Department of Mathematics

Pavanatma College, Murickassery

Idukki-685604

Curriculum Implementation Plan

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Course – I   Semester – I

FOUNDATION OF MATHEMATICS

1.1 Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	MM1CRT01
4	Credit	3
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	72
9	Hours per Week	4
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	$10\ (2 \times 5 = 10)$

1.2 Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Basic Logic	Chalk and talk,	20	5
2	Set theory	Chalk and talk	12	3
3	Relations	Chalk and talk, ICT	20	5
4	Theory of Equations	Chalk and talk	20	5

1.3 Continuous Evaluation Schedule

1.3.1 Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	80	3 Hours	Model Examination

1.3.2 Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

1.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – II   Semester – II

ANALYTIC GEOMETRY, TRIGONOMETRY AND DIFFERENTIAL CALCULUS

2.1   Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	MM2CRT02
4	Credit	3
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	72
9	Hours per Week	4
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	$10 \, (2 \times 5 = 10)$

2.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Conic Sections	Chalk and talk	22	6
2	Polar Co-ordinates	Chalk and talk	15	4
3	Trigonometry	Chalk and talk	17	5
4	Differential Calculus	Chalk and talk	18	5

2.3   Continuous Evaluation Schedule

2.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	80	3 Hours	Model Examination

2.3.2   Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

2.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – III   Semester – III

CALCULUS

3.1   Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	MM3CRT03
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	10 ($2 \times 5 = 10$)

3.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Differential Calculus	Chalk and talk, ICT	27	6
2	Partial Differentiation	Chalk and talk ,ICT	18	4
3	Integral Calculus	Chalk and talk	20	4
4	Multiple Integrals	Chalk and talk	25	5

3.3   Continuous Evaluation Schedule

3.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	80	3 Hours	Model Examination

3.3.2   Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

3.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – IV   Semester – IV

VECTOR CALCULUS, THEORY OF NUMBERS AND LAPLACE TRANSFORM

4.1   Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	MM4CRT04
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	$10\ (2 \times 5 = 10)$

4.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Vector Differentiation	Chalk and talk, ICT	25	5
2	Vector Integration	Chalk and talk, ICT	30	6
3	Theory of Numbers	Chalk and talk, ICT	15	3
4	Laplace transforms	Chalk and talk	20	4

4.3   Continuous Evaluation Schedule

4.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	80	3 Hours	Model Examination

4.3.2   Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

4.3.3   Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – V   Semester – V

MATHEMATICAL ANALYSIS

5.1   Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	MM5CRT05
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	108
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	25
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	10 ($2 \times 5 = 10$)

5.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Real Numbers	Chalk and talk	30	6
2	Sequences	Chalk and talk	30	6
3	Series	Chalk and talk	24	5
4	Limits	Chalk and talk	24	5

5.3   Continuous Evaluation Schedule

5.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	8	20	1 Hours	Assessment Test
2	16	20	1 Hours	Assessment Test
3	25	80	3 Hours	Model Examination

5.3.2   Assignments

No.	Week	Duration	Assignments type
1	8	1 Week	Problem solving
2	16	1 Week	Problem solving
3	25	1 Week	Problem solving

5.3.3   Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	8	3	20 Minute	Lecture
2	16	3	20 Minute	Lecture
3	25	3	20 Minute	Lecture

Course – VI   Semester – V

DIFFERENTIAL EQUATIONS

6.1   Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	MM5CRT06
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	108
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	25
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	10 ($2 \times 5 = 10$)

6.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	What is a differential equation	Chalk and talk	26	6
2	Second order linear equations	Chalk and talk	26	6
3	Power Series solutions and special functions	Chalk and talk	26	6
4	Partial Differential equations	Chalk and talk	30	6

6.3   Continuous Evaluation Schedule

6.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	8	20	1 Hours	Assessment Test
2	16	20	1 Hours	Assessment Test
3	25	80	3 Hours	Model Examination

6.3.2 Assignments

No.	Week	Duration	Assignments type
1	8	1 Week	Problem solving
2	16	1 Week	Problem solving
3	25	1 Week	Problem solving

6.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	8	3	20 Minute	Lecture
2	16	3	20 Minute	Lecture
3	25	3	20 Minute	Lecture

Course – VII   Semester – V

ABSTRACT ALGEBRA

7.1   Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	MM5CRT07
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	10 ($2 \times 5 = 10$)

7.2 Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Introduction to Groups	Chalk and talk	25	5
2	Permutation Group	Chalk and talk	25	5
3	Homomorphisms and Factor groups	Chalk and talk	20	4
4	Rings and Fields	Chalk and talk	20	4

7.3 Continuous Evaluation Schedule

7.3.1 Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	80	3 Hours	Model Examination

7.3.2 Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

7.3.3   Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – VIII   Semester – V

APPLICABLE MATHEMATICS

8.1   Course Overview

1	Course	Open Course
2	Course Type	Theory
3	Course Code	MM5GET02
4	Credit	3
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	72
9	Hours per Week	4
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	10 ($2 \times 5 = 10$)

8.2 Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Introduction to Numbers	Chalk and talk	18	5
2	Trigonometry	Chalk and talk, ICT	18	5
3	Simple Interest and Compound Interest	Chalk and talk, ICT	18	5
4	Introduction to Calculus	Chalk and talk, ICT	18	5

8.3 Continuous Evaluation Schedule

8.3.1 Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	80	3 Hours	Model Examination

8.3.2 Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

8.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – IX   Semester – V

HUMAN RIGHTS AND MATHEMATICS FOR ENVIORNMENTAL STUDIES

9.1 Course Overview

1	Course	Environmental Maths
2	Course Type	Theory
3	Course Code	MM5CRT08
4	Credit	3
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	72
9	Hours per Week	4
10	Number of Modules	5
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	10 ($2 \times 5 = 10$)

9.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Multidisciplinary nature of environmental studies	Chalk and talk, ICT	18	5
2	Biodiversity and its conservation	Chalk and talk, ICT	26	7
3	Fibonacci Numbers in nature	Chalk and talk, ICT	10	3
4	Golden Ratio	Chalk and talk, ICT	10	3
5	Human rights	Null	8	2

9.3   Continuous Evaluation Schedule

9.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	80	3 Hours	Model Examination

9.3.2 Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

9.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – X   Semester – VI

REAL ANALYSIS

10.1   Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	MM6CRT09
4	Credit	3
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	10 ($2 \times 5 = 10$)

10.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Continuous Functions	Chalk and talk	30	6
2	Differentiation	Chalk and talk	24	5
3	The Reimann Integral	Chalk and talk	24	5
4	Sequences and Series of Functions	Chalk and talk	24	5

10.3   Continuous Evaluation Schedule

10.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	80	3 Hours	Model Examination

10.3.2   Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

10.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – XI   Semester – VI

GRAPH THEORY AND METRIC SPACES

11.1   Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	MM6CRT10
4	Credit	3
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	108
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	25
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	10 ($2 \times 5 = 10$)

11.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Graph Theory	Chalk and talk,ICT	36	8
2	Graph Theory	Chalk and talk, ICT	30	6
3	Metric Spaces	Chalk and talk, ICT	24	5
4	Metric Spaces	Chalk and talk	18	4

11.3   Continuous Evaluation Schedule

11.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	8	20	1 Hours	Assessment Test
2	16	20	1 Hours	Assessment Test
3	25	80	3 Hours	Model Examination

11.3.2   Assignments

No.	Week	Duration	Assignments type
1	8	1 Week	Problem solving
2	16	1 Week	Problem solving
3	25	1 Week	Problem solving

11.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	8	3	20 Minute	Lecture
2	16	3	20 Minute	Lecture
3	25	3	20 Minute	Lecture

Course – XII   Semester – VI

COMPLEX ANALYSIS

12.1   Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	MM6CRT11
4	Credit	3
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	10 ($2 \times 5 = 10$)

12.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Analytic functions	Chalk and talk	32	7
2	Integrals	Chalk and talk	25	5
3	Series	Chalk and talk	15	3
4	Residues and poles	Chalk and talk	18	4

12.3   Continuous Evaluation Schedule

12.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	80	3 Hours	Model Examination

12.3.2   Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

12.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – XIII   Semester – VI

LINEAR ALGEBRA

13.1   Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	MM6CRT12
4	Credit	3
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	$10 \ (2 \times 5 = 10)$

13.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Introduction to Matrices	Chalk and talk	25	5
2	Vector Spaces	Chalk and talk	25	5
3	Null	Chalk and talk	20	4
4	Null	Chalk and talk	20	4

13.3   Continuous Evaluation Schedule

13.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	80	3 Hours	Model Examination

13.3.2   Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

13.3.3   Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – XIV   Semester – VI

BASIC PYTHON PROGRAMMING AND TYPESETTING IN LATEX

14.1   Course Overview

1	Course	Choice Based Course
2	Course Type	Theory
3	Course Code	MM6CBT02
4	Credit	3
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	72
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	18
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	$10 \ (2 \times 5 = 10)$

14.2 Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Beginning Python Programming	Chalk and talk	16	4
2	Advanced features	Chalk and talk	20	4
3	Beginning typesetting with using LaTeX	Chalk and talk	16	4
4	Typesetting Mathematics	Chalk and talk	20	4

14.3 Continuous Evaluation Schedule

14.3.1 Test paper

No.	Week	Total marks	Time duration	Exam type
1	6	20	1 Hours	Assessment Test
2	12	20	1 Hours	Assessment Test
3	18	80	3 Hours	Model Examination

14.3.2 Assignments

No.	Week	Duration	Assignments type
1	6	1 Week	Problem solving
2	12	1 Week	Problem solving
3	18	1 Week	Problem solving

14.3.3   Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	6	3	20 Minute	Lecture
2	12	3	20 Minute	Lecture
3	18	3	20 Minute	Lecture

Course – I   Semester – I

LINEARPROGRAMMING

15.1   Course Overview

1	Course	Complementary
2	Course Type	Theory
3	Course Code	MM1CCT01
4	Credit	3
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	54
9	Hours per Week	3
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	10 ($2 \times 5 = 10$)

15.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	MathematicalPreliminaries	Chalk and talk	15	5
2	General Problem of Mathematical Programming	Chalk and talk	12	4
3	Linear programming	Chalk and talk	10	4
4	Linear programming(Cont.)	Chalk and talk	17	6

15.3   Continuous Evaluation Schedule

15.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	80	3 Hours	Model Examination

15.3.2   Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

15.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – II   Semester – II

DUALITY,TRANSPORTATION AND ASSIGN-MENT PROBLEM

16.1   Course Overview

1	Course	Complementary
2	Course Type	Theory
3	Course Code	MM2CCT02
4	Credit	3
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	54
9	Hours per Week	3
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	10 ($2 \times 5 = 10$)

16.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	LinearProgramming	Chalk and talk	15	5
2	TransportationProblems	Chalk and talk	10	4
3	LoopingTransportation	Chalk and talk	15	5
4	Assignment Problems	Chalk and talk	14	5

16.3   Continuous Evaluation Schedule

16.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	80	3 Hours	Model Examination

16.3.2   Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

16.3.3   Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – III   Semester – III

QUEUEINGTHEORY

17.1   Course Overview

1	Course	Complementary
2	Course Type	Theory
3	Course Code	MM3CCT03
4	Credit	3
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	54
9	Hours per Week	3
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	10 ($2 \times 5 = 10$)

17.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Theory of Games	Chalk and talk	16	6
2	Projec tManagement PERT and CPM	Chalk and talk	10	4
3	Project ManagementPERT and CPM(Cont.)	Chalk and talk	14	5
4	Queuing Theory	Chalk and talk	14	5

17.3   Continuous Evaluation Schedule

17.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	80	3 Hours	Model Examination

17.3.2   Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

17.3.3   Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – IV   Semester – IV

NONLINEARPROGRAMMING

18.1   Course Overview

1	Course	Complementary
2	Course Type	Theory
3	Course Code	MM4CCT04
4	Credit	3
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	54
9	Hours per Week	3
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	10 ($2 \times 5 = 10$)

18.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	IntegerProgramming	Chalk and talk	13	5
2	Branch and Bound Method	Chalk and talk	14	5
3	Kuhn-TuckerTheory and Non Linear Programming	Chalk and talk	15	5
4	Kuhn-TuckerTheoryandNonLinearProgramming(Cont.)	Chalk and talk	12	4

18.3   Continuous Evaluation Schedule

18.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	80	3 Hours	Model Examination

18.3.2   Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

18.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – I   Semester – I

PARTIALDIFFERENTIATION,MATRICES,T AND NUMERICALMETHODS

19.1   Course Overview

1	Course	Complementary
2	Course Type	Theory
3	Course Code	MM1CMT01
4	Credit	3
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	72
9	Hours per Week	4
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	10 ($2 \times 5 = 10$)

19.2 Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	PartialDifferentiation	Chalk and talk	14	4
2	Matrices	Chalk and talk	21	6
3	Trigonometry	Chalk and talk	23	6
4	NumericalMethods	Chalk and talk	14	4

19.3 Continuous Evaluation Schedule

19.3.1 Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	80	3 Hours	Model Examination

19.3.2 Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

19.3.3   Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – II   Semester – II

INTEGRAL CALCULUS AND DIFFERENTIAL EQUATIONS

20.1   Course Overview

1	Course	Complementary
2	Course Type	Theory
3	Course Code	MM2CMT02
4	Credit	3
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	72
9	Hours per Week	4
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	10 ($2 \times 5 = 10$)

20.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Integral Calculus	Chalk and talk	15	4
2	Multiple Integrals	Chalk and talk	17	5
3	Ordinary Differential Equations	Chalk and talk	20	5
4	Partial Differential Equations	Chalk and talk	20	5

20.3   Continuous Evaluation Schedule

20.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	80	3 Hours	Model Examination

20.3.2   Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

20.3.3   Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – III   Semester – III

VECTOR CALCULUS, ANALYTIC GEOMETRY AND ABSTRACT ALGEBRA

21.1   Course Overview

1	Course	Complementary
2	Course Type	Theory
3	Course Code	MM3CMT03
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	$10\ (2 \times 5 = 10)$

21.2 Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Vector valued Functions	Chalk and talk	15	3
2	Integration in Vector Fields	Chalk and talk	25	5
3	Analytic Geometry	Chalk and talk	25	5
4	Abstract algebra	Chalk and talk	25	5

21.3 Continuous Evaluation Schedule

21.3.1 Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	80	3 Hours	Model Examination

21.3.2 Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

21.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – IV   Semester – IV

FOURIER SERIES, LAPLACE TRANSFORM AND COMPLEX ANALYSIS

22.1   Course Overview

1	Course	Complementary
2	Course Type	Theory
3	Course Code	MM4CMT04
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	10 ($2 \times 5 = 10$)

22.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Fourier Series and Legendre Polynomials	Chalk and talk	25	5
2	Laplace Transforms	Chalk and talk	20	4
3	Complex Numbers and Functions	Chalk and talk	25	5
4	Complex Integration	Chalk and talk	20	4

22.3   Continuous Evaluation Schedule

22.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	80	3 Hours	Model Examination

22.3.2   Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

22.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – I   Semester – I

PARTIALDIFFERENTIATION,MATRICES,T

AND NUMERICALMETHODS

23.1   Course Overview

1	Course	Complementary
2	Course Type	Theory
3	Course Code	MM1CMT01
4	Credit	3
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	$10\ (2 \times 5 = 10)$

23.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	PartialDifferentiation	Chalk and talk	23	5
2	Matrices	Chalk and talk	21	5
3	Trigonometry	Chalk and talk	23	5
4	NumericalMethods	Chalk and talk	23	5

23.3   Continuous Evaluation Schedule

23.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	80	3 Hours	Model Examination

23.3.2   Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

23.3.3   Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – II   Semester – II

INTEGRAL CALCULUS AND DIFFEREN-TIAL EQUATIONS

24.1   Course Overview

1	Course	Complementary
2	Course Type	Theory
3	Course Code	MM2CMT02
4	Credit	3
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	10 ($2 \times 5 = 10$)

24.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Integral Calculus	Chalk and talk	18	4
2	Multiple Integrals	Chalk and talk	20	4
3	Ordinary Differential Equations	Chalk and talk	26	6
4	Partial Differential Equations	Chalk and talk	26	6

24.3   Continuous Evaluation Schedule

24.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	80	3 Hours	Model Examination

24.3.2   Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

24.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – III   Semester – III

VECTOR CALCULUS, ANALYTIC GEOMETRY AND ABSTRACT ALGEBRA

25.1   Course Overview

1	Course	Complementary
2	Course Type	Theory
3	Course Code	MM3CMT03
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	10 ($2 \times 5 = 10$)

25.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Vector valued Functions	Chalk and talk	15	3
2	Integration in Vector Fields	Chalk and talk	25	5
3	Analytic Geometry	Chalk and talk	25	5
4	Abstract algebra	Chalk and talk	25	5

25.3   Continuous Evaluation Schedule

25.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	80	3 Hours	Model Examination

25.3.2   Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

25.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – IV   Semester – IV

FOURIER SERIES, LAPLACE TRANSFORM AND COMPLEX ANALYSIS

26.1   Course Overview

1	Course	Complementary
2	Course Type	Theory
3	Course Code	MM4CMT04
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	10 ($2 \times 5 = 10$)

26.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Fourier Series and Legendre Polynomials	Chalk and talk	25	5
2	Laplace Transforms	Chalk and talk	20	4
3	Complex Numbers and Functions	Chalk and talk	25	5
4	Complex Integration	Chalk and talk	20	4

26.3   Continuous Evaluation Schedule

26.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	80	3 Hours	Model Examination

26.3.2   Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

26.3.3   Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – I   Semester – I

PARTIALDIFFERENTIATION,MATRICES,T

AND NUMERICALMETHODS

27.1   Course Overview

1	Course	Complementary
2	Course Type	Theory
3	Course Code	MM1CMT01
4	Credit	3
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	10 ($2 \times 5 = 10$)

27.2 Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	PartialDifferentiation	Chalk and talk	23	5
2	Matrices	Chalk and talk	21	5
3	Trigonometry	Chalk and talk	23	5
4	NumericalMethods	Chalk and talk	23	5

27.3 Continuous Evaluation Schedule

27.3.1 Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	80	3 Hours	Model Examination

27.3.2 Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

27.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – II   Semester – II

INTEGRAL CALCULUS AND DIFFEREN-TIAL EQUATIONS

28.1   Course Overview

1	Course	Complementary
2	Course Type	Theory
3	Course Code	MM2CMT02
4	Credit	3
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	10 ($2 \times 5 = 10$)

28.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Integral Calculus	Chalk and talk	18	4
2	Multiple Integrals	Chalk and talk	20	4
3	Ordinary Differential Equations	Chalk and talk	26	6
4	Partial Differential Equations	Chalk and talk	26	6

28.3   Continuous Evaluation Schedule

28.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	80	3 Hours	Model Examination

28.3.2   Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

28.3.3   Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – III   Semester – III

VECTOR CALCULUS, ANALYTIC GEOMETRY AND ABSTRACT ALGEBRA

29.1   Course Overview

1	Course	Complementary
2	Course Type	Theory
3	Course Code	MM3CMT03
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	$10\ (2 \times 5 = 10)$

29.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Vector valued Functions	Chalk and talk	15	3
2	Integration in Vector Fields	Chalk and talk	25	5
3	Analytic Geometry	Chalk and talk	25	5
4	Abstract algebra	Chalk and talk	25	5

29.3   Continuous Evaluation Schedule

29.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	80	3 Hours	Model Examination

29.3.2   Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

29.3.3   Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – IV   Semester – IV

FOURIER SERIES, LAPLACE TRANSFORM AND COMPLEX ANALYSIS

30.1   Course Overview

1	Course	Complementary
2	Course Type	Theory
3	Course Code	MM4CMT04
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	5
13	Assignment/Seminar	5
14	Assessment Test	10 ($2 \times 5 = 10$)

30.2 Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Fourier Series and Legendre Polynomials	Chalk and talk	25	5
2	Laplace Transforms	Chalk and talk	20	4
3	Complex Numbers and Functions	Chalk and talk	25	5
4	Complex Integration	Chalk and talk	20	4

30.3 Continuous Evaluation Schedule

30.3.1 Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	80	3 Hours	Model Examination

30.3.2 Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

30.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – I   Semester – I

Abstract Algebra

31.1   Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	ME010101
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	150
7	Internal Assessment	25
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	0
13	Assignment/Seminar	0
14	Assessment Test	$0 \ (0 \times 0 = 0)$

31.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Groups	Chalk and talk	25	5
2	Sylow Theorems	Chalk and talk	25	5
3	Ring Of Polynomials	Chalk and talk	20	4
4	Factor Rings	Chalk and talk	20	4

31.3   Continuous Evaluation Schedule

31.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	150	3 Hours	Model Examination

31.3.2   Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

31.3.3   Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – II   Semester – I

Linear Algebra

32.1 Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	ME010102
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	150
7	Internal Assessment	25
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	0
13	Assignment/Seminar	0
14	Assessment Test	$0\ (0 \times 0 = 0)$

32.2 Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Vector Space	Chalk and talk	20	4
2	Linear Transformatios	Chalk and talk	25	5
3	Determinants	Chalk and talk	20	4
4	Diagonalization	Chalk and talk	25	5

32.3 Continuous Evaluation Schedule

32.3.1 Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	150	3 Hours	Model Examination

32.3.2 Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

32.3.3   Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – III   Semester – I

Basic Topology

33.1   Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	ME010103
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	150
7	Internal Assessment	25
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	0
13	Assignment/Seminar	0
14	Assessment Test	$0 \, (0 \times 0 = 0)$

33.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Topological Spaces	Chalk and talk	25	5
2	Basic Concepts	Chalk and talk	25	5
3	Spaces With Special Properties	Chalk and talk	20	4
4	Spaces With Special Properties	Chalk and talk	20	4

33.3   Continuous Evaluation Schedule

33.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	150	3 Hours	Model Examination

33.3.2   Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

33.3.3   Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – IV   Semester – I

Real Analysis

34.1   Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	ME010104
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	150
7	Internal Assessment	25
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	0
13	Assignment/Seminar	0
14	Assessment Test	$0\ (0 \times 0 = 0)$

34.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Functions of Boundede Variation And Rectifiable Curves	Chalk and talk	20	4
2	The Riemann Stieltjes Integral	Chalk and talk	20	4
3	Sequence And Series Of Functions	Chalk and talk	25	5
4	Weierstrass Aproximation And Some Special Functios	Chalk and talk	25	5

34.3   Continuous Evaluation Schedule

34.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	150	3 Hours	Model Examination

34.3.2 Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

34.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – V   Semester – I

Graph Theory

35.1   Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	ME010105
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	150
7	Internal Assessment	25
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	0
13	Assignment/Seminar	0
14	Assessment Test	$0 \ (0 \times 0 = 0)$

35.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Graph Basic Concepts	Chalk and talk	20	4
2	Connectivity	Chalk and talk	25	5
3	Eulerian And Hamiltionian Graphs	Chalk and talk	20	4
4	Planarity	Chalk and talk	25	5

35.3   Continuous Evaluation Schedule

35.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	150	3 Hours	Model Examination

35.3.2   Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

35.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – VI   Semester – II

Advanced Abstract Algebra

36.1   Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	ME010201
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	150
7	Internal Assessment	25
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	0
13	Assignment/Seminar	0
14	Assessment Test	$0 \ (0 \times 0 = 0)$

36.2 Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Extention Field	Chalk and talk	20	4
2	UFD	Chalk and talk	20	4
3	Automorphism Of Fields	Chalk and talk	25	5
4	Separable Extentions	Chalk and talk	25	5

36.3 Continuous Evaluation Schedule

36.3.1 Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	150	3 Hours	Model Examination

36.3.2 Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

36.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – VII   Semester – II

Advanced Topology

37.1   Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	ME010202
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	150
7	Internal Assessment	25
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	0
13	Assignment/Seminar	0
14	Assessment Test	$0 \ (0 \times 0 = 0)$

37.2 Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Seperation Axioms	Chalk and talk	20	4
2	Product And Coproduct	Chalk and talk	25	5
3	Embedding And Metrisation	Chalk and talk	25	5
4	Definition and Convergence of Nets	Chalk and talk	20	4

37.3 Continuous Evaluation Schedule

37.3.1 Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	150	3 Hours	Model Examination

37.3.2 Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

37.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – VIII   Semester – II

Numerical Analysis with Python

38.1   Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	ME010203
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	150
7	Internal Assessment	25
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	0
13	Assignment/Seminar	0
14	Assessment Test	$0\ (0 \times 0 = 0)$

38.2 Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Basics of Python	Chalk and talk, ICT	20	4
2	Limit of Functions	Chalk and talk,ICT	25	5
3	Interpolation And Curve Fitting	Chalk and talk,ICT	25	5
4	Gauss Elimination Method	Chalk and talk,ICT	20	4

38.3 Continuous Evaluation Schedule

38.3.1 Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	150	3 Hours	Model Examination

38.3.2 Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

38.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – IX   Semester – II

Complex Analysis

39.1 Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	ME010204
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	150
7	Internal Assessment	25
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	0
13	Assignment/Seminar	0
14	Assessment Test	$0\ (0 \times 0 = 0)$

39.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Spherica Representation Of Complex Numbers	Chalk and talk	25	5
2	Fundamental Theorems on Complex Integration	Chalk and talk	20	4
3	Higher Derivatives	Chalk and talk	20	4
4	The General Form Of Cauchy's Theorem	Chalk and talk	25	5

39.3   Continuous Evaluation Schedule

39.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	150	3 Hours	Model Examination

39.3.2   Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

39.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – X   Semester – II

Measure And Integration

40.1   Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	ME010205
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	150
7	Internal Assessment	25
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	0
13	Assignment/Seminar	0
14	Assessment Test	$0 \ (0 \times 0 = 0)$

40.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Lebsgue Measure	Chalk and talk	25	5
2	Lebesugue Integration	Chalk and talk	25	5
3	General Meeasure Space And Measurable Functios	Chalk and talk	20	4
4	Integration Over Genral Measure Space And Product Measures	Chalk and talk	20	4

40.3   Continuous Evaluation Schedule

40.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	150	3 Hours	Model Examination

40.3.2   Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

40.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – XI   Semester – III

Advanced Complex Analysis

41.1   Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	ME010301
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	150
7	Internal Assessment	25
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	0
13	Assignment/Seminar	0
14	Assessment Test	$0 \, (0 \times 0 = 0)$

41.2 Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Harmonic Function	Chalk and talk	20	4
2	Power Series Expansions	Chalk and talk	25	5
3	Riemann Zeta Function	Chalk and talk	25	5
4	The Riemann Mapping Theorem	Chalk and talk	20	4

41.3 Continuous Evaluation Schedule

41.3.1 Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	150	3 Hours	Model Examination

41.3.2 Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

41.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – XII   Semester – III

Partial Differential Equations

42.1   Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	ME010302
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	150
7	Internal Assessment	25
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	0
13	Assignment/Seminar	0
14	Assessment Test	$0 \ (0 \times 0 = 0)$

42.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Solutions Of Pde	Chalk and talk	20	4
2	Linear Equation Of First Order	Chalk and talk	25	5
3	Jacobi's Method	Chalk and talk	20	4
4	Separation Of Varibles	Chalk and talk	25	5

42.3   Continuous Evaluation Schedule

42.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	150	3 Hours	Model Examination

42.3.2   Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

42.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – XIII   Semester – III

Multivariate Calculus And Integral Transform

43.1   Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	ME010303
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	150
7	Internal Assessment	25
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	0
13	Assignment/Seminar	0
14	Assessment Test	$0 \ (0 \times 0 = 0)$

43.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Weirstrass Theorem	Chalk and talk	20	4
2	Multivariable Differential Calculus	Chalk and talk	22	5
3	Mixed Partial Derivatives	Chalk and talk	28	6
4	Intgration Of Differential Forms	Chalk and talk	20	4

43.3   Continuous Evaluation Schedule

43.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	150	3 Hours	Model Examination

43.3.2   Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

43.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – XIV   Semester – III

Functional Analysis

44.1   Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	ME010304
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	150
7	Internal Assessment	25
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	0
13	Assignment/Seminar	0
14	Assessment Test	$0 \ (0 \times 0 = 0)$

44.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Completion Theorem	Chalk and talk	20	4
2	Linear Oeerators	Chalk and talk	25	5
3	Inner Product Spaces	Chalk and talk	25	5
4	Hilbert Space	Chalk and talk	20	4

44.3   Continuous Evaluation Schedule

44.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	150	3 Hours	Model Examination

44.3.2   Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

44.3.3   Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – XV   Semester – III

Optmization Technique

45.1   Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	ME010305
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	150
7	Internal Assessment	25
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	0
13	Assignment/Seminar	0
14	Assessment Test	$0 \ (0 \times 0 = 0)$

45.2 Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Linear Programming	Chalk and talk	25	5
2	Integer Programing	Chalk and talk	25	5
3	Goal Programming And Flow and Potential in Networks	Chalk and talk	15	3
4	Non-Linear Programing	Chalk and talk	25	5

45.3 Continuous Evaluation Schedule

45.3.1 Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	150	3 Hours	Model Examination

45.3.2 Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

45.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – XVI   Semester – IV

Spectral Theory

46.1   Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	ME010401
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	150
7	Internal Assessment	25
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	0
13	Assignment/Seminar	0
14	Assessment Test	$0 \ (0 \times 0 = 0)$

46.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Convergence Of Sequence Of Operators And Functionals	Chalk and talk	20	4
2	Banach Fixed Point Theorem	Chalk and talk	25	5
3	Banach algebra	Chalk and talk	25	5
4	Spectral Properties Of Self Adjoint Linear Operator	Chalk and talk	20	4

46.3   Continuous Evaluation Schedule

46.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	150	3 Hours	Model Examination

46.3.2 Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

46.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – XVII   Semester – IV

Analytic Number Theory

47.1   Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	ME010402
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	150
7	Internal Assessment	25
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	0
13	Assignment/Seminar	0
14	Assessment Test	$0 \ (0 \times 0 = 0)$

47.2 Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Arithemetic Functions	Chalk and talk	30	6
2	Some Elementry Theorems On The Distribution Of Prime Numbers	Chalk and talk	15	3
3	Congruances	Chalk and talk	25	5
4	Quadratic Residues	Chalk and talk	20	4

47.3 Continuous Evaluation Schedule

47.3.1 Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	150	3 Hours	Model Examination

47.3.2 Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

47.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – XVIII   Semester – IV

Differential Geometry

48.1   Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	ME800401
4	Credit	3
5	Duration of External Examination	3 hours
6	External Assessment	150
7	Internal Assessment	25
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	0
13	Assignment/Seminar	0
14	Assessment Test	$0 \ (0 \times 0 = 0)$

48.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Graph And Level Set	Chalk and talk	20	4
2	Gauss Map	Chalk and talk	20	4
3	Weingartn Map	Chalk and talk	25	5
4	Curvature Of Surfaces	Chalk and talk	25	5

48.3   Continuous Evaluation Schedule

48.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	150	3 Hours	Model Examination

48.3.2   Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

48.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – XIX   Semester – IV

Algorthmic Graph Theory

49.1 Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	ME800402
4	Credit	3
5	Duration of External Examination	3 hours
6	External Assessment	150
7	Internal Assessment	25
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	0
13	Assignment/Seminar	0
14	Assessment Test	$0 \ (0 \times 0 = 0)$

49.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Introduction to Graph And Algorithms	Chalk and talk	24	5
2	Trees And Distances	Chalk and talk	22	5
3	Networks	Chalk and talk	22	5
4	Matchings And Factorization	Chalk and talk	22	5

49.3   Continuous Evaluation Schedule

49.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	150	3 Hours	Model Examination

49.3.2   Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

49.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture

Course – XX   Semester – IV

Combinatorics

50.1   Course Overview

1	Course	Core
2	Course Type	Theory
3	Course Code	ME800403
4	Credit	3
5	Duration of External Examination	3 hours
6	External Assessment	150
7	Internal Assessment	25
8	Total hours	90
9	Hours per Week	5
10	Number of Modules	4
11	Total Week to complete	21
Distribution of Internal Marks		
12	Attendance	0
13	Assignment/Seminar	0
14	Assessment Test	$0 \ (0 \times 0 = 0)$

50.2   Implementation Schedule

Module	Module Title	Delivery Methods	Total hours	Number of Weeks to complete
1	Permutations And Combinations	Chalk and talk	22	5
2	Pigeonhole Principle And Ramsey Number	Chalk and talk	18	4
3	The Principle of Inclution And Exclution	Chalk and talk	25	5
4	Generation Functions and Recurrence Relations	Chalk and talk	25	5

50.3   Continuous Evaluation Schedule

50.3.1   Test paper

No.	Week	Total marks	Time duration	Exam type
1	7	20	1 Hours	Assessment Test
2	14	20	1 Hours	Assessment Test
3	21	150	3 Hours	Model Examination

50.3.2 Assignments

No.	Week	Duration	Assignments type
1	7	1 Week	Problem solving
2	14	1 Week	Problem solving
3	21	1 Week	Problem solving

50.3.3 Seminar

No.	Week	Number of seminars	Time duration	Delivery method
1	7	3	20 Minute	Lecture
2	14	3	20 Minute	Lecture
3	21	3	20 Minute	Lecture