Difference between UX / UI – Importance of UX/UI – Five Stages of Design Thinking Process	6
II	UX Design – Problems Finding & Providing Solutions – Understanding Users – Competitive Analysis – User Interviews & Surveys	6
III	Journey Mapping – Card Sorting – Creating User Flows – Information Architecture – Rough Sketch	6
IV	UI Design – Color Theory – Typography – Iconography & Visual Hierarchy – Buttons – Design Tools and Software: Figma – Adobe XD – Sketch – Adobe Illustrator – Adobe Photoshop	6
V	Figma – Wireframe Design – Mobile App Design – Website Design – Interactions Design – Prototyping	6

Text Book(s):
"The Basics of User Experience Design", Interaction Design Foundation
Web Resource(s):
1. https://www.geeksforgeeks.org/user-interface-ui/?ref=lbp 2. https://designcode.io/figma-handbook

Course Outcomes	
Upon successful completion of this course, the student will be able to:	
CO No.	**CO Statement**
CO1	Define the basics of UX / UI
CO2	Relate the various techniques in UX Design
CO3	Experiment with UI & UX
CO4	Discover the basics of UI Design
CO5	Evaluate the knowledge of Figma with real world problems

Course Coordinator: Dr. S. Mohamed Iliyas