

DEPARTMENT OF MATHEMATICS MUHAMMED ABDURAHIMAN MEMORIAL ORPHANAGE (MAMO) COLLEGE

[Govt. Aided First Grade College & Affiliated to University of Calicut. Re-Accredited by NAAC with A Grade]

## CURRICULUM FOR CERTIFICATE COURSE CERMA008: INTRODUCTION TO R PROGRAMMING

## OFFERED DURING THE ACADEMIC YEAR 2020-21 [APPROVED BY ACADEMIC COMMITTEE, MAMO COLLEGE]



MANASSERY, MUKKAM POST, KOZHIKODE, KERALA, INDIA, 673 602. EMAIL: MAMOCOLLEGE@GMAIL.COM





www.mamocollege.org



[Govt. Aided First Grade College & Affiliated to University of Calicut. Re-Accredited by NAAC with A Grade]

#### DEPARTMENT OF MATHEMATICS

**CURRICULUM FOR CERTIFICATE COURSE IN INTRODUCTION TO R PROGRAMMING [CERMA008]** 

## CONTENTS

1	INSTITUTIONAL VISION, MISSION & OBJECTIVES	3
2.	VISION, MISSION, OBJECTIVES & CORE VALUES OF THE DEPARTMENT	4
3.	B.Sc MATHEMATICS: PEOs	5
4.	B.Sc MATHEMATICS: PSOs	7
5.	B.Sc MATHEMATICS: POs	8
6.	CERMA008: COURSE CURRICULUM	12
	6.1. COURSE LEVEL	13
	6.2. PREREQUISITE	13
	6.3. COURSE INTAKE & ADMISSION	13
	6.4. COURSE COORDINATOR	13
	6.5. COURSE PREAMBLE	13
	6.6. DURATION	14
	6.7. CURRICULUM FOCUS	14
	6.8. COURSE OBJECTIVES	14
	6.9. SKILL EXPECTED	14
	6.10. COURSE OUTCOMES	14
	6.11. MAPPING OF COs WITH POs AND PSOs	15
	6.12. MODULE-WISE COURSE CONTENTS	16
	6.13. DELIVERY MODE	17
	6.14. DELIVERY SCHEDULE	17
	6.15. DETAILED COURSE DELIVERY PLAN	17
	6.16. ASSESSMENT COMPONENTS	20
	6.17. COURSE EVALUATION & GRADING	20
	6.18. GRIEVANCE REDRESSAL	<b>21</b>
	6.19. ISSUANCE OF CERTIFICATES	<b>21</b>

38



@





COORDINATOR ACADEMIC COMMITTEE MUHAMMED ABDURAHIMAN MEMORIAL ORPHANAGE COLLEGE P.O. MANASSERY, MUKKAM - 673602







[Govt. Aided First Grade College & Affiliated to University of Calicut. Re-Accredited by NAAC with A Grade]

#### DEPARTMENT OF MATHEMATICS CURRICULUM FOR CERTIFICATE COURSE IN INTRODUCTION TO R PROGRAMMING [CERMA008]

## INSTITUTIONAL VISION, MISSION & OBJECTIVES



**VISION**: Build Scientifically Oriented, Intellectually Accomplished, Morally Upright and Socially Committed youth who can play a constructive role in Nation Building.



**MISSION**: Intellectual, social and economic empowerment of the youth in general and women, minorities, orphans and the destitute in particular by providing quality, value-based higher-education.



**OBJECTIVES**: Pursuit of Excellence, Harnessing technology, Thrust on value-based education, Nurturing Excellence and Moulding the youth for Nation Building









COORDINATOR ACADEMIC COMMITTEE MUHAMMED ABDURAHIMAN MEMORIAL ORPHANAGE COLLEGE P.O. MANASSERY, MUKKAM - 673602







[Govt. Aided First Grade College & Affiliated to University of Calicut. Re-Accredited by NAAC with A Grade]

#### DEPARTMENT OF MATHEMATICS CURRICULUM FOR CERTIFICATE COURSE IN INTRODUCTION TO R PROGRAMMING [CERMA008]

## VISION, MISSION, OBJECTIVES & CORE VALUES OF THE DEPARTMENT



**VISION:** Educating students to excel in all their endeavours for the betterment of the society and nation



**MISSION**: Empowers students to fulfil their moral, professional, social and economic financial responsibilities



**OBJECTIVES:** (a) Develop a positive attitude towards Mathematics and to appreciate its practical applications in life, (b) Develop problem solving skills and the ability to use mathematics in everyday life, (c) Develop problem solving skills and the ability to use mathematics in everyday life and (d) Use mathematical language effectively and accurately.



**CORE VALUES:** Practical Orientation, Intellectual Enlightenment, Social Commitment, Moral Uprightness, Ethical Self-Fashioning, Cultural Enrichment, International Outlook, Aesthetic Sensibility, Vocational Excellence and Psychological Stability.



Manassery, Mukkam Post, Kozhikode, Kerala, India, 673 602. email: mamocollege@gmail.com





COORDINATOR

ACADEMIC COMMITTEE MUHAMMED ABDURAHIMAN MEMORIAL







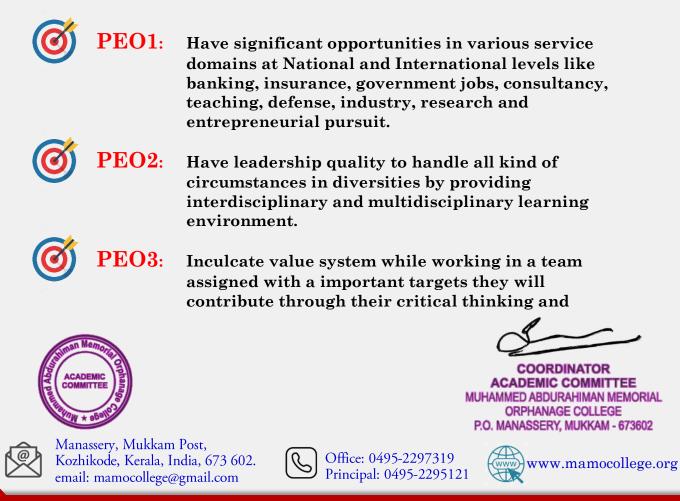
[Govt. Aided First Grade College & Affiliated to University of Calicut. Re-Accredited by NAAC with A Grade]

#### DEPARTMENT OF MATHEMATICS CURRICULUM FOR CERTIFICATE COURSE IN INTRODUCTION TO R PROGRAMMING [CERMA008]

## B.Sc. MATHEMATICS: PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

After 4 to 5 years of graduation, the career and professional accomplishments attained by the B.Sc Mathematics Graduates would reflect that the programme really prepared the graduates to deal with the real world, where they could apply and use the skills and knowledge they have learned to good use

#### Specifically, the graduate would be able to:







[Govt. Aided First Grade College & Affiliated to University of Calicut. Re-Accredited by NAAC with A Grade]

#### **DEPARTMENT OF MATHEMATICS**

**CURRICULUM FOR CERTIFICATE COURSE IN INTRODUCTION TO R PROGRAMMING [CERMA008]** 

mathematical competence holding the ethical values.

O PEO4:

4: Achieve peer recognition as an individual or as a team member having specialized knowledge and expertise to investigate, formulate, analyse and implement on the problems of pure, applied and computational mathematics to compete at global level.



Have continuous learning attitude to adopt new skills and techniques to overcome the problems related with new technologies.



Ŷ

Manassery, Mukkam Post, Kozhikode, Kerala, India, 673 602. email: mamocollege@gmail.com





COORDINATOR ACADEMIC COMMITTEE MUHAMMED ABDURAHIMAN MEMORIAL ORPHANAGE COLLEGE P.O. MANASSERY, MUKKAM - 673602





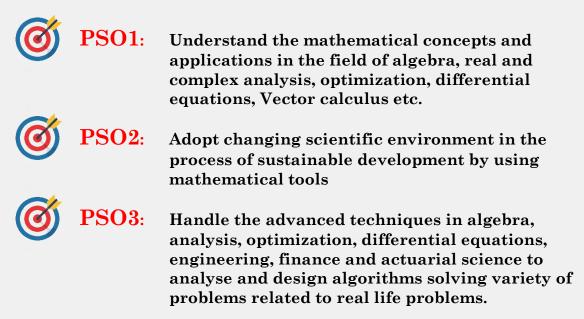


[Govt. Aided First Grade College & Affiliated to University of Calicut. Re-Accredited by NAAC with A Grade]

#### DEPARTMENT OF MATHEMATICS CURRICULUM FOR CERTIFICATE COURSE IN INTRODUCTION TO R PROGRAMMING [CERMA008]

## B.Sc MATHEMATICS: PROGRAMME SPECIFIC OUTCOME (PSOs)

On the successful completion of the B.Sc. Mathematics Programme, the graduates would be able to:









COORDINATOR ACADEMIC COMMITTEE MUHAMMED ABDURAHIMAN MEMORIAL ORPHANAGE COLLEGE P.O. MANASSERY, MUKKAM - 673602







[Govt. Aided First Grade College & Affiliated to University of Calicut. **Re-Accredited by NAAC with A Grade**]

#### **DEPARTMENT OF MATHEMATICS**

CURRICULUM FOR CERTIFICATE COURSE IN INTRODUCTION TO R **PROGRAMMING** [CERMA008]



Have necessary language skills and expertise in the field of research and developments through seminar and project.



Manassery, Mukkam Post, Kozhikode, Kerala, India, 673 602. email: mamocollege@gmail.com





ACADEMIC COMMITTEE MUHAMMED ABDURAHIMAN MEMORIAL **ORPHANAGE COLLEGE** P.O. MANASSERY, MUKKAM - 673602







[Govt. Aided First Grade College & Affiliated to University of Calicut. Re-Accredited by NAAC with A Grade]

#### DEPARTMENT OF MATHEMATICS CURRICULUM FOR CERTIFICATE COURSE IN INTRODUCTION TO R PROGRAMMING [CERMA008]

## B.Sc MATHEMATICS: PROGRAMME OUTCOMES (POs)

On the successful completion of the B.Sc. Mathematics Programme, the graduates would be able to:

Ø

**PO1**:

**PO2**:

**KNOWLEDGE DOMAIN**: Demonstrate an understanding of the basic concepts in mathematics, statistics, operations research and their importance in the solution of some real- world problems.



**PROBLEM ANALYSIS**: Analyse and solve the welldefined problems in mathematics statistics, and operations research. Utilize the principles of scientific enquiry, thinking analytically, clearly and critically, while solving problems and making decision. Find, analyse, evaluate and apply information systematically and shall make defensible decisions.



PRESENTATION AND INTERPRETATION OF DATA:

Demonstrate the ability to manipulate and visualize data and to compute standard statistical summaries.







COORDINATOR ACADEMIC COMMITTEE MUHAMMED ABDURAHIMAN MEMORIAL ORPHANAGE COLLEGE P.O. MANASSERY, MUKKAM - 673602







[Govt. Aided First Grade College & Affiliated to University of Calicut. Re-Accredited by NAAC with A Grade]

#### **DEPARTMENT OF MATHEMATICS**

**CURRICULUM FOR CERTIFICATE COURSE IN INTRODUCTION TO R PROGRAMMING [CERMA008]** 

**PO4:** ETHICS: Analyse relevant academic, professional and research ethical problems and commit to professional ethics and responsibilities with applicable norms of the data analysis and research practices.



**PO5**:

**PO7**:

**PO8:** 

**209**:

**MODERN TOOL USAGE:** Learn, select, and apply appropriate methods and procedures, resources and computing tools with an understanding of the limitations.

🮯 РО6:

**COMMUNICATION:** Effectively communicate about their field of expertise on their activities, with their peer and society at large. Such as, being able to comprehend and write effective reports and design documentation, make effective presentations.

**PROJECT MANAGEMENT:** Apply Knowledge and understanding of principles of mathematics and statistics effectively as an individual, and as a member or leader in diverse teams to manage projects in multidisciplinary environment.



**INDIVIDUAL AND TEAM WORK:** Work effectively as an individual, as a member or leader of various teams, and in multi-disciplinary settings.

**DESIGN/DEVELOPMENT OF SOLUTIONS:** Model the real-world problems in to mathematical equations and draw the inferences by finding appropriate solutions.



Manassery, Mukkam Post, Kozhikode, Kerala, India, 673 602. email: mamocollege@gmail.com





COORDINATOR

ACADEMIC COMMITTEE MUHAMMED ABDURAHIMAN MEMORIAL





[Govt. Aided First Grade College & Affiliated to University of Calicut. Re-Accredited by NAAC with A Grade]

#### **DEPARTMENT OF MATHEMATICS**

**CURRICULUM FOR CERTIFICATE COURSE IN INTRODUCTION TO R PROGRAMMING [CERMA008]** 



**PO10:** LIFE-LONG LEARNING: Continue to acquire mathematical knowledge and skills appropriate to professional activities and demonstrate highest standards of ethical issues in mathematics.



Manassery, Mukkam Post, Kozhikode, Kerala, India, 673 602. email: mamocollege@gmail.com





COORDINATOR ACADEMIC COMMITTEE MUHAMMED ABDURAHIMAN MEMORIAL ORPHANAGE COLLEGE P.O. MANASSERY, MUKKAM - 673602







[Govt. Aided First Grade College & Affiliated to University of Calicut. Re-Accredited by NAAC with A Grade]

DEPARTMENT OF MATHEMATICS CURRICULUM FOR CERTIFICATE COURSE IN INTRODUCTION TO R PROGRAMMING [CERMA008]

# **CERTIFICATE COURSE**

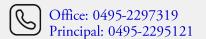
## CERMA008: QUANTITATIVE APTITUDE IN COMPETITIVE EXAMS

# **COURSE CURRICULUM**

Course Name	Quantitative Aptitude In Competitive Exams
Course Code	CERMA008
Year	2020-21
Course Designer	Mr. Mohiyudheen N
Couse Duration	30 Hrs
Course Schedule	November to February
Maximum Students Intake	60 Students



@





COORDINATOR ACADEMIC COMMITTEE MUHAMMED ABDURAHIMAN MEMORIAL ORPHANAGE COLLEGE P.O. MANASSERY, MUKKAM - 673602







[Govt. Aided First Grade College & Affiliated to University of Calicut. Re-Accredited by NAAC with A Grade]

#### DEPARTMENT OF MATHEMATICS CURRICULUM FOR CERTIFICATE COURSE IN INTRODUCTION TO R PROGRAMMING [CERMA008]

#### **1. COURSE LEVEL**

Foundational, skill-oriented certificate programme.

#### 2. PREREQUISITE

None.

#### **3. COURSE INTAKE & ADMISSION**

Maximum 60 students will be given admission to the course based on First-Come-First-Serve basis. All the students of the MAMO College are eligible for free enrolment for the course. The enrolment notification will be issued for the course well in advance of the commencement of the course.

#### 4. COURSE COORDINATOR

Mr. Mohiyudheen N, Assistant Professor, Department of Mathematics

#### **5. COURSE PREAMBLE**

In this course, you will learn how to program in R and how to use R for effective data analysis. You will learn how to install and configure software necessary for a statistical programming environment and describe generic programming language concepts as they are implemented in a high-level statistical language. The course covers practical issues in statistical computing which includes programming in R, reading data into R, accessing R packages, writing R functions, debugging, profiling R code, and organizing and commenting R code. Topics in statistical data analysis will provide working examples.







COORDINATOR ACADEMIC COMMITTEE MUHAMMED ABDURAHIMAN MEMORIAL ORPHANAGE COLLEGE P.O. MANASSERY, MUKKAM - 673602







[Govt. Aided First Grade College & Affiliated to University of Calicut. Re-Accredited by NAAC with A Grade]

#### DEPARTMENT OF MATHEMATICS CURRICULUM FOR CERTIFICATE COURSE IN INTRODUCTION TO R PROGRAMMING [CERMA008]

#### **6. DURATION**

Total Duration: 30 Hrs. [Contact Hrs. 20 Hrs., Lab Hours: 6 Hrs. and Assessment Works: 4]

## 7. CURRICULUM FOCUS

Enhance the employability of the learners through curriculum enrichment for additional skill development.

## 8. COURSE OBJECTIVES

Learners are exposed to

- (a) Understand critical programming language concepts.
- (b) Configure statistical programming software
- (c) Make use of R loop functions and debugging tools
- (d) Collect detailed information using R profiler.

#### 9. SKILL EXPECTED

On the successful completion of the course, learners will be able to:

- (a) Data Analysis
- (b) Debugging
- (c) R Programming
- (d) R Studio.

## **10. COURSE OUTCOMES**

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









COORDINATOR ACADEMIC COMMITTEE MUHAMMED ABDURAHIMAN MEMORIAL ORPHANAGE COLLEGE P.O. MANASSERY, MUKKAM - 673602







[Govt. Aided First Grade College & Affiliated to University of Calicut. Re-Accredited by NAAC with A Grade]

#### **DEPARTMENT OF MATHEMATICS**

**CURRICULUM FOR CERTIFICATE COURSE IN INTRODUCTION TO R PROGRAMMING [CERMA008]** 

CO No	Course Outcome(CO)	Skill/Knowledge Attainment Level Based on Revised Bloom's Taxonomy			
CO1	Understand the basics in R programming in terms of constructs, control statements, string functions	Understand			
CO2	Understand the use of R for Big Data analytics	Understand			
CO3	Learn to apply R programming for Text processing	Apply			
CO4	Able to appreciate and apply the R programming from a statistical perspective	Apply			

## 11. MAPPING OF COs WITH PSOs AND POs

COs	PO1	PO2	PO3	P04	PO5	P06	PO7	P08	P09	P010	PS01	PS02	PSO3	PSO4
CO1	1	1	1	1	3	1	2	1	1	1	1	2	1	1
CO2	2	2	2	1	1	1	3	1	2	1	1	1	3	1
CO3	2	1	1	2	1	2	1	1	1	2	1	1	2	1
CO4	1	1	1	1	1	2	1	2	1	1	2	1	1	2
AVG	1.5	1.3	1.3	1.3	1.5	1.5	1.8	1.3	1.3	1.3	1.3	1.3	1.8	1.3



Manassery, Mukkam Post, Kozhikode, Kerala, India, 673 602. email: mamocollege@gmail.com





COORDINATOR

ACADEMIC COMMITTEE MUHAMMED ABDURAHIMAN MEMORIAL ORPHANAGE COLLEGE

Page 15



[Govt. Aided First Grade College & Affiliated to University of Calicut. Re-Accredited by NAAC with A Grade]

#### DEPARTMENT OF MATHEMATICS CURRICULUM FOR CERTIFICATE COURSE IN INTRODUCTION TO R PROGRAMMING [CERMA008]

## **12. MODULE-WISE COURSE CONTENTS**

MODULE 1

**MODULE DURATION:** 14 Hrs. [Contact Hrs. 10 Hrs. Lab Hours: 2 Hrs., and Assessment Works: 2]

**MODULE CONTENT**: Introducing to R – R Data Structures – Help functions in R – Vectors – Scalars – Declarations –recycling – Common Vector operations – Using all and any – Vectorized operations – NA and NULL values – Filtering – Vectorised if-then else – Vector Equality – Vector Element names

**MODULE OUTCOME:** On successful completion of the module, learners can familiarize with the fundamentals of R programming such as variables, control structures, functions and many others..

#### MODULE 2

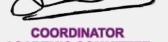
**MODULE DURATION:** 16 Hrs. [Contact Hrs. 10 Hrs., Lab Hours: 4 Hrs. and Assessment Works: 2]

MODULE CONTENT: Creating matrices – Matrix operations – Applying Functions to Matrix Rows and Columns – Adding and deleting rows and columns – Vector/Matrix Distinction – Avoiding Dimension Reduction –Higher Dimensional arrays – lists – Creating lists – General list operations – Accessing list components and values – applying functions to lists – recursive lists.

**MODULE OUTCOME:** On successful completion of the module, learners will learn the powerful support of R programming for working with matrices.







ACADEMIC COMMITTEE MUHAMMED ABDURAHIMAN MEMORIAL ORPHANAGE COLLEGE P.O. MANASSERY, MUKKAM - 673602







[Govt. Aided First Grade College & Affiliated to University of Calicut. **Re-Accredited by NAAC with A Grade**]

#### **DEPARTMENT OF MATHEMATICS** CURRICULUM FOR CERTIFICATE COURSE IN INTRODUCTION TO R **PROGRAMMING** [CERMA008]

#### **REFERENCES:**

- 1. Norman Matloff, The Art of R Programming: A Tour of Statistical Software Design, Publisher: No Starch Press, 2011.
- 2. Jared P. Lander, R for Everyone: Advanced Analytics and Graphics, Addison-Wesley Data & Analytics Series, 2013.

#### ADDITIONAL REFERENCES & STUDY MATERIALS:

- 3. Mark Gardener, "Beginning R The Statistical Programming Language", Wiley, 2013
- 4. Robert Knell, "Introductory R: A Beginner's Guide to Data Visualisation, Statistical Analysis and Programming in R", Amazon Digital South Asia Services Inc, 2013.

#### **13. DELIVERY MODE**

The course employs multi-mode delivery mechanism including contact lecture and online classes.

#### **14. DELIVERY SCHEDULE**

November to February.

#### **15. DETAILED COURSE DELIVERY PLAN**

Hour	Delivery Mode and Activity	Topics to be Covered
1	Contact Hour - 1: Classroom Discussion	Introducing the Course
2	Contact Hour - 2: Classroom Discussion	Introducing to R, R Data Structures, Help functions in R



Manassery, Mukkam Post, Kozhikode, Kerala, India, 673 602. email: mamocollege@gmail.com





COORDINATOR







[Govt. Aided First Grade College & Affiliated to University of Calicut. Re-Accredited by NAAC with A Grade]

#### DEPARTMENT OF MATHEMATICS CURRICULUM FOR CERTIFICATE COURSE IN INTRODUCTION TO R PROGRAMMING [CERMA008]

Hour	Delivery Mode and Activity	Topics to be Covered
3	Contact Hour - 3: Classroom Discussion	Vectors, Scalars
4	Contact Hour - 4: Classroom Discussion	Declarations, recycling
5	Contact Hour - 5: Classroom Discussion	Common Vector operations, Using all and any
6	Assessment Hour - 1	Assignment to Create R- Programming
7	Contact Hour - 6: Classroom Discussion	Vectorized operations, NA and NULL values
8	Contact Hour - 7: Classroom Discussion	Filtering – Vectorised if-then else
9	Lab Hour - 1	Using all and any, NA and NULL values
10	Contact Hour - 8: Classroom Discussion	Vector Equality
11	Contact Hour - 9: Classroom Discussion	Vector Element names
12	Lab Hour - 2	Vectorised if-then else,Vector Equality
13	Assessment Hour - 2	Assignment to Create R- Programming
14	Contact Hour - 10: Classroom Discussion	Review of Module 1
15	Contact Hour - 11: Classroom Demonstration	Creating matrices, Matrix operations
16	Contact Hour - 12: Classroom Demonstration	Applying Functions to Matrix Rows and Columns



@

Manassery, Mukkam Post, Kozhikode, Kerala, India, 673 602. email: mamocollege@gmail.com





COORDINATOR

ACADEMIC COMMITTEE MUHAMMED ABDURAHIMAN MEMORIAL ORPHANAGE COLLEGE P.O. MANASSERY, MUKKAM - 673602

Page 18



[Govt. Aided First Grade College & Affiliated to University of Calicut. Re-Accredited by NAAC with A Grade]

#### DEPARTMENT OF MATHEMATICS CURRICULUM FOR CERTIFICATE COURSE IN INTRODUCTION TO R PROGRAMMING [CERMA008]

Hour	Delivery Mode and Activity	Topics to be Covered		
17	Contact Hour - 13 Classroom Demonstration	Adding and deleting rows and columns, Vector/Matrix Distinction		
18	Contact Hour - 14 Classroom Demonstration	Avoiding Dimension Reduction		
19	Contact Hour - 15 Classroom Demonstration	Higher Dimensional arrays		
20	Lab Hour - 3	Creating matrices, Matrix operations.		
21	Lab Hour - 4	Applying Functions to Matrix Rows and Columns, Adding and deleting rows and columns.		
22	Contact Hour -16 Classroom Discussion	Vector/Matrix Distinction, Lists, Creating lists		
23	Assessment Hour - 3	Assignment to Create R- Programming		
24	Contact Hour - 17: Classroom Demonstration	General list operations, Accessing list components and values		
25	Contact Hour - 18: Classroom Demonstration	Applying functions to lists		
26	Lab Hour - 5	Creating lists, General list operations		
27	Contact Hour - 19: Classroom Discussion	Recursive lists.		
28	Lab Hour - 6	Applying functions to lists, recursive lists.		
29	Contact Hour - 20: Classroom Discussion	Review of Module 2		
30	Assessment Hour - 4	Course End Assessment		



@



COORDINATOR ACADEMIC COMMITTEE MUHAMMED ABDURAHIMAN MEMORIAL ORPHANAGE COLLEGE P.O. MANASSERY, MUKKAM - 673602







[Govt. Aided First Grade College & Affiliated to University of Calicut. Re-Accredited by NAAC with A Grade]

#### DEPARTMENT OF MATHEMATICS CURRICULUM FOR CERTIFICATE COURSE IN INTRODUCTION TO R PROGRAMMING [CERMA008]

## **16. ASSESSMENT COMPONENTS**

Total Marks: 100

**CLASSROOM AND GROUP PARTICIPATION**: **20 Marks.** This component aims at testing the course content understanding and the reflection skills and their attainment levels.

**COURSE WORK: 30 Marks.** This component aims at testing the skill attainment levels of the learners in analysing and implementing the real-world problem.

**MID-COURSE ASSIGNMENT**: **20 Marks.** This component aims at testing the module-wise attainment levels of the course objectives and course outcome and module outcomes.

**END-COURSE ASSESSMENT**: **30 Marks.** This component aims at testing overall attainment levels of the course with respect to course objectives, course outcome and module outcomes.

## **17. COURSE EVALUATION & GRADING**

The course evaluation is done/coordinated entirely by the course coordinator. The following 10-point Indirect Grading System is used for awarding grades to students:

Percentage of Mark	Letter Grade	Interpretation	Class
95 and above	0	Outstanding	First Class with Distinction
85 to below $95$	A+	Excellent	First Class with Distinction
75 to below 85	А	Very good	First Class with Distinction
65 to below 75	B+	Good	First Class
55 to below $65$	В	Satisfactory	First Class





Manassery, Mukkam Post, Kozhikode, Kerala, India, 673 602. email: mamocollege@gmail.com





COORDINATOR ACADEMIC COMMITTEE MUHAMMED ABDURAHIMAN MEMORIAL ORPHANAGE COLLEGE P.O. MANASSERY, MUKKAM - 673602



[Govt. Aided First Grade College & Affiliated to University of Calicut. Re-Accredited by NAAC with A Grade]

#### DEPARTMENT OF MATHEMATICS CURRICULUM FOR CERTIFICATE COURSE IN INTRODUCTION TO R PROGRAMMING [CERMA008]

Percentage of Mark	Letter Grade	Interpretation	Class
45 to below $55$	$\mathbf{C}$	Average	Second Class
35 to below $45$	Р	Pass	Third Class
Below 35	F	Failure	Fail
Incomplete	Ι	Incomplete	Fail
Absent	Ab	Absent	Fail

The grade is awarded by the course-coordinator by considering the overall performance of the learner in all the assessment component of the course.

## **18. GRIEVANCE REDRESSAL**

The grievances, if any, can be submitted to the Head of the Department for its redressal. Those grievances that cannot be redressed by HoD can be forwarded to Academic Council of the College for final decision on the matter.

## **19. ISSUANCE OF CERTIFICATES**

The Course Completion Certificate will be issued to all the successful candidates showing the Total Marks and Grade Obtained.









COORDINATOR ACADEMIC COMMITTEE MUHAMMED ABDURAHIMAN MEMORIAL ORPHANAGE COLLEGE P.O. MANASSERY, MUKKAM - 673602



