PERIYAR INSTITUTE OF DISTANCE EDUCATION

PERIYAR UNIVERSITY

PERIYAR PALKALAI NAGAR

SALEM - 11

M.Sc. Mathematics

(SEMESTER PATTERN WITH CREDIT SYSTEM)

REGULATIONS AND SYLLABUS

(For candidates admitted from 2018 – 2019 onwards)

PERIYAR INSITUTE OF DISTANCE EDUCATION, SALEM –11
M.Sc. MATHEMATICS
REGULATIONS AND SYLLABUS
(For the candidates admitted from 2018-2019)

1. PROGRAMME MISSION AND OBJECTIVES

MISSION:

The mission of the program is to provide courses which complete the basic mathematical competence, covering all the main areas of mathematics. The mission of the programme is to build a strong background in disciplines such as algebra, analysis and differential equations.

OBJECTIVES:

The primary objectives of this course are

- To provide students with rigorous and thorough knowledge of a broad range of pure and applied areas of mathematics.
- To impart knowledge from basic and advanced level concepts with applications in various fields of mathematics.
- To establish inter-disciplinarily between mathematics and othersubjects from Humanities and the Social Sciences.

2. RELEVANCE OF THE PROGRAMME WITH HEI'S MISSION AND GOALS

In parallel with scientific and technological advances in today's world of higher education, the activities must be conducted without the constraints of time and space. One of the most important of these activities is the Distance Education. The M.Sc. MathematicsProgramme through distance mode of Periyar University is offered by Periyar Institute of Distance Education (PRIDE). The University has a team of well qualified and experienced teachers available for academic counseling, guidance and help. Thus offering M.Sc. Mathematicsprogramme in the PRIDE will contribute substantially in fulfilling the mission of Periyar University.This programme encourages building on student's theoretical knowledge and training them to become competent person in mathematics.

3. NATURE OF PROSPECTIVE TARGET GROUP OF LEANERS

This programme is designed specifically for in-service employees who wish to enhance their knowledge.Further, this programme specifically aims at enhancing the mathematical competencies of the teachers working in secondary and higher secondary schools.

4. APPROPRIATENESS OF THE PROGRAMME

The M.Sc. Mathematics through distance education programme provides opportunities for the in-service teachers to understand the latest trends in teaching learning process and advancements in mathematics.

5. INSTRUCTIONAL DESIGN

a) Structure of the course

S.No.	Course Code	Title of the paper	Int. Marks	Ext. Marks	Total Marks	Credits
I SEMESTER						
1.		Linear Algebra	25	75	100	4
2.		Real Analysis	25	75	100	4
3.		Ordinary Differential Equations	25	75	100	4
4.		Discrete Mathematics	25	75	100	4
II SEMESTER						
5.		Algebra	25	75	100	4
6.		Complex Analysis	25	75	100	4
7.		Partial Differential Equations	40	60	100	4
8.		Probability Theory	25	75	100	4
III SEMESTER						
10.		Topology	25	75	100	4
11.		Measure Theory &Integration	25	75	100	4
12.		Numerical Analysis	25	75	100	4
13.		Mechanics	40	60	100	4
IV SEMESTER						
14.		Functional Analysis	25	75	100	4
15.		Methods of Applied Mathematics	25	75	100	4
16.		Differential Geometry	25	75	100	4
17.		Optimization Techniques	25	75	100	4
		Total			**1600**	**64**

b) Duration of the Programme

The two-year postgraduate programme in M.Sc. Mathematics consists of four semesters under credit system.

c) **Faculty and support staff requirements**

Staff Category	Required number
Assistant Professor	4
Clerical Assistant	1

d) **Instructional delivery mechanism**

The medium of instruction is English. The printed self learning materials of the programme will be supplied to the candidates. There will be compulsory personal contact programme (PCP) of 4 days perweek. The content subjects of the course will be dealt during the PCPs.

VI PROCEDURE FOR ADMISSION, CURRICULAM TRANSACTION AND EVALUATION

a) **Eligibility for admission**

A candidate who has passed B.Sc. Mathematics or B.Sc. Mathematics (CA) of this University or an examination of some other university accepted by the syndicate as equivalent there to shall be permitted to appear and qualify for the M.Sc. Mathematics Degree Examination of this university after a course of two academic years of Periyar University.

b) **Admission Procedure**

The procedure of admission is as per the norms of the Periyar University. Admission will be based on the reservation policy of the government of Tamil Nadu.

c) **Fees Structure per year**

As per PRIDE norms

d) **Examinations**

Eligibility for admission to the examination

Students with a minimum of 50% attendance in the PCPs areeligible to write the examination.

Question Paper Design

The examination shall be three hours duration to each paper at the end of each semester. The candidate failing in any subject(s) will be permitted to appear for each failed subject(s) in the subsequent examination.

Question papers will be designed in two sections (Part A and Part B) with number of questions and allotment of marks as detailed below:

Theory – Internal – Marks distribution

Internal Test – 15 Marks
PCP Attendance – 5 Marks
Assignment - 5 Marks

Theory – External
Time: 3 Hours Max.Marks   - 75

PART-A (10 x 2 =20 Marks)

(Answer all questions)
(Two questions from each unit)

PART-B (5x5=25 Marks)

(Answer all questions)
(One question from each unit with internal choice)

PART-C (3 x10= 30 Marks)

(Answer any three out of five questions)
(One question from each unit)

Passing Minimum:

The candidate shall be declared to have passed the examination if the candidate secures not less than 50% marks in each theory and practical paper both external and internal.

Classification of Results:

Marks	Grade Point	CGPA	Grade	Description
96 and above 91-95	10 9.5	9.51 and above 9.01-9.50	S+ S	First Class - Exemplary
86-90 81-85 76-80	9.0 8.5 8.0	8.51 – 9.00 8.01- 8.50 7.51-8.00	D++ D+ D	First Class - Distinction
71-75 66-70 61-65	7.5 7.0 6.5	7.01-7.50 6.51-7.00 6.01-6.50	A++ A+ A	First Class
56-60 50-55	6.0 5.5	5.51-6.00 5.00-5.50	B C	Second Class
Below 50	--	Below 5.00	RA	Reappear
			A	Absent

GPA = ∑ (CDT x GPT) / ∑ CDT

CDT = Number of credits of core and elective course

GPT = Grade point (obtained by dividing the percentage of marks scored by 10)

VII REQUIREMENT OF THE LABORATORY SUPPORT AND LIBRARY RESOURCES

The central library of Periyar University has text books, reference books, conference proceedings, journals, back volumes, standards and non-book materials such as e-books, CD-ROMs, softwares and data bases which may be effectively used by the candidates. All routine functions of the library are automated with the help of an integrated library software package and SOUL, developed and distributed by UGC-INFLIBNET.

VIII COST ESTIMATE OF THE PROGRAMME

S.No.	Headwise Expenditure	Amount (inRs.)
1.	Honorarium & Allowances	2,00,000
2.	Lesson writing remuneration	2,40,000
3.	Personal Contact Programme	10,00,000
4.	Induction Programmes	1,00,000
5.	Printing of course materials	4,00,000

6.	Courier charges	50,000
7.	Hospitality	2,00,000
8.	Board of Studies	30,000
9.	Advertisement charges	50,000
10.	Stationary charges	10,000
11.	Printing of Prospectus	10,000
12.	Reserve fund per year	1,00,000
	Total Expenditure	23,90,000

IX QUALITY ASSURANCE MECHANISM AND EXPECTED PROGRAMME OUTCOMES

The University quality policy is to attain best quality in every domain to assure stakeholder delight through professionalism exhibited in terms of strong purpose, sincere efforts, steadfast direction and skillful execution.

From the beginning, i.e., even from the pre-admission phase the students will be taken care in terms of guidance by our academic and administrative members. At most care and support will be provided during the study period. Before and after the examination proper guidance and counseling will be provided. The feedback from students on teaching will be collected every semester using appropriate feedback formats. Experience with the curriculum will be collected based on the discussion along with the students and teachers.

The expected programme outcomes are:

- Attainment of knowledge about learning through innovative teaching methods
- Applying the principles and concepts of broad range of fundamental and advanced area of chemistry in teaching learning process
- Realizing the importance of ICT based teaching learning process.