# RANI CHANNAMMA UNIVERSITY, BELAGAVI

## Department of Mathematics

# Syllabus

## for

## Master of Science in Mathematics

### I to II Semester

### (with effect from 2017 – 18)

## Choice based credit system (CBCS)

### Course structure

| Sl. No. | Paper & Title | Credit | No of Hrs/week Theory/ Practical | Duration of exam in Hrs Theory/ Practical | IA Marks Theory/ Practical | Marks at the Exams | Total Marks |
|---|---|---|---|---|---|---|---|
| **I Semester** | | | | | | | |
| 1.1 | Algebra -I | 4 | 4 | 3 Hrs | 20 | 80 | 100 |
| 1.2 | Topology | 4 | 4 | 3 Hrs | 20 | 80 | 100 |
| 1.3 | Real Analysis | 4 | 4 | 3 Hrs | 20 | 80 | 100 |
| 1.4 | Linear Algebra | 4 | 4 | 3 Hrs | 20 | 80 | 100 |
| 1.5 | Ordinary Differential Equations | 4 | 4 | 3 Hrs | 20 | 80 | 100 |
| 1.6 | Discrete Mathematical Structures | 4 | 4 | 3 Hrs | 20 | 80 | 100 |
| **II Semester** | | | | | | | |
| 2.1 | Algebra – II | 4 | 4 | 3 Hrs | 20 | 80 | 100 |
| 2.2 | Complex Analysis | 4 | 4 | 3 Hrs | 20 | 80 | 100 |
| 2.3 | Partial Differential Equations | 4 | 4 | 3 Hrs | 20 | 80 | 100 |
| 2.4 | Functions of Several Variables | 4 | 4 | 3 Hrs | 20 | 80 | 100 |
| 2.5 | Classical Mechanics | 4 | 4 | 3 Hrs | 20 | 80 | 100 |
| 2.6 | **Open Elective Course** I. Set Theory (Arts & Commerce stream) II. Integral Transforms (Science stream) | 4 | 4 | 3 Hrs | 20 | 80 | 100 |

## III Semester

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3.1 | Measure Theory & Lebesgue Integration | 4 | 4 | 3 Hrs | 20 | 80 | 100 |
| 3.2 | Differential Geometry | 4 | 4 | 3 Hrs | 20 | 80 | 100 |
| 3.3 | Numerical Analysis | 4 | 4 | 3 Hrs | 20 | 80 | 100 |
| 3.4 | Elective- I<br><br>I. Mathematical Finance<br>II. Fluid Mechanics<br>III. Commutative Algebra<br>IV. Coding Theory | 4 | 4 | 3 Hrs | 20 | 80 | 100 |
| 3.5 | Elective- II<br><br>I. Algebraic Topology<br>II. Number Theory and Cryptology<br>III. Fourier Analysis<br>IV. Fuzzy Sets and Fuzzy Systems | 4 | 4 | 3 Hrs | 20 | 80 | 100 |
| 3.6 | Open Elective Course<br>I. Statistics (Arts & Commerce stream)<br>II. Computational Methods (Science stream) | 4 | 4 | 3 Hrs | 20 | 80 | 100 |

## IV Semester

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 4.1 | Functional Analysis | 4 | 4 | 3 Hrs | 20 | 80 | 100 |
| 4.2 | Mathematical Methods | 4 | 4 | 3 Hrs | 20 | 80 | 100 |
| 4.3 | Probability Theory | 4 | 4 | 3 Hrs | 20 | 80 | 100 |
| 4.4 | Elective-I<br>I. Riemannian Geometry<br>II. Advance Graph Theory<br>III. Mathematical modeling<br>IV. Galois Theory | 4 | 4 | 3 Hrs | 20 | 80 | 100 |
| 4.5 | Elective-II<br>I. Advanced Numerical Methods<br>II. Banach Algebra<br>III. Operations Research<br>IV. Computation Complexity | 4 | 4 | 3 Hrs | 20 | 80 | 100 |
| 4.6 | Project | 4 | The candidate shall submit a dissertation carrying 80 marks and appear for viva-voce carrying 20 marks | | | | 100 |
| | Total | 96 | | | | | 2400 |

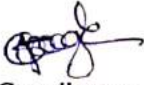## 4.6 PROJECT

The candidate shall submit a dissertation carrying 80 marks and appear for viva-voce carrying 20 marks.

# K. L. E Society's
# G.I. Bagewadi Arts, Science & Commerce College, Nipani
## Department of Mathematics
## Project List for M.Sc. IV Sem. 2020-21

| S. No. | Roll. No. | Register No. | Name of the Student | Project Topic | Guide |
|--------|-----------|--------------|---------------------|---------------|-------|
| 1 | 08 | MT191209 | Jyoti Bharat Sutar | Network topology and applications | Sri. S. A. Chougale |
| 2 | 11 | MT191212 | Neeta M.Bhate | | |
| 3 | 03 | MT191204 | Anita R. Hamidwade | Applications of Discrete Mathematics | Sri. S. A. Chougale |
| 4 | 16 | MT191217 | Snehal M. Jadhav | | |
| 5 | 04 | MT191205 | Anuja G.Patil | | |
| 6 | 17 | MT191218 | Sushmita S.Pattankude | Conformal Mapping and its applications | Miss N. S. Jadhav |
| 7 | 13 | MT191214 | Prajakta L.Bhore | | |
| 8 | 12 | MT191213 | Prachi S.Mayanna | | |
| 9 | 07 | MT191208 | Jyoti A.Patil | Mathematical methods and its applications | Miss N. S. Jadhav |
| 10 | 02 | MT191202 | Akshata G.Majalatti | | |
| 11 | 06 | MT191207 | Arati S.Patil | | |
| 12 | 01 | MT191201 | Aishwarya Zele | Number theory and its applications | Miss V. U. Khot |
| 13 | 15 | MT191216 | Shweta Patil | | |
| 14 | 14 | MT191215 | Sangeeta More | | |
| 15 | 09 | MT191210 | Lata R.Bharmal | Matrix representation of graphs | Sri. S. A. Chougale |
| 16 | 05 | MT191206 | Anuradha V. Hindalkar | | |
| 17 | 10 | MT191211 | Namarata A.Patil | | |
| 18 | 18 | MT191219 | Trupti Magadum | Applications of Fourier Series and Fourier Transforms | Sri. J. N. Magadum |
| 19 | 19 | MT191220 | Varsha Patil | | |
| 20 | 20 | MT191221 | Vijaylaxmi Kakoli | | |

Coordinator
**Co-ordinator**
P. G. [M.Sc., Maths]
K.L.E's G. I. B. College, Nipani,

NIPANI

Principal
**PRINCIPAL**
K. L. E. Society's
G. I. Bagewadi College, Nipani.

# RANI CHANNAMMA UNIVERSITY

## BELAGAVI-590 014

## A PROJECT REPORT ON

## "NETWORK TOPOLOGY AND APPLICATIONS"

### SUBMITTED BY

**MISS JYOTI BHARAT SUTAR**
Reg. No: MT191209

**MISS NEETA M BHATE**
Reg. No: MT191212

### IN PARTIAL FULFILMENT OF

### MASTERS OF SCIENCE (M.Sc. Mathematics)

### Academic Year 2020-21

*Under Guidance of*

**DR.(SMT.) M. M. SHANKRIKOPP** M.Sc., Ph.D.

**SRI. SAMMED A. CHOUGALE** M. Sc., B. Ed.

### SUBMITTED TO

**COURSE CODE – D120**

## DEPARTMENT OF MATHEMATICS

## KLE'S G I BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE,

## NIPANI-591237

## _Certificate_

This is to Certify that project carried out by **MISS JYOTI BHARAT SUTAR** Reg No: MT191209, **MISS NEETA M. BHATE** Reg No: MT191212, bonafide students of G. I. Bagewadi College, PG center Nipani, in partial fulfillment for the award of **Master of Science** in **Mathematics** of the Rani Channamma University Belagavi during the year 2020-21. It is certified that all correction or suggestions indicated for internal assessment have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.

Sri. S. A. Chougale
**Guide and Coordinator**

Dr.(Smt.) M. M. Shankfikopp
**HOD, Mathematics**

Dr. M. M. Hurali
**Principal**

**Examiner Name and Sign**

1.

2.
7/10/21

**A PROJECT REPORT ON**
**"APPLICATIONS OF DISCRETE MATHEMATICS"**

**SUBMITTED BY**

**MISS SNEHAL M. JADHAV**           **MISS ANUJA G. PATIL**
Reg.No: MT191217                         Reg.No: MT191205

**MISS ANITA R. HAMIDWADE**
Reg.No: MT191204

**IN PARTIAL FULFILMENT OF**

**MASTERS OF SCIENCE (M.Sc. Mathematics)**

**Academic Year 2020 - 21**

*Under Guidance of*

**DR. (SMT). M. M. SHANKRIKOPP**
M. Sc., PhD

**SRI. S. A. CHOUGALE**
M. Sc., B.Ed

**SUBMITED TO**

COURSE CODE - D120

**DEPARTMENT OF MATHEMATICS**

**KLE'S G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE,**

**NIPANI-591237.**

# K. L. E. Society's

# G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE,

# NIPANI-591237.

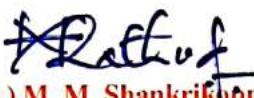'College with Potential for Excellence'

(ACCRIDITED AT 'A' LEVEL BY NAAC WITH CGPA 3.35)

## *Certificate*

This is to Certify that the project carried out by **MISS SNEHAL M. JADHAV** Reg No: MT191217, **MISS ANUJA G. PATIL** Reg No: MT191205 and **MISS ANITA R. HAMIDWADE** Reg No: MT191204, bonafide students of G. I. Bagewadi College, PG center Nipani, in partial fulfillment for the award of **Master of Science** in **Mathematics** of the Rani Channamma University, Belagavi during the year 2020-21. It is certified that all correction/suggestions indicated for internal assessment have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.

Sri. S. A. Chougale
**Guide and Coordinator**

Dr.(Smt.) M. M. Shankrikopp
**HOD, Mathematics**

Dr. M. M. Hurali
**Principal**

**Examiner Name and Sign**

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2. 7/10/21

# RANI CHANNAMMA UNIVERSITY
## BELAGAVI-590 014

## A PROJECT REPORT ON
## "CONFORMAL MAPPING AND ITS APPLICATION"

### SUBMITTED BY

**MISS.PRAJAKTA.L.BHORE.**
Reg.No:MT191214

**MISS.PRACHI.S.MAYANNA**
Reg.No:MT191213

**MISS.SUSHMITA.S.PATTANAKUDE**
Reg.No:MT191218

### IN PARTIAL FULFILMENT OF
### MASTERS OF SCIENCE (M.Sc. Mathematics)
### Academic Year 2020-21

### *Under Guidance of*

**DR. (SMT.) M. M. SHANKRIKOPP**
M.Sc., PhD

**MISS N. S. JADHAV**
M.Sc., B. Ed.

### SUBMITTED TO

COURSE CODE – D120
## DEPARTMENT OF MATHEMATICS

## K. L. E. Society's

## G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE

## COLLEGE NIPANI-591237.

## K. L. E. Society's

# G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE

# COLLEGE NIPANI-591237.

## (ACCRIGATED AT 'A' LEVEL BY NAAC WITH CGPA 3.35)



## _Certificate_

This is to Certify that project carried out by **MISS.PRAJAKTA.L.BHORE.**RegNo:MT191214and**MISS.PRACHI.S.MAYA NNA**RegNo:MT191213**MISS.SUSHMITA.S.PATTANAKUDE**RegNo:MT19121 8 bonafide students of G. I. Bagewadi College, PG center Nipani, in partial fulfillment for the award of **Master of Science** in **Mathematics** of the Rani Channamma University, Belagavi during the year 2020-21 It is certified that all correction/suggestions indicated for internal assessment have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.

**Miss Nikita S. Jadav**
Guide

**Sri. S. A. Chougale**
Coordinator

**Dr.(Smt.) M. M. Shankrikopp**
HOD, Mathematics

**Dr. M. M. Hurali**
Principal

**Examiner Name and Sign**

1.

2.         3/10/21

# A PROJECT REPORT ON
## "MATHEMATICAL METHODS AND ITS APPLICATIONS"

### SUBMITTED BY

NAME: ARATI S. PATIL      NAME: JYOTI A. PATIL
REG: MT191207            REG: MT191208

NAME: AKSHATA G. MAJALATTI
REG: MT191202

### IN PARTIAL FULFILMENT OF

### MASTERS OF SCIENCE (M.Sc. Mathematics)

### Academic Year 2020-21

### *Under Guidance of*

DR.(SMT.). M. M. SHANKRIKOPP
M.Sc., PhD

MISS NIKITA S. JADAV
M.Sc., B.Ed.

### SUBMITTED TO

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# COLLEGE NIPANI-591237.

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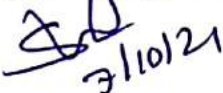
## *Certificate*

The project report has been approved as it satisfies the academic requirements in respect This is to Certify that project carried out by MISS ARATI S. PATIL Reg No: MT191207 and MISS JOYTI A. PATIL Reg No: MT191208     MISS AKSHATA G. MAJALATTI Reg No: MT191202 bonafide students of  G. I. Bagewadi College, PG center Nipani, in  partial fulfillment for the  award of  Master of Science in Mathematics of the Rani Channamma  University, Belagavi during the year 2020-21. It is certified that all correction/suggestions indicated for internal assessment have been incorporated in the reportof project work prescribed for the said degree.

**Miss Nikita S. Jadav**
**Guide**

**Dr.(Smt.) M. M. Shankrikopp**
**HOD, Mathematics**

Sri. S. A. Chougale
**Coordinator**

**Dr. M. M. Hurali**
**Principal**

**Examiner Name and Sign**

1.

2.            ೨/10/21

# RANI CHANNAMMA UNIVERSITY
## BELAGAVI-590 014

## A PROJECT REPORT ON
## "NUMBER THEORY AND IT'S APPLICATIONS"

### SUBMITTED BY

| | |
|---|---|
| **MISS AISHWARYA ZELE** | **MISS SHWETA PATIL** |
| Reg.No: MT191201 | Reg. No: MT191216 |

**MISS SANGEETA MORE**
Reg.No: MT191215

### IN PARTIAL FULFILMENT OF

### MASTERS OF SCIENCE (M.Sc. Mathematics)

### Academic Year 2020-21

### *Under Guidance of*

### DR. (SMT). M.  M. SHANKRIKOPP
M.Sc., Ph.D.

### MISS. V. U. KHOT
M. Sc.

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### DEPARTMENT OF MATHEMATICS

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## *Certificate*

This is to certify that project carried out by **MISS AISHWARYA ZELE** (Reg.No:MT191201), **MISS SHWETA PATIL** (RegNo:MT191216) and **MISS SANGEETA MORE** (Reg No: MT191215) bonafide students of KLE's G. I. Bagewadi College, PG center Nipani, in partial fulfillment for the award of **Master of Science** in **Mathematics** of the Rani Channamma University Belagavi during the year 2020-21. It is certified that all correction or suggestions indicated for internal assessment have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.

Miss V. U. KHOT
**Guide**

Sri. S. A.CHOUGALE
**Coordinator**

Dr.(Smt.) M.M. SHANKRIKOPP
**HOD, Mathematics**

Dr. M. M. HURALI
**Principal**

**Examiner Name and Sign**

1.

2.

# RANI CHANNAMMA UNIVERSITY
## BELAGAVI-590 014

**A PROJECT REPORT ON**
**"MATRIX REPRESENTATION OF GRAPHS"**

**SUBMITTED BY**

**MISS LATA R. BHARMAL**
Reg. No: MT191210

**MISS ANURADHA V. HINDALKAR**
Reg. No: MT191206

**MISS NAMRATA A. PATIL**
Reg. No: MT191211

**IN PARTIAL FULFILMENT OF**

**MASTERS OF SCIENCE (M.Sc. Mathematics)**

**Academic Year 2020-21**

*Under Guidance of*

**DR.(SMT.). M. M. SHANKRIKOPP**
M.Sc., PhD

**Shri. SAMMED A. CHOUGALE**
M.Sc., B.Ed.

**SUBMITTED TO**

COURSE CODE — D120
**DEPARTMENT OF MATHEMATICS**

**K. L. E. Society's**

**G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE**

**COLLEGE NIPANI-591237.**

# G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE

## COLLEGE NIPANI-591237.

### (ACCREDITED AT 'A' LEVEL BY NAAC WITH CGPA 3.35)

## *Certificate*

This is to certify that project carried out by MISS **LATA R. BHARMAL** Reg No: MT191210, **MISS ANURADHA V. HINDALKAR** Reg No: MT191206 and **MISS NAMRATA A.PATIL** Reg No:MT191211 bonafide students of G. I. Bagewadi College, PG center Nipani, in partial fulfillment for the award of **Master of Science** in **Mathematics** of the Rani Channamma University, Belagavi during the year 2020-21. It is certified that all correction/suggestions indicated for internal assessment have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.

**Shri. S. A. Chougale**
**Guide and Coordinator**

**Dr.(Smt.) M. M. Shankrikopp**
**HOD, Mathematics**

**Dr. M. M. Hurali**
**Principal**

**Examiner Name and Sign**

1.

2.

## RANI CHANNAMMA UNIVERSITY
## BELAGAVI-590 014



### A PROJECT REPORT ON

### "APPLICATIONS OF FOURIER SERIES AND FOURIER TRANSFORMATIONS"

### SUBMITTED BY

**MISS TRUPTI MAGADUM**
Reg. No: MT191219

**MISS VARSHA PATIL**
Reg. No: MT191220

**MISS VIJAYLAXMI KAKOLI**
Reg. No: MT191221

### IN PARTIAL FULFILMENT OF

### MASTERS OF SCIENCE (M.Sc. Mathematics)

**Academic Year 2020-21**

*Under Guidance of*

**DR.(SMT). M. M. SHANKRIKOPP**
M.Sc., PhD

**PROF. MR. JINENDRA N. MAGADUM**
M. Sc., B. Ed

### SUBMITED TO



COURSE CODE - D120
**DEPARTMENT OF MATHEMATICS**
**KLE'S G I BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE,**

**NIPANI-591237.**

# G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE

## NIPANI-591237

'College with Potential for Excellence'

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## Certificate

This is to Certify that project carried out by **MISS TRUPTI MAGADUM** Reg No: MT191219, **MISS VARSHA PATIL** Reg No: MT191220, **MISS VIJAYLAXMI KAKOLI** Reg No: MT191221, bonafide students of G. I. Bagewadi College, PG center Nipani, in partial fulfillment for the award of **Master of Science** in **Mathematics** of the Rani Channamma University, Belagavi during the year 2020-21. It is certified that all correction/suggestions indicated for internal assessment have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.

**MR. J. N. MAGADUM**
Guide

**MR. SAMMED CHOUGALE**
Coordinator

Dr. (Smt.) M. M. Shankrikopp
**HOD**

Dr. M.M. HURALI
**Principal**

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