

DEPARTMENT OF COMPUTER APPLICATIONS
VALUE ADDED COURSE

Semester	Course Code	Course Title	Hours
III	22UCAVAC1	FUNDAMENTAL OF R PROGRAMMING	30

Course Outcomes

After completion of the course, the students will be able to

CO1: Acquire basic knowledge in R

CO2: Understand the various data types available in R

CO3: Evaluate the use of Decision making and Looping statements

CO4: Describe the concept of Vectors and Lists

CO5: Apply the features of R in problem solving

UNIT – I

6 Hours

Overview: Evolution of R – Features of R – **Environment Setup**– Installation –

Basic Syntax: R Command Prompt - R Script File – Comments

UNIT – II

6 Hours

Data Types: Vectors – Lists – Matrices – Arrays – Factors – Data Frames.

Variables: Variable Assignment – Data Types of variable – Finding Variables –

Deleting Variables **R – Operators:** Arithmetic – Relational – Logical –

Assignment – Miscellaneous

UNIT – III

6 Hours

Decision Making: If Statement – If...Else Statement – else if Statement – Switch

Statement – **Loops:** Repeat – While – For – Break Statement – Next Statement

UNIT – IV

6 Hours

Functions: Definition – Components – Built-in Function – User-defined Function –

Calling a Function – **Strings:** Rules Applied in String Construction – String

Manipulation – **Vectors:** Vector Creation – Accessing Vector Elements - Vector

Manipulation – **Lists:** Creating – Naming – Accessing – Manipulating – Merging –

Converting List to Vector

UNIT – V

6 Hours

Matrices: Accessing Elements – Matrix Computations – **Arrays:** Naming Columns and Rows – Accessing and Manipulating – Calculations across Elements

Text Books:

1. SandipRakshit, R for Beginners, McGraw Hill Education, 2017
2. A.K. Verma, R Programming, Cengage Publications, 2019

Semester	Course Code	Course Title	Hours
V	22UCAVAC2	KOTLIN PROGRAMMING	30

Course Outcomes

After completion of the course the students will be able to

CO1: Acquire basic knowledge in Kotlin

CO2: Understand the various data types available in Kotlin.

CO3: Evaluate the use of conditional statements

CO4: Describe the concept of arrays and control structures

CO5: Apply functions in problem solving

UNIT – I 6 Hours

Kotlin Home– Introduction to Kotlin - Need of Kotlin – **Kotlin Get Started: IDE** – Installation

UNIT – II 6 Hours

Syntax - Output: The Print() Function –**Comments:** Single-line comments – Multi-line comments – **Variables:** Variable Type – *val* keyword – Display variables – Variable Names - **Data Types:** Numbers – Integer – Floating Point – Booleans – Characters – Strings – Arrays – Type Conversion

UNIT – III 6 Hours

Operators: Arithmetic – Assignment – Comparison – Logical – **Strings** – **Booleans:** Values - Expressions – **If...Else** – **When** – **Loops:** While – The Do..While – Break and Continue

UNIT – IV 6 Hours

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

UNIT – V 6 Hours

Kotlin OOP: Classes and Objects – Constructors – Class Functions – Inheritance

Text Book

- 1) John Horton, “*Android Programming with Kotlin for Beginners*”, Packt Publishing, 2019

Semester	Course Code	Course Title	Hours
III	22MCAVAC1	ANGULAR JS	30

Course Outcomes

After completing the course, the students are able to

CO1: Understand the concept of Angular JS

CO2: Understand expressions and Directives of Angular JS

CO3: Impart the knowledge on Controllers and Modules

CO4: Learn the concept of scopes in Angular JS

CO5: Understand the concept of Forms in Angular JS

UNIT – I: 6 Hours

Introduction to Angular JS – Need for Angular JS – Angular JS MVC – Angular JS
First app – Angular JS Data Binding

UNIT – II: 6 Hours

Expressions – Numbers, Strings, Objects, Arrays – Examples – Directives – ng-app,
ng-init, ng-model, ng-repeat – Examples

UNIT – III: 6 Hours

Controllers – Examples – Modules –Module Creation – Adding controller to a module
– Adding directive to a module – Examples

UNIT – IV: 6 Hours

Scopes – Examples – Filters – Adding filters to expressions – Adding filters to
directives – Examples

UNIT – V: 6 Hours

Forms – Check Box – Radio Buttons – Select Box – Examples – Animations –
Examples

Text Book

1. ValeriKarpov, Diego Netto, “*Professional AngularJS*”, Wrox Publication, First Edition, 2015