UNIVERSITY OF KERALA
School of Distance Education

Master of Science (Mathematics)
PROGRAMME PROJECT REPORT

1. Program's Mission and Objectives

Mission

In keeping with the overall mission of the School of Distance Education,University of Kerala; the department is committed to providing a variety of courses designed to help students acquire an understanding of mathematics including their use and abuse, along with making students to become quantitatively literate citizens.

Objectives

- To provide adequate knowledge of mathematics to enable students to pursue a mathematical career.
- To develop the ability to work both independently and collaboratively on mathematical problems.
- To maintain the program-specific applicability of these courses, by consulting with faculty from the appropriate disciplines and by monitoring student development of knowledge and skills within the application area.
- To develop the ability to use contemporary mathematical software.

2. Relevance of the program with HEI's Mission and Goals:

Offered in the distance mode, MSc Mathematics will be closely aligned with the vision and mission of the University of Kerala, in vowing to ensure knowledge based, student focused, quality and cost conscious but socially responsible education. MSc Mathematics in the distance mode follows the same syllabus and curriculum of the program offered in the regular mode through the affiliated colleges of the University of Kerala.

3. Nature of prospective target group of learners:

MSc program in Mathematics has wide demand, and only a small percentage of the students are being accommodated in the regular mode through colleges. This will join the attempt to democratising higher education to large segments of the population, providing an innovative system of university level education that is flexible and open in terms of methods, pace of learning, eligibility for enrolment and age of entry. We strive to maintain a culture of inclusion so as to provide high quality educational experience to learners irrespective of caste, creed, region or gender in a cost effective way. Our target group includes learners from socially and economically disadvantaged

groups. Understanding the needs of the learners we have structured our learning material and induction programs to lead the learners through the threshold of higher education, and lead them through the course of the program and the final evaluation.

4. Appropriateness of program to be conducted in Open and Distance Learning mode to acquire specific skills and competence:

The MSc Mathematics program will see to ensure knowledge, skills and competences in the learners. The specific learning outcomes of the program are given below:

- Comprehensive knowledge in mathematical theory at an advanced level.
- Ability to use theoretical and empirical methods to analyse mathematical issues.
- Exposure to various quantitative techniques which are essential to analyse mathematical issues.
- Analyse existing mathematical models and evaluate their relevance for practical problem solving.
- Planning and carrying out applied work and research projects in mathematics.
- Critical thinking capacity.
- Capability in using mathematics for the purpose of research.

5 Instructional Design:

Semester	Course Code	Title of Course	Maximum Marks		
I			CA	ESA	Total
	MM 211	Linear Algebra	25	75	100
	MM 212	Real Analysis I	25	75	100
	MM 213	Differential Equations	25	75	100
	MM214	Topology I	25	75	100
II	MM221	Algebra	25	75	100
	MM222	Real Analysis II	25	75	100
	MM223	Topology II	25	75	100
	MM224	Computer Programming in C++	25	75	100
III	MM231	Complex Analysis I	25	75	100
	MM232	Functional Analysis I	25	75	100
	MM 233	Elective I	25	75	100
	MM 234	Elective II	25	75	100
IV	MM241	Complex Analysis II	25	75	100
	MM242	Functional Analysis II	25	75	100
	MM 243	Elective III	25	75	100
	MM 244	Elective IV	25	75	100
	MM245	Dissertation		80+20(viva)	100

		Comprehensive Viva		100	100
		GRAND TOTAL			1800

CA: Continuous Assessment, ESA: End Semester Examination

The details of the open and elective courses are given below with one among the following.

Semester	Paper code	Title of the Paper
3	MM233	Operations Research
3	MM234	Graph Theory

Semester	Paper code	Title of the Paper
4	MM243	Coding Theory
4	MM244	Analytic Number Theory

5. Duration of the program

Four semesters, two years.

6. Faculty and support staff requirement

M.Sc Mathematics is coordinated by a full time regular faculty member

.There is one more full time faculty member on contract basis. There is sufficient number of staff in the School of Distance Education office for the administrative work involved in the smooth conduct of the program. Moreover the School of Distance Education has a panel of experts and qualified external teachers approved by the Honorable Vice Chancellor of Kerala University. Their services are used in the preparation of Self Learning Material, for engaging contact classes and for evaluation of answer scripts.

7.Instructional delivery mechanisms

In addition to providing Self Learning Material, students are offered 60 contact hours each semester, conducted over 10 days during the weekend. Classes are taken using audio visual aids, and students are encouraged to use web resources. A collection of audio/video lectures are being prepared, which will be made available to the learners on an experimental basis from this academic year onwards.

8. Procedure for admissions, curriculum transaction and evaluation :

Applications for admission are received online. Detailed information regarding admission is available in the website of SDE and admission notifications are issued in leading national and regional dailies.

Eligibility for admission to MSc Mathematics, as per university norms is graduation in Mathematics (B.Sc. with Mathematics or Statistics as Core Course securing not less than 5.5

CCPA(S) * out of 10(for graduates who have passed qualifying examination in CBCS pattern - 2013 admissions)or B.Sc. with Mathematics or Statistics as Core Course securing not less than 2.2 CGPA(S) * out of 4 (for for graduates who have passed qualifying examination in CBCS pattern prior to 2013 admissions) or B.Sc. with Mathematics or Statistics as optional Main subject under Part III scoring not less than 55% marks (for graduates who have passed qualifying examination in Annual scheme / other pattern) /B.Sc. Optical Instrumentation (Vocational), Instrumentation (Vocational), Industrial Chemistry (Vocational) / Electrical Equipment Maintenance (Vocational), Computer Applications(Career Related/Vocational).

9. Fee Structure

The fee for the course is Rs.11,880/-(Rupees Eleven thousand eight hundred and eighty only).Tuition fee is waived for students belonging to eligible categories.

10.**Academic Calendar**

ADMISSION		
Admission Notification	First week of June	
Closing date of Admission	Last week of September	
Schedule of distribution of study materials		
Course	Date	By Post
III, IV Semester	Last week of June	Last week of July
I & II Semester	Last week of October	Last week of November
Schedule of contact classes		
Course	Schedule	
III & IV Semester	First week of July	
I & II Semester	First week of November	
Schedule of examinations		
Course	Schedule	
III and IV Semester	First week of April	
I and II Semester	Second and Third week of April	

11. Financial Assistance

Concession for tuition fee will be given to SC/ST and OEC students. The students belonging to SC/ST and OEC category will be admitted to the programme without remitting the tuition fee. The fee for the students thus admitted will be later claimed form SC/ST

department as per the rules laid down by the government of Kerala and will be remitted to Kerala University Fund (KUF).

Detailed time schedule of contact classes and dates of spot distribution of SLM will be announced in the Press release by the University (available in the Website / published in all leading regional Newspapers). Besides this, SMS alerts are also given to the students regarding important dates like dates of contact classes, last date of payment of tuition fee, last date for submission of application for examination, etc.

12. Requirement of the laboratory support and Library Resources:

Laboratory hours are mandatory for MSc Mathematics, for computer papers students can avail the computers in the Central Computer Lab of the School of Distance Education which has continuous internet connectivity.

The SDE has a separate Library with more than 28,000 books. Library automation is done using LibSoft software which facilitates all in- house operations of the library. The library currently subscribes to more than 15 journals of various subject fields. An amount of Rs. 525/-has to be remitted by the students to obtain membership in the Library, of which Rs. 420/- will be refunded on completion of the course. The non members can make use of the library resources and the reference services by producing their student's ID proof. They can use the library for reference purpose and they can avail photocopy facilities.

13. Cost estimate of the program and the provisions: (Base 2019-20)

Sl.No	Expenditure	Total for the SDE during 19-20 (25987 students) (Rs. in lakh)	Cost estimate for M.Sc Mathematics programme (400 students)
01	Pay and Allowance	435.00	1069600
02	Contact classes and evaluation	80.00	122800
03	Course materials	100.00	153600
04	Advertisement charges	25.00	38400
05	Postage and telephone	7.4	11200
06	Books and Periodicals	3.5	5200
07	Miscellaneous	9.95	15200
	Total	660.85	1416000
	Provisions (6%)		84960
	Total		1500960 Cost per student/ year=Rs.3752

14. Quality assurance mechanism and expected program outcomes

The Board of Studies for M.Sc Mathematics constituted by the University of Kerala approves and reviews the syllabus, course content and the Self Learning Material of M.Sc Mathematics offered in the distance mode also. The overall ensuring of quality will be closely monitored by the Centre for Internal Quality Assurance, School of Distance Education.

15. Expected program outcomes:

Towards the end of the programme, students will be able to :

a. To develop the ability to analyze mathematical problems.

b. To formulate the critical problems in daily life to mathematical model.

c. Able to attend UGC-Net, CAT,CSIR and MAT etc

d. Enable to apply for the post of Intellegence Beurou

e. To optimize the man power in Military and other business areas

f. To motivate research activities in various field in Mathematics , statistics, population and applied mathematics.

g. To prepare for other eligible job areas in state and central govt.

Note: The programme structure is based on the present syllabus existing in the regular mode in the University of Kerala. The UG and PG syllabi in the regular mode in the University is currently being revised and is about to be finalized. SDE will adopt the revised syllabus as such when they are finalized for the 2020-21 admission. The SLMs will also be updated accordingly.

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REGISTRAR
IN-CHARGE

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