DEPARTMENT OF MATHEMATICS

PROFILE 2017-18

SRI CHANDRASEKHARENDRA SARASWATHI VISWA MAHAVIDYALAYA

(Deemed to be University u/s 3 of UGC act 1956)

(Accredited with "A" Grade by NAAC) ENATHUR,

KANCHIPURAM - 631 561.

DEPARTMENT OF MATHEMATICS

Profile

Department of Mathematics

About the Department

Year of Establishment

1994	Born as a component of Department of Science and Humanities
1997	Ph.D., programme commenced
2009	M.Phil., (Full time & Part time) programme commenced.
2010	First Batch of the M.Phil., students
2012	M.Sc (Mathematics) programme commenced
2013	The department of Mathematics was separated from the department of Science and Humanities and given independent status
2013	Sankara Ganitha Sastra Parishad (Mathematical Association) was born.
2014	Highest Intake of Students for Part time M.Phil.,
2015	First Batch of the M.Sc., full time passed out.
2015	Proposal to start B.Sc (Mathematics) programme was approved and Board of studies met to finalize the syllabus
2018	First Batch of the B.Sc., students passed out

PREFACE/PREAMBLE

Mathematics is one of the major contributors in the engineering field and its principles are involved in the calculation, compilation, and graphical representation, design of experiments, statistical analysis, development and construction of nearly all of the electrical, electronics, mechanical, structural and computing devices and systems. Continued research and development have led to better computing processes (like MATLAB) helping the mankind.

The Department of Mathematics at SCSVMV is as old as the institute itself. Its impact on the institute and on society is easily demonstrated by noting the alignment of the department's evolution with key events and academic advances in the University. Today, the department of mathematics of SCSVMV attracts and features an extraordinary rich diversity and quantity of talented individuals, with nearly 70 M.Phil graduates, 17 Post graduate students and over 20 faculty members at present. The impressive array of students makes the department as one of the largest in Mahavidyalaya.

The department provides the broad knowledge base required for engineers in present global application scenario. It takes the maximum advantage of the latest technologies and market opportunities to enrich the learners with updated and advanced know-how of modern technology. The main focus is concentrating on the significant modern developments in the application of engineering.

Contents

Vision & Mission

We envision our status to be a unique department of higher learning that offers quality education at an affordable cost in an inclusive manner, in the post-graduate and research level while imparting training in Mathematical software and Mathematical aptitude from time to time, to the Engineering students as well, thus helping the students to be up to date and job-worthy.

We hope to achieve this by producing quality mathematical research; providing teaching and extension services; upgrading the curriculum continuously; producing facilities for faculty development; and helping the development of mathematics faculty of other higher educational institutions by short term training programs, workshops seminars and lectures.

Making engineers to develop mathematical thinking and gain the skill for applying it to solve complex engineering problems, so as to design, mathematical models for complicated systems involving global level technology.

Providing high quality graduate and professional programs of study with a wide spectrum of courses which attract the best students and cater to the mathematical needs of the university, industry and community alike.

Offering rigorous training to students so as to enable them to pursue higher studies or take up jobs that require a high degree of mathematical skill.

Involving graduates who have logical thinking and an aptitude for scientific research in frontier areas of mathematics and offering guidance up to doctoral level so as to support its own and other academic programmes of the university.

Striving to provide excellent teaching, research in order to serve the university and the community at large by enabling application of mathematics to other disciplines for which mathematical background is essential.

Creating interest in mathematical logic, problem solving and application of mathematics to real-life problems through the activities of the Mathematics Club (Sankara Ganitha Sastra Parishad).

Objectives

❖ To enhance the Laboratory based teaching to teach the application and theoretical concepts where ever possible, to ensure students volunteer themselves to learn the mathematical concepts with full interests.

❖ To increase the use of ICT tools like MATLAB, some open source softwares and by way of using PPT, Video lectures and to use internet extensively to make the teaching - learning interesting.

❖ To continue follow modern pedagogy methods of teaching in the class rooms.

❖ To conduct national / international conferences so as to create avenues to learn from the experts from beyond our boundaries.

❖ To create a plan to subscribe to various journals in the relative field of study.

❖ To conduct training programs, workshops, lab programs to staffs and students of the various institutes in the region.

Academic Programs Offered

The department offers M.Phil., postgraduate and graduate level courses with the aim of providing a sound background in the areas of Mathematics.

Graduate Courses   : B.Sc., (Mathematics)

Post Graduate Courses   : M.Sc., (Mathematics)

Research Programs   : M.Phil., (Full-Time)

                                        Ph.D.,(Full-Time & Part-Time)

M.Phil., Programmes

[Duration: 1 year/non semester – Full Time , 1 year /non semester – Part Time]

Master of philosophy [M.Phil.,] is a one year degree program. The Department of Mathematics at SCSVMV is renowned for imparting state of the art postgraduate education. We attract the bright students from the country who score very high ranks in their P.G., programme and they are admitted through entrance examinations conducted by SCSVMV.

M.Sc., Programme [Duration: 2 years/4 semester – Full Time]

Master of Science is a Post-Graduate Program for specializing in certain areas of Mathematics.

Ph.D. Programme

The doctoral programme in mathematics offers students the possibility of doing intensive research in an area of their choice. It has been our constant endeavour to provide the best facilities and working environment to our research students.

Current Student Details (2017-18)

Course	No. of Students
M.Phil	6
IIM.Sc.,	4
I M.Sc.,	17
III B.Sc.,	30
II B.Sc.,	30
I B.Sc.,	57

FACULTY POSITION

List of Faculty Members with Designation & Area of Specialization

S.No	Name	Designation	Area of Specialization
1.	Prof.Dr.T.Venugopal	Professor/ Controller of Examinations/ Director, R&D	Functional Analysis
2.	Prof. Dr.K.Srinivasa Rao	Professor/HOD	Algebra
3.	Dr.N.Saradha	Assistant Professor (Stage III)	Graph Theory
4.	Dr. R.Malathi	Assistant Professor (Stage II)	Multi-valued logic
5.	Dr. D.Vijayalakshmi	Assistant Professor (Stage II)	Graph Theory
6.	Dr. E.Geetha	Assistant Professor (Stage II)	Fluid Dynamics
7.	Dr. R.Mageswari	Assistant Professor (Stage II)	Graph Theory
8.	Dr. P.Nagarajan	Assistant Professor (Stage II)	Queuing Theory
9.	Mr. P. Balaji	Assistant Professor (Stage II)	Petri Nets
10	Dr. S. Vijayabarathi	Assistant Professor (Stage II)	Algebra
11	Dr.K.Pramila	Assistant Professor (Stage II)	Fuzzy Set Theory
12	Dr. J. Sengamala Selvi	Assistant Professor (Stage I)	Applied Mathematics Using ICT
13	Mr.V.K.Radhakrishnan	Assistant Professor (Stage I)	Operation Research
14	Dr. A.Dhanalakshmi	Assistant Professor (Stage I)	Graph Theory
15	Dr.K.Bharathi	Assistant Professor (Stage I)	Operation Research
16	Dr.T.N.Kavitha	Assistant Professor (Stage I)	Algebra
17	Dr. A.Gayathri	Assistant Professor (Stage I)	Applied Mathematics
18	Mrs.B.Amudha	Teaching Assistant	Real Analysis
19	Mr.K.Saravanan	Teaching Assistant	Graph Theory
20	Ms. R.Kalaiarasi	Teaching Assistant	Real Analysis
21	Mrs.A.Shakila	Teaching Assistant	Graph Theory

Staff Profile

Dr.T.Venugopal

Dr.T.Venugopal, M.Sc, Ph.D, PGDCA, MIMS, MISIAM, MSCIEI, MISTE, MAMTI

Controller of Examination

Professor of Mathematics, Director (Research and Publications)

Formerly Professor and Head, Department of Mathematics,

Member – Board of Management;

Academic Council; Planning and Monitoring Board;

Research Board;

 Board of Studies;

Sri Chandrasekharendra Saraswathi Viswa Mahavidyalaya

(SCSVMV University), Enathur, Kanchipuram 631561.

Phone (Office - Direct): +91 44 27264241, +91 44 27264301/308/293

Ext:258

Phone (Office - Secretary): +91 44 27264301/308/293 Ext:287

Mobile: +919578137581, Personal Email : drmathtvg@gmail.com

Official Emails: directorresearchkanchiuniv@gmail.com,

University Email: venugopal.t@kanchiuniv.ac.in

Personal characteristics

- Result oriented individual performer and a credible team leader
- Self-starter, problem solver, spiritual thinker, analytic and professional
- Reliable, conscientious, pious, courteous and peace loving
- Adaptable, Capable to work within a framework and industrious

Teaching characteristics

- Teaching meticulously to attentive, inattentive or even lethargic students
- Teaching applicable mathematics to students with no base in mathematics
- Teaching with sense of humor / entertainment / values / anecdotes / quotes
- Teaching Mathematics through Excel / Open Source Software / Case Studies

Personal objectives

- To be a motivator for students, colleagues and friends alike
- To be a spiritual counselor to those in distress / anguish
- To help break barriers between colleagues / friends
- To deliver talks on Value Education / Educare

Teaching objectives

- To aid engineering and management students to learn mathematics comfortably
- To encourage faculty to teach mathematics with a strong bias towards applications
- To facilitate faculty to teach mathematics through software
- To conduct workshops, as coach, on Teaching Mathematics through Software

Academic Brief

- Best outgoing PG student of St.Xaviers College, Palayamkottai
- Passed CSIR-UGC National Eligibility Test for lectureship and fellowship
- Passed PGDCA, Certificate course in Hindi and Simple Spoken Sanskrit Course
- Highly commended doctoral thesis, many publications and paper presentations
- Recipient of prestigious CSIR Junior & Senior Research Fellowship

- Interdisciplinary research interests with Management, Computers & Sanskrit
- Guided & guiding many scholars to M.Phil Dissertation & Ph.D Thesis
- Life member in many professional societies
- Reviewer / Editorial Board Member of many research journals
- Teaching experience of nearly sixteen years at University level
- Courses taught M.E/MCA/MBA/M.Phil/M.Sc/B.E/BCA/B.Sc/BSCS/B.Ed
- Chairman, Board of studies in Mathematics, SCSVMV for many years
- Member, Board of Studies in Mathematics
- Member, Academic Council of SCSVMV
- Member, Research Board of SCSVMV

Personal Profile

Name	Thothathri Venugopal
Fathers Name	Narayanan Thothathri
Date of birth	12th April, 1967
Age	50 Years as on 12th April 2017
Languages Known	Tamil, English, Hindi (To Speak, To Read and to Write)Working knowledge of Sanskrit, Learning Telugu)
Marital Status	Married - Blessed with a composed wife and an understanding son
Interests	Collecting and reading books / ebooks in Mathematics and Spirituality Own library of about 500 books in these subjects Delivering talks on Mathematics and Value Education Conducting workshops on Mathematics with software as coach
Qualifications	M.Sc., Ph.D., PGDCA. CSIR-UGC (NET)

- Passed SSLC in 1982 from Mahatma Gandhi High School, Villupuram
- Passed HSC in 1984 from Municipal Higher Secondary School, Cuddalore

- Passed B.Sc(Maths) in 1987 from Periyar Arts College, Cuddalore
- Passed M.Sc(Maths) in 1989 from Saint Xaviers College, Tirunelveli
- Passed CSIR-UGC (NET) in 1991 from CSIR-UGC, New Delhi
- Passed Hindi Certificate Course in 1992 from Central Hindi Directorate
- Passed PGCDA in 1995 from Madurai Kamaraj University, Madurai
- Awarded Ph.D (Maths) in 1998 from Madurai Kamaraj University,
- Passed Simple Spoken Sanskrit course in 2002 from SCSVMV University

Awards: Best Teacher Award from SCSVMV University 2014

Life Memberships

IMS - Indian Mathematical Society (L/2011/60)

ISIAM - Indian Society for Industrial and Applied Mathematics (V9)

ISTE – International society for Technical Education (LM 3018)

AMTI – The Association of Mathematics Teachers of India (L13065)

MPRERNA - Prerna Soc. of tech. edn and research (PRE/RNAST/131451)

Senior Membership SCIEI - Science and Engineering Institute, USA (20121113002)

Experience 18+ Years in teaching Mathematics and administration

Dr. K.Srinivasa Rao

Name	: Dr. K. Srinivasa Rao
Father's Name	: Veera Suryam
Date of Birth	:15-04-1970
Nationality	: Indian
Religion	: Hindu
Address for correspondence	: Dr. K. Srinivasa Rao
	Associate Professor & Head
	Dept., of Mathematics
	SCSVMV University,
	Enathur,
	Kanchipuram- 631 561,
	Tamilnadu, India
	Mobile Number: 8870688896
	E-mail: raokonda@yahoo.com

Educational Qualifications:

- Ph.D in Mathematics, from Acharya Nagarjuna University, Guntur, Andhra Pradesh, India, February 2010.
- M.Phil. in Mathematics with *First class*, M.K. University, Madurai, 2004
- Post Graduate Diploma in Computer Science with *First class* University of Hyderabad, Hyderabad, 2003
- Master of Science in Mathemaics with *Distinction*, Jawaharlal Nehru Technological University, Hyderabad,1993.
- Bachelor of Science with *First Class* MVNJS&RVR College of Arts & Sciene, Malikipuram, Andhra University, Waltair, Vishakhapatnam, 1990
- Board of Intermediate Education with *First Class* Hyderabad, Andhra Pradesh, 1987
- Board of Secondary Education with *First Class* Andhra Pradesh, 1985.

Professional Experiences:

1. At present working as an **Professor & HoD, Department of Mathematics** at S.C.S.V.M.V.University, Kanchipuram, Tamilnadu since 02-07-2012.

2. Worked as a **Principal** of Harshavardhana P G College of Computer Science, Cherukupalli, Guntur District during the period 20-05-2010 to 29-06-2012.

3. Worked as **a Professor and Head of the Department of Science and Humanities** at Adam's Engineering College, Paloncha, Khammam District, Andhra Pradesh during the period 1999-2010.

4. Taught Discrete Mathematics & Probability and Statistics subjects at University College of Engineering, Kakatiya University, Kothagudem as a Guest Lecturer for M.C.A students during the period 20th November 2003 to March 2010.

5. Worked as a Lecturer at M.V.N.J.S & R.V.R. Degree College, Malikipuram, East Godavari Dist during the period 1998-1999

6. Worked as a Lecturer at S.N.Raju Jr. College, Gudimellanka, East Godavari District, during the period 1996-1998

7. Worked as a Lecturer at Margadarshi Junior College, Karimnagar, Karimnagar District, during the period 1993-1996

No. of papers published in National/International Journals-31

No. of papers published in conference proceedings-9

No. of books published-

No. of papers presented in National/International Conference-26

No. of seminars/workshops/conferences attended-36

No. of invited talks delivered/acted as resource Person:19

No. of programs acted as resource person within university:14

Recognitions

1. Got Best Teacher award for the academic year 2016-17 from SCSVMV.
2. Received Best Paper Award in International Conference on Contemporary Approaches in Mathematics and Emerging Engineering Trends, organized by Vinayaka Missions University, held on 4-5, May 2017.

Programs Conducted:

1. National Workshop on MATLAB Programming, 08-11-2014
2. National Seminar on Emerging Trends in Pure and Applied Mathematics, 24-02-2017
3. International Seminar on Fluid Mechanics, 06-03-2017
4. National Workshop on MATLAB in Applied Sciences, 15-16, September, 2017
5. Winter Refresher Course in Mathematics, 1-3 February, 2018
6. International Conference on Pure and Applied Mathematics, 19-20 February 2018

Research Guidance:

Four scholars completed their Ph.D under my guidance
Three research scholars are doing their Ph.D under my guidance
21 Students completed their M.Phil degree under my guidance and 1 is doing

Administrative Brief

- Nodal Officer, UGC/AISHE
- Chairman-Statistics and Information Cell
- Worked as Assistant Chief Warden during 2014-2015
- Co-Ordinator, National Institute Ranking Framework (NIRF-2017 & NIRF- 2018)
- Acted as Chief Superintendent, University Theory Examinations, March-June, 2017
- Co-Ordinator-Curricular Aspects, Task Force Committee (TFC) in order to prepare of Self Study Report (SSR) for re-appraisal to NAAC.
- Member of Anti- Ragging Squad during 2014-2017
- Member of Students' Cabinet Advisory Committee from 2015 to till date
- Member of Students Counseling System from 2016 to till date
- Member- Board of Studies, Department of Mathematics, SCSVMV

Dr.N.Saradha

Assistant Professor of Mathematics
SCSVMV University,
Enathur, Kanchipuram- 631 501
9843888520, saaradha@yahoo.com

Educational Qualifications:

- ➢ Ph.D in Mathematics from SCSVMV University.
- ➢ M.Phil in Mathematics with First Class with distinction, Annamalai University.
- ➢ M.Sc in Mathematics with First Class with distiction, Seethalakshmi Ramaswamy College, Bharathidasan University, 1996 .Bharathidasan University
- ➢ B.Sc in Mathematics with First Class, Shrimathi Indra Gandhi College, Bharathidasan University,1994.

Professional Experiences:

- ➢ Working as an Assistant Professor of Mathematics at SCSVMV University, Kanchipuram since 16, November - 1998.

No.of papers published in National/International Journals-19
No. of papers presented in National/International Conference-11
No. of seminars/workshops/conferences attended-39

Resource Person

- Acted as Convener cum Resource person for *One Day Workshop on Matlab and Its Applications* organized by Department of Mathematics, SCSVMV University, Kanchipuram on 10.02.2014.

- Acted as Resource person for *One Day Workshop on Matlab and Its Applications* organized by Department of Mathematics, SCSVMV University.

- Acted as Resource person for *One Day Workshop on Matlab and Its Applications* organized by Department of Mathematics, SCSVMV University, Kanchipuram on 12.10.2015

- Acted as Resource person for *Quality Enrichment Programme – III(QEP 2017)* organized by Department of Mathematics, SCSVMV University, Kanchipuram on 27.10.2017.

Dr.R.Malathi

Assistant Professor
Department of Mathematics,
Sri Chandrasekharendra Saraswathi Viswa Mahavidyalaya,
SCSVMV, Enathur, Kanchipuram 631561.
Phone (Office): +91 44 27264301/308 Ext:231
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malathilathar@gmail.com

Academic Brief

Guided & guiding many scholars to M.Phil Dissertation

Life member in many professional societies

Editorial board member of IJESIRD Journal

Teaching experience of nearly Fifteen years at University level

Teaching M.E/MCA/MBA/M.Phil/M.Sc/M.Tech/B.E/BCA/B.Sc/BSCS

Personal and Academic Profile

Name	**:**	R.MALATHI
Fathers Name	**:**	A. Rajendiran
Date of birth	**:**	05.05.1974
Languages Known	**:**	Tamil, English(Learning Hindi)
Marital Status	**:**	Married
Interests	**:**	Collecting and reading books in Mathematics, Delivering talks on Mathematics and Conducting (the sessions of) workshops on Mathematics with software
Qualifications	**:**	M.Sc., M.Phil., Ph.D
Occupation	**:**	Assistant Professor of Mathematics, SCSVMV

Experience	: 16+ Years in teaching Mathematics
Courses Taught	: M.E/M.Tech/MCA/MBA/M.Phil/M.Sc/
	B.E/BCA/B.Sc/BSCS

Papers Taught : Engineering Mathematics (All Semesters)
Numerical Analysis, Business Statistics, Quantitative Techniques, Operations Research, Discrete Mathematics,
Automata Theory, Probability, ODE, Complex Analysis & Statistics.

Research Guidance : Guided 26 M.Phil research scholars
Guiding 1 M.Phil research scholar
1 M.Sc research scholar.

RESEARCH INTERESTS INTER DISCIPLINARY

Multi-valued logic
Operations Research Modeling
Network Models
Linear Algebra
Discrete Mathematics
Applied Graph Theory
Applied Mathematics
Logical agents

No. of papers published in National/International Journals-19
No. of papers published in conference proceedings-12
No. of books published-7
No. of papers presented in National/International Conference-18
No. of seminars/workshops/conferences attended-48
No. of invited talks delivered:3

EDITORIAL BOARD MEMBER

- Editorial board member of IJESIRD Journal.

MEMBERSHIP

- AMTI - Junior Mathematics Membership
- Indian Society of Industrial and Applied Mathematics (ISIAM),
- The Association of Mathematics Teachers of India (AMTI)   IAENG – International Association of Engineers-

AWARDS RECEIVED

→ Received more than 300 API Score award on 05.09.2017,

SCSVMV.

→ Received Rs 1,000/- contribution to the best link between jaina logic and Multi-valued logic on 11.05.2017.

→ Received Best Teacher Award on 26.09.2016, SCSVMV University.

Dr.D.Vijayalakshmi

Assistant Professor
Department of Mathematics
Sri Chandrasekarendra Saraswathi Viswa Mahavidhyalaya
EnathurKanchipuram
Tamilnadu
India
E-mail: guruviji97@gmail.com
Mobile: 9445204713

Fields of Research Interest

Graph theory
Application of Graph theory

Educational Qualification

PhD   Department of Mathematics, Sri Chandrasekarendra
                       Saraswathi Viswa MahaVidhyalaya
                       Kanchipuram
Thesis: Application of Graph theoretical concepts in Protein Analyses

M.Phil   Alagappa   University, Karaikudi Tamilnadu 2004, I
                       class.

M.Sc   S.I.V.E.T Arts and Science College University of Madras
                       Tamilnadu 2002, First Class.

B.Sc   Chellammal   Women's   College   Guindy,   Chennai
                       University of Madras, Tamilnadu, 2000, First Class

Higher Secondary   Sri Sankara Vidhyalaya with **First Class,** State Board, 1997

Secondary   Sri SankaraVidhyalaya with **First Class,** State Board,
                       1995

Present Position

Assistant Professor, Department of Mathematics, Sri Chandrasekarendra Saraswathi Viswa Mahavidhyalaya ,Enathur, Kanchipuram, Tamilnadu (2007- till date)

Reviewer   American Journal of Mathematics

Professional Experience

- Worked as a Lecturer at SIVET College Gowrivakkam, during the period April 2002-June2003.
- Worked as a Lecturer Chellammal women's college Guindy, during the period July 2003-April 2005.
- Worked as a Lecturer at New Shribhavani Arts and Science College during the period June2005-Dec2006
- Worked as a Lecturer at T.S.Narayana Swami College of Arts and Science College during the period Dec2006-July 2007.
- At present working as an Assistant Professor of Mathematics at SCSVMV University, Kanchipuram, Tamilnadu since 14-07-2007.

No. of papers published in National/International Journals-13
No. of papers published in conference proceedings-3
No. of papers presented in National/International Conference-8
No. of seminars/workshops/conferences attended-29
No. of M.Phil Scholars Guided: 14

Resource Person

Acted as Resource person cum Chief guest for One day Seminar on Finite Automata organized by Department of Mathematics, Annai Teresa Arts and Science College, Thirukazhukundram 603109 on 27.02.2018.

Motivation talk

Delivered motivation talk to have a fear free examination to plus two students at
- Government Hr.Sec. School , Molachur 602106.
- Government Hr. Sec. School Maduramangalam 602106.
- Government Hr.Sec School Musaravakkam 631551

Dr.E.Geetha

Name	**:**	**Dr.E.GEETHA**
Father Name	**:**	S.T.Ellappan
Date of Birth	**:**	06.08.1982
Nationality	**:**	Indian
Religion	**:**	Hindu
Aadhar Number	**:**	**5083 5309 7806**
Pan Number	:	ATJPG9577G

Address for Correspondence :   No.26, Nithyanandhar Nagar, Kanchipuram 631502

Permanent address: No.26, Nithyanandhar Nagar, Kanchipuram 631502

Educational Qualification:

Qualified Set Exam, Oct 2016.

Ph.D, Manonmaniam Sundaranar University, Oct 2014

M.Phil with First Class, Alagappa University, June 2006

M.Sc with Distinction, Thiruvalluvar University, May 2005

B.Sc with Distinction, University of Madras, May 2003

HSLC with Distinction, State board, May 2000

SSLC with Distinction, State board, May 1998.

Professional Experience:

- ➢ Worked as a Lecturer in Arulmigu Meenakshi Amman College of Engineering, Kanchipuram from September 2005 to July 2007.
- ➢ Working as a Assistant Professor (Stage I) in Sri Chandrasekharendra Saraswathi Viswa MahaVidyalaya, Kanchipuram from july 2007 to July 2012.
- ➢ Working as a Assistant Professor (Stage II) in Sri Chandrasekharendra Saraswathi Viswa Maha Vidyalaya, Kanchipuram from July 2012 to till date.

No. of papers published in National/International Journals-15

No. of papers presented in National/International Conference-5

No. of seminars/workshops/conferences attended-35

No. of Programs organized: 2

No. of M.Phil Scholars guided: 18

Resource Person:

- Acted as a Resource person for the workshop on "MATLAB for Researchers" organized by Department of Mathematics at SCSVMV University on 12th Feb 2017.

- Acted as a Resource person for "Quality Enrichment Programme – III" organized by Department of Mathematics at SCSVMV University on 27th October 2017.

Dr.R.Mageswari

Name	:	R.Mageswari
Father's Name	:	A.Rajapandian
Date of Birth	:	19.06.1978
Nationality	:	Indian
Religion	:	Hindu
Aadhar Number	:	5894 9093 5616
PAN Number	:	AZTPM2307E

Designation   : Assistant Professor (S-II),
                                         Department of Mathematics,
                                         SCSVMV.

Address for correspondence   : Dr.R.Mageswari,
                                       Assistant Professor,
                                       Dept., of Mathematics
                                       SCSVMV,
                                       Enathur,
                                       Kanchipuram- 631 501.
                                       Tamilnadu, India
                                       Mobile Number: 9842853476
                                       E-mail: mageswari78@gmail.com
                                                   : rmageswari@kanchiuniv.ac.in

Permanent Address   : No.97, Arignar Anna Nagar,
                                         Enathur, Kanchipuram-631501.

Educational Qualifications:

Ph.D in Mathematics with distinction, SCSVMV , Enathur, Kanchipuram, 2018

M.Phil. in Mathematics with *First class*, Aditanar College, M.S university, Tirunelveli, 2001.

Master of Science in Mathematics with First class, Aditanar College,

M.S University, Tirunelveli, 2000.

Bachelor of Science with First Class Govindammal Aditanar College for Women, Tiruchendur, M.S. University, 1998.

Board of Higher Secondary Education with First Class, Thisaiyanvilai, Tirunelveli District, Tamil Nadu, 1995.

Board of Secondary Education with First Class, Thisaiyanvilai, Tirunelveli District, Tamil Nadu, 1993.

Professional Experiences:

1. Worked as a Lecturer / Officer in Charge at Sri Jeyandra Saraswathi Centre, (Unit of SCSVMV) Kommadikottai, Thoothukudi District, during the period 2002-2007.

2. At present working as an Assistant Professor of Mathematics at SCSVMV, Kanchipuram, Tamilnadu since 2007.

No. of papers published in National/International Journals-10
No. of papers presented in National/International Conference-5
No. of seminars/workshops/conferences attended-38
No. of Programs organized: 4
No. of invited talks delivered: 3

Dr.P.Nagarajan

Name	:	Dr.P.Nagarajan
Department	:	Mathematics
Designation	:	Assistant professor (stage-II)
Qualification	:	M.sc., M.Phil., Ph.D
Area of research	:	Queueing theory & Stochastic processes
Date of joining	:	23.08.2008
Pan Number	:	AIYPN6790L
Aadhar Number	:	589700721464
Residential Address	:	No. 28, 29, Adhi Sankarar Nagar, Enathur-631561 Kanchipuram
Permanent Address	:	No. 66/29, East car Street, Chidambaram-608001
Contact number	:	93642900300, 9952788541

Research activities:-

- Successfully completed my viva exam on 29.12.17.

- Guiding M.phil research scholars (Mathematics)(regular and part time) Doing Ph.D in Queueing theory in part time mode from 27-02-12 onwards.

Educational Qualifications:

- Completed Ph.D in Queueing theory in part time mode from Annamalai University on December 2017..

- M.Phil in Mathematics with first class, thesis entitled **"An M/M/1 Retrial Queue with unreliable server".** Annamali University, Annamalai Nagar, Chidambaram, Cuddalore district, Tamil Nadu, India, (Course completed 2008).

- M.Sc in Mathematics with first class, Annamalai University, Annamalai Nagar, Chidambaram, Cuddalore district, Tamil Nadu, India, (Course completed 2006)

- B.Sc in Mathematics with first class, Sri Karumariamman Government Arts College (Affiliated to University of Madras), C-Mulur, Cuddalore district, Tamil nadu, India (Course completed 2004).

Professional Experiences:

Working as an Assistant Professor of Mathematics at SCSVMV University, Kanchipuram, Tamilnadu , Since 23-07-2008.

No. of papers published in National/International Journals- 7

No. of papers published in National/International conference proceedings-05

No. of papers presented in National/International Conference-13

No. of seminars/workshops/conferences attended-51

No. of books published: 01

No. of invited talks delivered: 05

Mr. P. Balaji

Name	:P.BALAJI
Father's Name	: S.Padmanaban
Date of Birth	:15.06.1972
Nationality	: Indian
Religion	: Hindu
Address for correspondence	: P.BALAJI

Assistant Professor

Dept., of Mathematics, SCSVMV University,

Enathur, Kanchipuram- 631 561,

Tamilnadu, India

Mobile Number: +91 9486082115

E-mail: pbr1002007@yahoo.com

Permanent Address   : P.BALAJI

50/57, Anaikatti street

L.Kanchipuram-631501

Educational Qualification

1. M.Sc.,(Mathematics) Degree 1 Class (Studied at Department of Mathematics, Bharathidasan University, Trichy), Regular Course in the year 1995
2. M.Phil.,(Mathematics) Degree of Madurai Kamaraj University, Madurai in the year 2000

3. PGCDA Course of Madurai Kamaraj University, Madurai in the year 2003
4. GATE-2001
5. Rastrabhasa Praveen from Dakshina Bharathi Prachar Sabha, Chennai in the year 1995
6. PhD Undergoing Phd(Part time-External) at Sathyabama university Chennai, under the guidance of Dr.Rangarajan of Bharath University, Chennai in Petri Nets area.

Teaching Experience:

1. 7 Years and 3 months experience at Thiruvalluvar College of Engg and Technology, Vandavasi
2. 1 Year and 3 months experience at MNM Jain Engg.College, Chennai-96
3. 4 Years and 6 Months at Arulmigu Meenakshi Amman College of Engg., Kanchipuram.
4. 6Years experience at SCSVMV University, Kanchipuram.

No. of papers published in National/International Journals- 15
No. of papers presented in National/International Conference- 12
No. of seminars/workshops/conferences attended- 32
No. of invited talks delivered: 3
No. of programs organized:1

Dr.S.Vijayabarathi

Name	**:** S.Vijayabarathi
Father's Name	**:** D.Shanmugam.
Date of Birth	**:** 24.06.1966
Nationality	**:** Indian
Religion	: Hindu
Aadhar Number	: 7344 9080 0340
Pan Number	: ALTPV0089L
Address for correspondence	**:** Mrs.S.Vijayabarathi
	Assistant Professor,
	Dept., of Mathematics,
	SCSVMV University,
	Enathur,
	Kanchipuram- 631 561,
	Tamilnadu, India
	Mobile Number: +91 9789187704
	E-mail:vijayabarathiguru @gmail.com.
Permanent Address	**:** Mrs.S.Vijayabarathi
	233 H,Govindasamy Street,
	Sudharsan nagar,
	Chinna Kanchipuram-631 501

Educational Qualifications:

- ➢ Ph.D in algebra (Mathematics) from SCSVMV University.
- ➢ M.Phil in Mathematics with First Class ,Alagappa University,2004.
- ➢ M.Sc in Mathematics with First Class, University of Madras, 1989.
- ➢ B.Sc in Mathematics with First Class, University of Madras,1987.
- ➢ B.Ed in Mathematics and English,Department of Collegiate Education, Tamil Nadu,1991.

Professional Experiences:

- ➢ Worked as a PG Assistant in Siddhardha Senior Secondary School, Vellore, during the period 1989-1990.

- ➢ Worked as a PG Assistant in Desia Matriculation HrSec.School,Vellore, during the period 1991-1992.

- ➢ Worked as a Maths Lecturer in Annai Theresa Teacher training School, Madhurandagam,during the period 1992-1994.

- ➢ Worked as a PG Assistant in S.S.K.V.MatricHr.Sec.School, Kancheepuram, during the period 1995-2005

- ➢ Worked as a Lecturer in the Department of Mathematics,Sri Sankara Arts & Science College, Enathur,during the period 2005-2008.

- ➢ At present working as an Assistant Professor of Mathematics at SCSVMV University, Kanchipuram since 31, August-2009.

No. of papers published in National/International Journals-9
No. of papers published in National/International conference proceedings-7
No. of papers presented in National/International Conference-8
No. of seminars/workshops/conferences attended-24
No. of books published:1
No. of invited talks delivered: 2

Dr.K.Pramila

Dr. K.PRAMILA
Assistant Professor (Stage-II)
Dept. of Mathematics
SCSVMV University,
Enathur,
Kanchipuram- 631 561.
Tamilnadu, India

Mobile Number: 9445779471

Email : kpramila_74@yahoo.com

Academic Brief

- Completed Ph.D., in SCSVMV University in the area of application of fuzzy set theory.
- Completed M.Phil. (Mathematics) in Manonmaniam Sundaranar University in 2008
- Finished B.Ed. in IGNOU in the year 2004
- Completed M.Sc. (Mathematics) in BharathidasanUniversity in the year 1996
- Completed B.Sc., (Mathematics) in BharathidasanUniversity in the year 1994

Personal Profile

Name	: K.PRAMILA
Father's Name	: S.KALIYAMURTHY
Date of Birth	: 09-04-1974
Nationality	: Indian
Religion	: Hindu
Aadhar Number	: 9705 5445 9689
PAN Number	: BLYPP 3581 P
Address for Correspondence	: W/o M. SUNDARRAJAN
	167/2, Plot No.2, Saravana Nagar,
	Sevilimedu
	Kanchipuram-631 501

Professional Experience : 7 years of teaching experience in Higher Secondary Schools
11 Years of teaching experience at UG and PG Level

Courses Taught : B.E., M.E., M.C.A., B.Sc., M.Phil.,

Research Guidance : Guided - 16 M.Phil., Research Scholars

No. of papers published in National/International Journals-9
No. of papers published in National/International conference proceedings-3
No. of papers presented in National/International Conference-12
No. of seminars/workshops/conferences attended-36
No. of books published: Part of a book
No. of programs acted as resource person: 1

Dr. J .SENGAMALASELVI

Dr. J.SENGAMALASELVI, M.Sc , B.Ed., M.Phil., Ph.D.

Asst.Professor of Mathematics
Sri Chandrasekharendra Saraswathi Viswa Mahavidyala
(SCSVMV), Enathur, Kanchipuram 631561
Pavisneka@gmail.com

PERSONAL AND ACADEMIC PROFILE

- ❖ Name : J.Sengamalaselvi
- ❖ Fathers Name : M.Jagadeesan
- ❖ Date of birth : 06.06.1974
- ❖ Languages Known : Tamil, English
- ❖ Marital Status : Married
- ❖ Interests : Collecting and reading books in

  Delivering talks on Mathematics and Conducting Workshop on Mathematics with software

- ❖ Qualifications : M.Sc., B.Ed, M.Phil., Ph.D
- ❖ Occupation : Assistant Professor of Mathematics, SCSVMV
- ❖ Experience : 15+ Years in teaching Mathematics
- ❖ Pan card no : CIXPS0893N
- ❖ Aadhar card No : 812451928682

Professional Experiences:

- ❖ Worked as a Teacher at, Govt. Girls Hsc. School, Uthiramerur Kanchipuram District, during the period 1997-2001.
- ❖ Worked as a Teacher at SSKV HSc.School, Kanchipuram,during the period, .
- ❖ Worked as a Lecturer at Adiparashakthi Arts &Science College, Kalavai during the period 2001-2014.
- ❖ Worked as a Lecturer at Jei Mathajee Teacher Training Institute, Kanchipuram during the period 2004-2006.
- ❖ Worked as a lecturer at JeiMathajee College of Engineering, Kanchipuram during the period 2006-2008.
- ❖ At present working as an Assistant Professor of Mathematics at SCSVMV University, Kanchipuram, Tamilnadu since 31.08.2009.

No. of papers published in National/International Journals-21
No. of papers presented in National/International Conference-27
No. of seminars/workshops/conferences attended-65
No. of workshops conducted/invited talks/ resource person:26

Mr.V.K.Radhakrishnan

Name	:	V.K. Radhakrishnan
Father's Name	:	Mr. V. Kumar
Date of Birth	:	14-09-1987
Nationality	:	Indian
Religion	:	Hindu
Address for Correspondence	:	V.K. Radhakrishnan

Assistant Professor

Dept., of Mathematics

SCSVMV University,

Enathur, Kanchipuram- 631 561.

Tamilnadu, India

Mobile Number: 9944369061

email : vkraki@gmail.com

Permanent Address : Mr. V.K. Radhakrishnan

#27, 28 Annai Kamatchi Amman Avenue

Extension I, Across Temple City,

Vishnu Kanchi, Kanchipuram-631 501

Educational Qualification

- Pursuing Ph.D (Operations Research) in SCSVMV university.

- M.Phil (Mathematics) with First Class from SCSVMV University in the year 2011.

- M.Sc., (Mathemarics) with first class from Madras Institute of Technology, Anna University, Chrompet, Chennai, in the year 2009.

- B.Sc., (Mathemarics) with first class from Madras University, in the year 2004.

Professional Experience

- Presently working as an Assistant Professor at SCSVMV University Since 3nd Sep, 2010.

- Worked as Lecturer, Department of Mathematics at Sri Sankara Arts & Science College, Enathur, Kanchipuram from August' 2009 to August' 2010.

No. of papers published in National/International Journals-6
No. of papers published in proceedings of National/International conferences-6
No. of papers presented in National/International Conference-9
No. of seminars/workshops/conferences attended-37
No. of programs acted as resource person:3
No of awards received: 3
No of programs organized;2

Dr. A. Dhanalakshmi

Name	:	**A. DHANALAKSHMI**
Father's Name	:	P. Amaresan
Date of Birth	:	11-07-1979
Nationality	:	Indian
Religion	:	Hindu
Date of Joining	:	29.06.2012
Aadhar Number	:	932770910547
PAN	:	BHNPD4236N

Address for correspondence : A. DHANALAKSHMI,
Assistant Professor,
Dept., of Mathematics
SCSVMV University,
Enathur,
Kanchipuram- 631 561,
Tamilnadu, India
Mobile Number: 9500538546
E-mail: dhana_amaresan@yahoo.com

Permanent Address : A. DHANALAKSHMI,
20, Chengalvarayan Othavadai Street,
Pillaiyarpalayam,
Kancheepuram – 631 501.

Educational Qualifications:

➢ Ph.D in Mathematics, Title: Graph Theoretical Characterization of Some Chemical Structures For Finding Topological Indices as Molecular Descriptors in SCSVMV University, Enathur, Kancheepuram.

➢ M.Phil. in Mathematics with *First class*, Algappa University, 2004

➢ Master of Science in Mathemaics, Annamalai University, 2001.

- ➢ Bachelor of Science with *First Class* Pachaiyappa's College for Women, Kancheepuram, 1999.
- ➢ Board of Higher Secondary Education with *First Class,* Tamil Nadu, 1996
- ➢ Board of Secondary Education with *First Class,* Tamil Nadu, 1994

Professional Experience:

1. Worked as a Lecturer at Pattammal Alagesan College of Arts and Science, Athur, Chengalpat, during the period 2002-2006

2. Worked as a Lecturer at Arupadaivedu Institute of Technology, Paiyanoor, Kancheepuram District, during the period 2006-2009.

3. Worked as a Lecturer at Shri Sapthagiri Institute of Technology, Ocheri, Vellore District, during the period 2010-2012

4. At present working as an Assistant Professor of Mathematics at SCSVMV University, Kanchipuram, Tamilnadu since 29-06-2012.

No. of papers published in National/International Journals-23
No. of papers published in National/International conference proceedings-8
No. of papers presented in National/International Conference-16
No. of seminars/workshops/conferences attended-46
No. of seminars/workshops/conferences organized:6
No. of invited talks delivered: 2

Dr.K.Bharathi

Name	**:** K.BHARATHI
Father's Name	**:** M.Krishnamoorthy
Date of Birth	**:** 03-10-1982
Nationality	**:** Indian
Religion	: Hindu
Pan No	**:** BLQPB2708A
Aadhar No	**:** 961767047188

Address for correspondence : K.BHARATHI,
Assistant Professor,
Dept., of Mathematics
SCSVMV University,
Enathur,
Kanchipuram- 631 561,
Tamilnadu, India
Mobile Number: 9894281989
E-mail: 03bharathi@gmail.com

Permanent Address   **:** K.BHARATHI,
14,B,Desipalayam street,
Kanchipuram 631 501.

Educational Qualifications:

- ➢ Ph.D in Mathematics, Title : Evolutionary Algorithm in Multi Objective Optimization, VIT, Chennai., 2018.
- ➢ M.Phil. in Mathematics with *First class*, VIT University, Vellore., 2007
- ➢ Master of Science in Mathemaics with *First class*, Thiruvalluvar

University, 2006.

- ➢ Bachelor of Science with *First Class,* University of Madras, 2004
- ➢ Board of Higher Secondary Education with *First Class* Tamil Nadu, 2001
- ➢ Board of Secondary Education with *First Class,* Tamil Nadu, 1999.

Professional Experiences:

- ➢ Worked as a Lecturer at Thirumalai Engineering College, Kilambi, Kanchipuram – 631551, during the period 2008-2012.
- ➢ At present working as an Assistant Professor of Mathematics at SCSVMV, Kanchipuram, Tamilnadu since 06-07-2012.

No. of papers published in National/International Journals-7
No. of papers presented in National/International Conference-11
No. of seminars/workshops/conferences attended-47
No. of seminars/workshops/conferences organized: 4

Dr.T.N.Kavitha

Name	**:** Dr. T.N. KAVITHA
Father's Name	**:** T.D. NARAYANASAMY
Husband's Name	**:** P. Chandramohan
Date of Birth	**:** 30. 07. 1974
Nationality	**:** Indian
Religion	: Hindu
Address for correspondence	**: T.N. KAVITHA** Assistant Professor Dept., of Mathematics SCSVMV University, Enathur, Kanchipuram- 631 561, Tamilnadu, India Mobile Number: +91 9952112346; +91 9952124112 E-mail: TNKMATHS@GMAIL.COM
Permanent Address	**:** T.N.KAVITHA **W/O P. CHANDRAMOHAN** 48 Vallal Pachaiyappan Street, Kanchipuram., Pin: 631 501, India
Aadhar No.	**:** 448117842146
PAN No.	**:** ATKPK7564L

Educational Qualifications:

➢ Ph.D in Mathematics, entitled '**Semigroups With Special Algebraic Structures',** **SCSVMV** University, Enathur, Tamilnadu, India, (viva 25.10.2016)., October 2016.

- M.Phil. In Mathematics, *First class with distinction*, Periyar University, Salem, 2007
- Master of Science in Mathematics, Arignar Anna Arts And Science College,Cheyyar, University of Madras, Chennai, 2006.
- Bachelor of Science with *First Class*, Arignar Anna Arts And Science College,Cheyyar, University of Madras, Chennai, 1994
- Bachelor of education with *First Class with distinction*, Arulmigu Meenakshi Amman College Of Education, Uttiramerur, University Of Madras, Chennai, 2008
- Board of Intermediate Education with *First Class,* Cheyyar, T.V.Malai Dt, Tamilnadu, 1987
- Board of Secondary Education with *First Class,* Cheyyar, T.V.Malai Dt, Tamilnadu, 1985.

Professional Experiences:

1. Worked as a Assistant Professor & Head of the department of Mathematics at Sri Sankara Arts and Science College, Enathur, Kanchipuram, during the period, 6.6 .2008 to 15.07. 2012, 4 years

2. Worked as a PGT Assistant, Mathematics, M. L. M. Mamalan Matriculation School, Kanchipuram, during the period, 1.1. 2005 to 30.05. 2008, 3 years

3. Worked as a PGT Assistant, Mathematics, Infant Jesus metric hr. sec.school, Kanchipuram, during the period, 30.5.2004 to 25.5.2005, 1 year

4. Worked as a Principal, Sengunthar Matriculation School, Cheyyar, during the period, 1.6.1996 to 2.5.2004, 8 years

5. At present working as an Assistant Professor of Mathematics at SCSVMV University, Kanchipuram, Tamilnadu since 18-07-2012.

No. of papers published in National/International Journals-13
No. of papers published in National/International conference proceedings-12
No. of papers presented in National/International Conference-15
No. of seminars/workshops/conferences attended-55
No. of seminars/workshops/conferences organized:2
No. of invited talks delivered: 10
No of books published-1
No. of M.Phil Scholars guided-16

Dr. A.Gayathri

Name	:	**Dr.A.GAYATHRI**	
Designation	:	Assistant Professor (Stage-I)	
Date of Joining(SCSVMV)	:	03.09.2010 (First joined – to 2013)	
		21.07.2014 (Rejoined)	
Total Teaching Experience	:	10 years	
• In SCSVMV	:	07 years	
• TNAU	:	03 years	
Specialization	:	Mathematical Physics	
Awards received	:	Silver Medalist (M.Phil - 2004)	
	:	Best Paper Award (Int.Conf. - 2017)	

7. M.Phil Guidance

  • No. of Students   :   03 (Viva Completed)

  • Area of Research   :   Mathematical Physics

8. No. of handling years

  • UG   :   10 years

  • PG   :   07 years

9. No. of Publications   :   08

10. Paper presented   :   07 all International)

11. Membership

  • The Association of Mathematics Teachers of India: Life Member

- Association of Mathematics for women   :Life Member

12.	Aadhar Number	:	434949 299354
13.	PAN Card Number	:	AXBPG3699K
14.	Permanent address	:	No.24, Arignar Anna Nagar, Rajaji Salai, Vaiyavoor Road, Kanchipuram-631 561.
15.	Mobile Number	:	91 94884 82044, 7904305001
16.	Email ID	:	ag@kanchiuniv.ac.in, gayatharun12@gmail.com

Academic Details:

➢ Completed **Ph.D** Mathematics, Sri Chandrasekherendra Saraswathi Viswa Mahavidhyalaya (SCSVMV) during **2014-2017**.[Part time]

➢ Secured **FIRST class** in **M.Phil., Mathematics,** Madurai Kamaraj University during **2003 – 2004**. [Silver medal]

➢ Secured **FIRST class** in **M.Sc., Mathematics,** Madurai Kamaraj University during 2001-2003

➢ Secured **FIRST class** in **B.Sc., Mathematics,** Madurai Kamaraj University during 1998-2001.

Academic Experience:

• Working as Assistant Professor of Mathematics at Sri Chandrasekharendra Saraswathi Viswa Mahavidyalaya [SCSVMV], Enathur, Kanchipuram since **July 2014**.

• Worked as **Assistant Professor of Mathematics** at Ramco Institute of Technology, Rajapalayam, from **July 2013 to Dec 2013**.

• Worked as **Assistant Professor in Mathematics** at Sri Chandrasekharendra Saraswathi Viswa Mahavidyalaya [SCSVMV], Enathur, Kanchipuram, from **Sep 2010 to May 2013**.

• Worked as Senior Research Fellow in **Govt. Agricultural College and Research Institute**, Killikulam, Vallanad – 628 252, Tuticorin District under Tamil Nadu Agricultural University from **Sep 2005 to Apr 2008**.

Manuals Prepared:

- ➢ Mathematics for Agricultural Sciences
- ➢ Introduction to Computer Technology
- ➢ Computer Applications
- ➢ Communications and Information Technology
- ➢ Agricultural Statistics
- ➢ Workshop Manual – MegaStat
- ➢ Lab Manual –Excel Solver

No. of papers published in National/International Journals-8
No. of papers published in National/International conference proceedings-
No. of papers presented in National/International Conference-9
No. of seminars/workshops/conferences attended- 39
No. of seminars/workshops/conferences organized:2
No. of programs acted as resource person: 3

Mrs. B.Amudha

Teaching Assistant of Mathematics
SCSVMV University,
Enathur, Kanchipuram- 631 501
9524867776, amudhamaths@gmail.com

Educational Qualifications:

- M.Phil in Mathematics with First Class, SCSVMV University,Enathur, 2012.
- M.Sc in Mathematics with First Class, Ramanujam Institute for Avanced Study in Mathematics, Madras University, Chennai, 2010.
- B.Ed in Mathematics with First Class, Cholan College of Education,Madras University, Kancheepuram, 2008.
- B.Sc in Mathematics with First Class, Pachaiyappa's College for women, Madras University, Kancheepuram, 2007.

Professional Experiences:

- At present working as an Teaching Assistant of Mathematics at SCSVMV University, Kancheepuram, since AUG 2017

- Worked as Assistant Professor of Mathematics in Sri Sankara Arts and Science College, Enathur, Kanchipuram since NOV 2012 to JULY 2016.

- Worked as Maths Teacher in SSKV Matriculation Hr. Sec School, Kanchipuram since JUNE 2010 to NOV 2012

- No. of papers presented in National/International Conference-01
- No. of seminars/workshops/conferences attended-02

Mr.K.SARAVANAN

Teaching Assistant of Mathematics
SCSVMV,
Enathur, Kanchipuram- 631 501
9943789515, kadirvelsaravanan@gmail.com

Educational Qualifications:

- M.Phil in mathematics with second class, RKM Vivekananda college, University of Madras.
- M.Sc in Mathematics with First Class, RIASM, University of Madras.
- B.Sc in Mathematics with Second Class, Periyar Arts college, University of Madras.

Professional Experiences:

- Working as Teaching Assistant of Mathematics at SCSVMV U, Kanchipuram since August 2017
- Worked as Asst. Professor in Mathematics Department from JULY 2012 to July 2017, at Pallava Raja College of Engineering, Near Kanchipuram
- Worked as a Lecturer in Mathematics Department from NOV 2011 to MAY 2012, at The New Royal College of Engineering andTechnogoly, Near Mamallapuram.
- Worked as a Lecturer in Mathematics Department from OCT 2007 to NOV 2011, at Arulmigu Meenakshi Amman College of Engineering, Near Kancheepuram.
- Worked as a Lecturer - Mathematics Department from NOV 2006 to OCT 2007 at Thiruvalluvar College of Engineering and Technology, Near Vandavasi,

No. of papers presented in National/International Conference-1
No. of seminars/workshops/conferences attended-3

R.Kalaiarasi

Teaching Assistant of Mathematics
SCSVMV,
Enathur, Kanchipuram- 631 501
9788657841, kalaibhuvi93@gmail.com

Educational Qualifications:

- ➤ M.Sc in Mathematics with First Class, Pachaiyappa's college for men, University of Madras
- ➤ B.Ed with First Class with Distinction , SCSVMV
- ➤ B.Sc in Mathematics with First Class with Exemplary, Sri Sankara Arts and Science college, University of Madras

Professional Experiences:

- ➤ Working as Teaching Assistant of Mathematics at SCSVMV U, Kanchipuram since August 2017

No. of papers presented in National/International Conference-1
No. of seminars/workshops/conferences attended-2

Mrs.A.Shakila

Teaching Assistant of Mathematics
SCSVMV,
Enathur, Kanchipuram- 631 501

Educational Qualifications:

- ➢ M.Phil in Mathematics with First Class, SCSVMV University,Enathur, 2012.
- ➢ M.Sc in Mathematics with First Class, Pachayappa's Collage For Women. Madras University, Kanchipuram. 2009
- ➢ B.Sc., in Mathematics with third Class,Pachayappa's College For Women ,Madras University, Kancheepuram, 1999..

Professional Experience:

- At present working as an Teaching Assistant of Mathematics at SCSVMV University, Kancheepuram, since AUG 2017

- Worked as Assistant Professor of Mathematics in Sri Sankara Arts and Science College, Enathur, Kanchipuram since AUG 2012 to FEB 2017..

- Worked as Maths Teacher in Sundar Mission Matriculation Hr. Sec School, Kanchipuram since JUNE 2008 to Mar 2009.

- No. of papers presented in National/International Conference-1
- No. of seminars/workshops/conferences attended-11

Remedial Measures

Staff Members often identify the students who are having less knowledge in Mathematics and scored very less marks in unit test and internal test. They identify respective students from each class frequently. After identification of those students, they were called to cabins for discussion regarding their poor performance. After discussion with each and every student in person, the remedial measure that they have to carry out for the improvement of their marks in upcoming test and external examinations, as well as how to improve the basic level of knowledge in mathematics is clearly pictured out.

First, the students are asked to study some basic level books on the respective topics, so that they feel free and come forward to study with interest. Also hand-outs are given to students for better understanding. Finally, the students are insisted to go through their topic thoroughly and come back to the teachers in case of any difficulty, so that the students can get clear cut explanations on the respective topics. Later, enough number of problems in all chapters are given for practice.

Apart from this, some general remedial measures as mentioned below is also followed:

- ❖ Important questions expected at the end-semester examination are identified and given to students.
- ❖ Previous year question papers and solutions, if needed are given to them.
- ❖ Assignments are given on important topics.

Department of Mathematics

Date: 24-10-2017

Cabin Hours Schedule

Time: 5.00p.m-6.00pm

Date	Faculty	Signature
23-10-2017	Mrs.D.Vijayalakshmi Dr. A.Dhanalakshmi	
24-10-2017	Mrs. N. Saradha Mr.V.K.Radhakrishnan	
25-10-2017	Mr.P.Balaji Mrs. K. Bharathi	
26-10-2017	Dr.E.Geetha Dr. A.Gayathri	
27-10-2017	Mrs.R.Mageswari Dr.T.N.Kavitha	
30-10-2017	Mr.P.Nagarajan Dr.J.Sengalmala Selvi	
31-10-2017	Mrs.K.Pramila Dr.S.Vijayabarathi	
01-11-2017	Dr.K.Srinivasa Rao Dr.R.Malathi	
02-11-2017	Mrs.D.Vijayalakshmi Dr. A.Dhanalakshmi	
03-11-2017	Mrs. N. Saradha Mr.V.K.Radhakrishnan	
06-11-2017	Dr.R.Malathi Mrs. K. Bharathi	
07-11-2017	Dr.E.Geetha Dr. A.Gayathri	
08-11-2017	Mrs.R.Mageswari Dr.T.N.Kavitha	
09-11-2017	Mr.P.Nagarajan Dr.J.Sengalmala Selvi	
10-11-2017	Mrs.K.Pramila Dr.S.Vijayabarathi	

K. Srinivasa N
Professor and Head
Department of Mathematics

Sri Chandrasekharendra Saraswathi Viswa Mahavidyalaya
SCSVMV

(University U/S 3 of UGC Act 1956)

Accredited with "A" Grade by NAAC

Enathur, Kanchipuram – 631 561

Date.12.04.2018

To

All Head of the Departments

SCSVMV

The Department of Mathematics is planning to organize cabin hours for those who are having arrears in Mathematics papers as a part of remedial coaching from 16.04.2018 help the students clearing their backlogs. During the time of cabin hours faculty members will be available in their respective cabins at the department premises.

Cabin hours : 5.00.p.m-6p.m. (Monday – Friday)

K. Srinivasa Rao

(Dr. K. Srinivasa Rao)

Professor &Head
Department of Mathematics

Copy to

      The Vice-Chancellor
      Registrar
      Dean- Faculty of Science
      Dean -Engineering & Technology

Sri Chandrasekharendra Saraswathi Viswa Mahavidyalaya
SCSVMV

(University U/S 3 of UGC Act 1956)

Accredited with "A" Grade by NAAC

Enathur, Kanchipuram – 631 561

Department of Mathematics

Date12.04.18

Cabin Hours Schedule

Date	Faculty	Signature
16.04.2018	Mrs D. Vijayalakshmi Dr.A. Dhanalakshmi	
17.04.2018	Dr. N. Saradha Mrs. A. Shakila	
18.04.2018	Mr. P. Balaji Mrs. K. Bharathi	
19.04.2018	Dr. E.Geetha Mr. V.K. Radhakrishnan	
20.04.2018	Dr. A. Gayathri Mrs. B. Amudha	
23.04.2018	Mrs. R. Mageswari Dr. T.N. Kavitha	
24.04.2018	Dr. P. Nagarajan Dr.J. Sengamalaselvi	
25.04.2018	Mrs. K. Pramila Dr. S. Vijaya Barathi	
26.04.2018	Dr. R. Malathi Ms. R. Kalayarasi	
27.04.2018	Dr. K. Srinivasa Rao Mr. K. Saravanan	

Dr. K. Srinivasa Rao)

Professor &Head
Department of Mathematics

Equipment List 2017-2018

Sl.No.	Item Name	Quantity
1.	Computers - monitors	13
2.	Computers – CPU	13
3.	Computers - mouse	13
4.	Computers - keyboard	13
5.	Printers	5
6.	Staff table	25
7.	S type chair	11
8.	Computer table	6
9.	Cushion rolling chair	8
10.	Plastic chair	18
11.	Steel rack	7
12.	Almirah small	11
13.	Almirah big	3
14.	Almirah with glass	8
15.	Steel rack big	1
16.	Two seater	15
17.	Small steel stool	6
18.	Big steel stool	1
19.	Wooden stool	1
20.	Notice board	1
21.	whiteboard	1
22.	Name board	1
23.	Key box	1
24.	Ceiling fan	24
25.	Wall clocks	1
26.	Tube light fittings	16
27.	Telephone	2
28.	LCD Projector	2
29.	Dustbins	3
30.	Flask	4
31.	Water cooler	1

List of Library Books

Dept No	Accn.No	Title	Author
		General	
1	55205	Modern Methods Of Teaching Mathematics	Shalini Wadhwa
2	62624	A Text Book Of Practical Mathematics.	
3	62995	Problem Solving Strategies	Engel
4	sp	System Programming And Operating System	D.M.Dhamdhere
5	64358	A Primer Of Mathematical Writing	Steven G Krantz
6	64906	Standard Mathematical Tables And Formulae	Daniel Zwillinger
7	65094	Graded Exercise in Pure Mathematics For AS And A2	Barrie Hunt
8	65202	Mathematical Conservations	Wilson Gray
9	68472	Teaching And Assessing Skill In Mathematics	Audrey Simpson
10	66973	How To Solve It	G. Polya
11	67705	What is Mathematics?	Courant/Robbins/Stewart
12	68417	The Philosophy Of Mathematics Today	Schirn
13	68418	Story of Number	Eli Maor
14	68420	Fun and Fundamental Of Mathematics	Jayant V.Narlikar/ Mangala Narlikar
15	68423	Adventures in Problem Solving	Shailesu Shirali
16	68424	Applicable Mathematics at The Golden Age	Misra
17	68939	All The Mathematics You Missed	Garrity
18	68968	Hand Book of Mathematics.	In Bronshtein &Co
19	69689	Think Without Ink	Venkataraman
20	69708	Test of Reasoning	Edgar Thorte
21	69710	General Intelligence For Students	Dr.B.James
22	69725	Quick Arithmetic	Asish Agarwal
23	69764	GRE Math Subject Test	Steven A Leduc
24	69827	Quantitative Aptitude	Agarwal
25	69830	Math For Smart Test Takers	Mark Alan,Stewart

26	78265	Vedic Mathematics	Jagathkuruswamy Sri/Bharathikrishna/ Tirthagai Maharaja
27	95684	The Mathematical Century	Piergiorgio Odifreddi
28	95685	Mathematical Olympiad Challenges	Titu Andreescu & Razvan Gelca
29	95698	Mathematics in Nature	John A. Adam
30	96097	Dictionary Of Mathematics	Mcgraw-Hill
31	99072	Mathematical Control Theory	Jerzy/ Zabczyk
32	99194	The World Of Mathematics 1	James Newman
33	99195	The World Of Mathematics2	James Newman
34	99196	The World Of Mathematics3	James Newman
35	99197	The World Of Mathematics4	Newman
36	sp	Practice Of Bakthi Yoga	Sri Sivananda Saraswathi
37	101408	Technical Analysis And Applications	Stanley
38	69720	Objective General Science	2001 Edition
39	sp	Vedanta in Daily Life	Sri Sivananda Saraswathi
40	111087	Stories About Maxima & Minima	V.M.Tikhomiror
41	112266	A First Course in Finite Elements Methods	Daryl. L. Logan
42	sp	Brahma Sutras	Sri Sivananda Saraswathi
43	sp	System Software	Leland. L.Beck
44	119074	Vedic Mathematics For School Book - 2	Glover
45	119132	A Problem Book In Mathematics	Dr.Sk.Goyal
46	119155	Dictionary Of Mathematics	
		Fuzzy	
	Accn.No	Title	Author
47	66593	Fuzzy Logic With Engineering Application	Timothy J Ross
48	68460	Fuzzy Topology	N.Pazaniyappan
49	100084	Fuzzy Logic	Timothy J.Ross
50	104732	Fuzzy Sets & Fuzzy Logic	Klir/Yuan
51	104782	Fuzzy Logic	Timothy J.Ross
52	106251	Fuzzy Sets & Fuzzy Logic	Klir/Yuan

		Algebra	
55	25455	Modern Algebra	A.R.Vasantha
56	54744	Matrix Theory	David W.Lewis
57	54991	Group Theory	M.Suzuki
58	58865	Applied Abstract Algebra	Rudolf Lidl
59	61872	Exercises in Classical Ring Theory	Lam
60	61874	Algebra	Serge Lang
61	62896	An Introduction To Ring Theory	Cohn
62	64305	The First Course in Non Commutative Rings	Lam
63	64308	Matrix Analysis	Rajendra Bhatia
64	65417	Jordon Algebra and Algebric Graphs	Springer
65	67960	Local Algebra	Serre
66	67961	Algebric Curves, Algebric Manifolds & Schemes	Danilov /Shokurov
67	67962	Glimpses of Algebra And Geometry	Toth
68	68436	Linear Algebra	Hoffman/Kunze
69	68437	Linear Algebra	Kumaresan
70	68450	A First Course In Abstract Algebra	Fraleign
71	68455	Topics In Products of Random Matrices	Mukherjea
72	68941	Basic Abstract Algebra	P.B.Bhattacharya/S.K.Jain/ S.R.Nagpaul
73	68942	Basic Algebra	Cohn
74	69349	Commutative Algebra	Zariski,Samuvel
75	96082	Linear Algebra	Friedberg/Arnold J.Insel
76	96083	Linear Algebra	Kwak/Hong
77	99082	Matrix Method An Introduction	Richard Bronson
78	99084	Modern Algebra -An Introduction	Durbin
79	104719	Algebra	Artin
80	104734	Matrix and Linear Algebra	Datta
81	104739	Topics In Algebra	Herstein
82	104779	Field Theory	Luthar Passi
83	104805	Introduction to Rings & Modulus	Musili
84	104807	A First Course in Abstract Algebra	Fraleigh

85	109710	Modern Algebra	Surjeet Singh/ Qazi Zameeruddin /
86		Modern Algebra	Surjeet Singh
87		Algebra	
		Artificial Intelligence	
88	108994	Artificial Intelligence	Nilssan
89	101042	Introduction To Artificial Neural System	Zurada
90	109000	Fundamentals of Artificial Neural Networks	Hassoun
91	112913	Artificial Intelligence	Stuart Russel/ eter Norving
92	112959	Artificial Intelligence	Elaine Rich,Kevin Knight,Shivashankar B Nair
		Automata	
93	64817	An Introduction To Formal Languages &Automata	Peter Linz
94	65079	Automata Theory And Its Application	Bakhadyr Khoussainov/ Anil Nerode
95	95368	Automata Theory	Siman
96	95725	Automata And Language Theory And Application.	Alexander Meduna
97	95759	Elements Of Theory Of Computation	Harry R.Lewis Christos H.Papid
98	95907	Introduction To Languages and the Theory Of Computation	John C.Martine
99	99000	An Introduction To Formal Languages &Automata	Peter Linz
100	99300	Introduction To Automata Theory And Languages Computation-3	Hotcroft/Motwani/Ullman
101	104762	Introduction To Automata Theory Language & Computation.	John F.Hopcroft & Co
102	104762	Introduction To Automata Theory And Languages Computation-3	Hotcroft/Motwani/Ullman
103	104803	Introduction To Automata Theory And	John E Hopcraft/ Jeffery D Ullman

		Languages Computation	
104	106240	Automata Theory ,Languages And Computation	Hopcroft,Motvani, Ullman
105	106288	Theory Of Computer Science, Automata Languages & Computation	Mishra/Chandrasekaran
106	119033	Theory Of Computations	G.Dhanalakshmi/ D.Lakshmi
107	119084	Introduction To Automata and Compiler Design	Dasaradh Ramaiah
108	120188	Introduction To Languages And The Theory Of Computation	John C.Martine
		MATLAB	
112	1	Signal Processing Toolbox	
113	1	Simulink	
114	1	Fuzzy Logic Toolbox	
115	40285	Mastering Matlab	Hanselman/Littlefield
116	40285	Kalman Filtering	Grewal And Andrews
117	65034	Kalman Filtering Theory & Practice Using Matlab	Mohinder S.Grewal
118	95442	Matlab And Introduction To Applications	Gilate
119	99081	Matlab Programming.	
120	101408	Technical Analysis & Application With Matlab	
121	110788	Matlab Demystified	K.K.Sharma
122	111283	Practical Matlab Basics For Engineers	Misza Kalechman
123	111284	Practical Matlab Applications For Engineers	Kalechman
124	113023	Numerical Technique Lab:Matlab Based Experiments	K.K.Mishra
125	1, 2	Matlab	
126		Getting Starting With Matlab-5	Rudra Pratap
		Complex	
127	7240	Foundations of Complex Analysis	S.Ponnusamy
128	62871	A Panorama Harmonic Analysis	Steven G Krantz
129	66984	An Imaginary Table:	J.Nahin

		The Story Of Root Of -1	
130	68419	Introduction To Analytic Theory	Apostol
131	68451	Complex Variables	Mark.J.Ablowitz Athanassios
132	68453	Complex Analysis	V.Karunakaran
133	68454	Complex Analysis	V.Karunakaran
134	68457	Functions Of One Complex Variable	John B.Conway
135	68458	Functions Of One Complex Variable	John B.Conway
136	69345	Classical Topics In Complex Function Theory	Reinhold Remmort
137	69351	Harmonic Analysis & Application	John .J.Bnedetto
138	77235	Theory Of Function.	Konrad Kropp
139	95741	Complex Variables &Applications	James Ward Brown V. Churchill
140	99151	Real And Complex Analysis	Rudin
141	102133	Complex Analysis	John.H.Mathews/ Russel.W.Howell
142	102138	Complex Analysis.	John H.Mathews
143	104758	Complex Analysis	S.Arumugam
144	104804	An Introduction To Differentiable Manifolds And Riemann Geometry	William.M.Boothby
145	104806	Introduction To Analytic Theory	Apostol
146	111083	Problems in Real & Complex Analysis	Bernard R.Gelbaum
		Discrete	
149	55705	Discrete Mathematical Structure With Application To C.S	Tremblay/Manohar
150	54725	Applied Combinatorics	Alan Tucker
151	54987	Discrete Mathematics With Applications	S.Epp
152	54995	Algorithms And Classification In Combinatorial Group Theory	Baumslag/Miller
153	62539	Discrete Mathematics	B.S.Vastaa
154	64311	Discrete Algorithmic Mathematics	Stephen B.Maurer Antony
155	64311	Discrete Algorithmic and Mathematics 2	Stephen B.Maurer Anthony Ralston
156	64315	Introduction to	Larry J.Gerstein

		Mathematical Structures & Proofes	
157	65759	Discrete Mathematics.	V.Sunderesan
158	66304	A Course In Combinatorics	Vanliut And Wilson
159	66419	Applied Discrete Structures For Computer Science	Alan Doerr/Keneth Levasseur
160	67278	Discrete Mathematics	Lovasz/ Pelikan/ Vesztergombi
161	68430	Discrete Mathematics	Iyengar
162	68442	Discrete And Combinatorial Mathematics	Ralph P.Grimaldi
163	68467	Combinatorial Optimization	MM.Shikare/Bn Waphare
164	69309	Discrete Mathematics For Computer Scientists	Truss
165	99047	Discrete Mathematics	Johnson Baugh
166	99051	Discrete Mathematical Structure	Kolman/Busby/ Ross/Rehman
167	99304	Introduction To Logic	Copi/Cohean
168	100534	Introduction To Logic	Copi/Cohean
169	104818	Discrete Maths	Kolmann Bushy Rose
170	106615	Combinatorics & Graph Theory	Harris.Hirst Mossinghofl
171	119091	Discrete Mathematics	Chakraborty/ Sarkar
172	119102	Discrete Mathematics	Balaji
173	119123	Mathematical Foundation Of Computer Science	Shahuaz Bathul
174	120208	Discrete Mathematics	Babu Ram
177		2000 Solved Problems In Discrete Mathematics	Schum
		Engineering Mathematics	
178	40739	Engineering Maths-1	Kandasamy, Thilagavathy
179	40813	Engineering Maths-2	Kandasamy
180	55519	Engineering Maths	M.K.Venkatraman
181	57261	Engineering Maths-3	Kandasamy,Thilagavathy
182	58294	Mathematical Methods	Mukhopadhyay
183	65826	Engineering Maths-4	T.Veerarajan
184	68445	Engineering Mathematics	V.Sundaram/ Balasubramaniyam/ Lakshmi Narayanan
185	69346	Algorithms For Discrete Fourier Transform &	Richard Tolimien/ Myoung Anchaolu

		Convolution-2	
186	95713	Applied Mathematical Methods	Dasgupta
187	97914	Engineering Maths	B.S.Grewal
188	101656	An Introduction To Laplace Transform & Fourier Series	P.P.G.Dyke
189	101672	Difference Equation	Walter.G.Kelley
190	101714	Engineering Maths-3	Veerarajan
191	104742	Engineering Maths-3	T.Veerarajan
192	104788	Engineering Mathematics	SS.Sastri
193	106232	Engineering Maths	S.S.Sastry
194	106249	Engineering Mathematics-1 Year	Veerarajan
195	110989	Signal Systems And Transforms	Philips/Parr/Riskil
196	111164	Mathematical Methods	G.Sankar Rao E.Kesava Reddy
197	119108	Engineering Mathematics 2	Srivastava
198	119115	Engineering Mathematics 4	Mohan / Phlip/ Jacob/ Shetty
199	119116	Engineering Mathematics 2	Chandra Mohan/ Varghese/Philip
200	119129	Transforms & PDE	A.Singaravelu
201	119156	Transforms & PDE	G.Balaji
206	sc1	A Text Book Of Engg Maths	N.P.Bali Manish Goyal
207	119153	Business Mathematics	D.R.Aggarwal
208	Specimen copy	Engineering Mathematics	Kandasamy Thilakavathy And Gunavathy
209	Specimen copy	Engineering Mathematics	S.Sankarappan & S.Kalavathy
210	Specimen copy	Higher Engineering Mathematics	B.S. Grewal
212		Engineering Mathematics.	S.S.Sastry
213	Specimen copy	Engineering Mathematics	Rajkumar Roy Chowdry
214		Engineering Mathematics	V.Sundaram
215		Engineering Maths -4 Sem	A.Singaravelu
216		Engineering Maths	VEERARAJAN
217		Engineering Maths	Veerarajan
		Modelling	
218	53525	An Introduction To	Fowkes Maholy

		Mathematical Modelling	
219	54997	Curve And Surface In Geometric Modelling	Galleir
220	62866	Nature Of Mathematical Modelling	Neil Gershenfeld
221	64313	Elementary Mathematical Model	Kalmal
222	96015	Mathematical Modelling	J.N.Kapoor
223	99074	Mathematical Modelling	Bimal K.Mishra
224	99284	Mathematical Modelling	Edward.S.And Hamsan
225	105715	Theory Of Modelling And Simulation	Zeigler/ Praehofer/Kim
		Graph Theory	
226	64321	Random Graphs	Bollobas
227	64315	Introduction Mathematical Structure And Graph	Gerstein
228	65080	Algebraic Graph Theory	Godsil/Royle
229	65088	Digraphs Theory Algorithms And Applications	Jorgen Bang/Jensen
230	65427	Graph Theory & Its Application.	Jonathan Gross, Jay Yellen
231	65444	Pristine Transfinite Graphs And Permissive Electrical Netwoks	Zemanian
232	65526	Introduction To Graph Theory.	Wilson
233	65771	Graph Theory	Narasingh Deo
234	68415	Graphs Combinatorics,Algorithms And Applications	S.Arumugam/B.D.Acharya /S.B.Rao
235	68440	Graph Theory and Its Applications	G.K.Ranganath
236	68462	Graph Theory and Applications	R.Balakrishnan/R.J.Wilson /G.Sethuraman
237	68463	Graph Theory	Harary
238	68464	Graph Theory.	Harary
239	95679	Graph Theory	Reinhard Diestel
240	99296	Introduction To Graph Theory	Robin J.Wilson
		Mechanics	
242	10092	Classical Mechanics	Goldstein
243	53519	An Introduction To The Mathematical Theory Of Havier-Strokes Equations	Galdi

244	68421	Tensor Calculus	De/Shaikh/Sengupta
245	95376	Classical Mechanics	Srinivasa Rao
246	104825	Tensor Calculus	David Kay
247	107562	Introduction To Classical Mechanics	David Morin
248	110965	Classical Mechanics	Goldstein Pook Sofko
		Neural	
249	110968	Neural Networks Using Matlab	S.N.Sivanandam/S.Sumathi /S.N.Deepa
250	103477	Neural Networks	Sathish Kumar
251	112367	Introduction To Neural Networks , Fuzzy Logic And Genitic Algorithm	Sudharsan K. Valluru/ Nageshwara Rao
		Numerical	
252	61869	Numerical Solution Of P.D.E	Smith
253	62518	Applied Numerical Analysis	Gerald/ Wheatley
254	66745	Block Error - Correcting Codes	Xambo-Descampes
255	68426	Practical Numerical Anaysis Using MS-Excel	Nandy
256	68427	Numerical Methods For Engineers And Scientists	J.N.Sharma
257	68470	Fundamentals Of Approximation Theory	Mhaskar/Pai
258	68989	Rational Points On Elliptic Curves	Silverman/Tate
259	69348	The Graduates Students Guide to Numerical Analysis'98	Ainsworth/Levesley/ Marletta
260	69352	Conservation Finite Difference Methods On General Grids	Shashkor
261	95719	Applied Numerical Methods Using Mat Lab	Yang/Cao/Chung/Morris
262	96433	Applied Numerical Analysis	Gerald/ Wheatley
263	97049	Theory And Application Of Numerical Analysis	Phillips And Taylor
264	99006	Applied Numerical Methods With Matlab	Chapra
265	99109	Numerical Analysis	G.Shankar Rao
266	99255	Error Correction And Coding	Todd.K.Moon
267	99927	Applied Numerical Methods Using Math Lab	Yang/Cao/Chung/Morris

268	104757	Introductory Methods Of Numerical Analysis	S.S.Sastry
269	104775	Numerical Methods	T.Veerarajan
270	106262	Introductory Methods Of Numerical Analysis	S.S.Sastry
271	106267	Numerical Methods	Balaguruswamy
272	119131	A Text Book Of Statistical And Numerical Methods	
273	119135	Numerical Analysis	Francis Scheid
285	Specimen copy	Numerical Methods For Science & Engg	Radha Kanka Sarkar
286	Specimen copy	Numerical Methods	M.K.Venkataraman
		Operations Research	
287	40251	Operations Research	A.Taha
288	45276	Elements Of Queueing Theory	Thomas L Saaty
289	56156	Introduction To Operation Research	Billy .E.Gillett
290	61378	Introduction To Operation Research	Hillier Lieberman
291	68425	Optimization	Joshi/Moutgalya
292	68428	Principles Of Optimization Theory	Bector/Chandra/Dutta
293	95796	Introduction To Operational Research	Kothari
294	97656	Engineering Optimization(Theory & Practice)	Singiresu S.Rao
295	98051	Operation Research	P.K.Gupta Manmohan Kanti Swarup
296	98693	Optimization Of Stochastic Systems	Masanao Aoki
297	99115	Operation Research	Taha
298	99118	Operation Research (Principles And Practice)	Ravindran/ Philips /Solberg
299	99276	Fundamentals Of Queueing Theory	Gross.Hanres
300	100528	Linear Programming	Vaserstein
301	106258	Operation Research Concepts And Cases	Frederik S. Hillier/Gerald J.Lieberman
302	106269	Operation Research	A.Taha
303	106285	Operations Research 2	Richard Bronson/Govindasamy Nodimuthu
304	119036	Operational Research	Ramanathan
305	104717	Operation Research An	H.Taha

		Intro	
306	120173	Operation Research	Naidu / Rajendra /Krishna Rao
		PDE&ODE	
308	54777	Theory Of O.D.E	Earl A.Coddington,Levinson
309	54796	Elements Of P.D.E	Ian Sneddon
310	54992	Linear Integral Equations	R Kress
311	58790	Partial Differential Equations	Jeffrey Rauch
312	58792	Applied P.D.E's	J.David Logan
313	62895	Applied Partial Differential Eqn	John Ockendon/Howison
314	68083	Theory Of O.D.E	Earl A.Coddington,Levinson
315	68950	Differential Equations	A.C.King,J.Billingham
316	68951	Differential Equations	A.C.King,J.Billingham
317	68981	Lectures On P.D.E	Vladmir Arnold
318	94837	Options, Futures And Other Derivatives	Hull
319	100871	P.D.E Methods & Applications-2	Robert C.Mcowen
320	106940	Non-Linear O.D.E	P.W.Jordon& P.Smith
321	110967	Ordinary Differential Equation	Purna Chandra Biswal
322	111045	Linear Partial Differential Eqns	Tyn Myiut-U.Debnath
323	111065	An Introduction To PDE With Matlab	Matthew P.Coleman
324	119075	Special Functions	George E.Andrews/ Askey/Roy
325	119095	Transform And PDE	T.Veerarajan
328	111254	Simulation & Interference For Stochastic D.E	M.Lacus
		Probability	
329	1558	Random Point Processer	Donald.L.Snyder
330	6052	Statistical Methods	S.P.Gupta
331	44700	Probability & Random Processes For Electrical Engg.,	Alberto Leon, Garcia
332	46969	Probability & Random Processes For Electrical Engg.,	Alberto Leon, Garcia
333	53506	Stochastic Process	J. Medhy
334	54580	Standard Probability And Statistical Table And Formulae	Daniel Zwillinger/Stephin Kokoska
335	63980	Statistical Methods	J.Medhi

336	64350	Measure Theory And Probability	A.K.Basu
337	64354	Stochastic D.E &Applications	Xuerong Mao
338	65729	Probability, Statistics & Rp	
339	65863	Introduction To Mathematical Statistics	Robert.V.Hogg/Allen .T. Craig
340	65981	First Step In Statistics	Daniel B.Wright
341	66416	Probability Statistics & Random Process	Veerarajan
342	66485	Probability Essential	Jean Jacod Philip.Protter
343	66963	Probability Random Variable & Stochastic Process	
344	66978	A Course In Distribution Theory & Application	R.S.Pathak
345	68416	Industrial Mathematics & Statistics	J.C.Misra
346	68432	Sampling Theory	S.Sampath
347	68433	Sample Survey Theory	Des Raj Promod
348	68434	Applied Multivariate Statistical Analysis	Richard A. Johnson
349	68439	Practical Mathematical Statistics	H.C.Saxena
350	68448	Probability Theory	Heinz Bauee Meinz
351	68449	Introduction To Stochastic Process	A.H.Basu
352	68452	A Course in Distribution Theory & Application	R.S.Pathak
353	68987	Probability Through Problems	Marek Capinski/Tomasz Zastawniak
354	95669	Probability Basic Stochastic Process	Zdzistar Brzezniak
355	95723	Applied Statistics And Probability For Engineers	A Douglas C. Montgomery/Gorgr C. Runger
356	96076	Introduction To Time Series And Forecasting	Brackwell/Davis
357	96123	Probability, Random Variables & Random Processes	Hwei Hsu
358	99009	Fundamental Probability & Random Processes	Oliver C.Ibe
359	99138	Probability & Statistics	Mendenhall/Beaver
360	99156	Sampling Techniques	Cochran
361	104729	Mathematical Statistics With Application	Miller Freund's
362	104760	Multivariate Analysis	Bhuyan

		and Application	
363	104793	Probability Statistics and Random Processes	T.Veerarajan
364	104799	Elementary Probability Theory	Kai Laichung
365	106247	Elementary Probability Theory With Stochastic Processes	Kai Lai Chung
366	106274	Probability And Statistical Inference	Hogg/Tanis Rao
367	106284	Probability Statistics & Random Process	Veerarajan
368	106612	Probability Random Variables And Random Signals Principles	Peyton Z Peebles
369	107933	100 Statistical Tests	Gopal.K.Kanji
370	111066	Introduction To Probability	Charles M. Grinstead/J.Maurie Snell
371	111171	Statistical Method	H.C.Taneja
372	111251	A Model Approach To Regression With R	Simon J.Sheather
373	111253	Applied Statistics	P.N.Majumdar
374	111254	Simulation &Inference For Stochastic De	Stefano M. Lacus
375	111574	Probability Statistics	Schaums
376	119109	Statistics And Numerical Methods	Singaravelu
377	119124	Probability and Random Process	S.Palaniammal
378	120204	Fundamental Probability & Random Processes	Oliver C.Ibe
379	120211	Probability Random Variable &Stochastic Process	T.Veerarajan
380	120213	An Introduction To Statistical Methods	C.Bguptha/Vijay Guptha
383	sp1	Probability , Statistics And Queuing Theory	Kandasamy, Gunavaathy,Kalavathy
384	99137	Probability And Measure Theory	Robert B.Ash
385		Basic Stochastic Process	Tomasz
386		Probability Theory	Meinz
387	111756	Probability&Statistics	Kishore Trivedi
		Real Analysis	
388	59340	Methods Of Real Analysis	Richard R.Goldberg
389	59343	Methods Of Real Analysis	Richard R.Goldberg

390	61849	Principles Of Real Analysis	D.Aliprantis/Owen Burkinshaw
391	64316	A Course On Borel Sets	S.M Srivastava
392	68444	Real Analysis	H.L Royden
393	68459	An Introduction To Measures And Integration	Inder K Rana
394	68465	Mathematical Analysis	Apostol
395	68466	Mathematical Analysis & Application	S.Nandha/G.P.Rajasekar
396	68468	Measure Theory And Integration	G. Debarra
397	68957	A First Course In Real Analysis	M.H.Protter C.B.Morrey
398	68971	Mathematical Analysis	Jonathan Lewin
399	69347	Geometric Construction	Geroge E Martin
400	95691	Real Analysis	N.L Carothers
401	104721	Mathematical Analysis	Sathish Shirali/Vasudeva
402	104802	Mathematical Analysis	Apostol
403	110960	Mathematical Analysis	Somasundaram B.Chaudary
404	111073	A Modern Theory Of Integration	Robert G. Bartle
		Topology	
406	54795	Topology And Modern Analysis	Simons
407	54994	Basic Topology	Amstrong
408	65212	Operator Theory And Analysis	H.Bart I.Gohberg
409	65558	Linear Functional Analysis	Rynne And Youngson
410	66307	Beginning Functional Analysis	Karen Saxe
411	66969	Introductory Functional Analysis With Application	Kregszig
412	68082	Functional Analysis	Thambavnair
413	68443	Text Book Of Functional Analysis	V.K.Krishnan
414	68456	Foundations Of Functional Analysis	Ponnusamy
415	68469	Functional Analysis	Limaye
416	68972	An Introduction To Algebraic Topology	Joseph J.Rofman
417	68977	Introductory Functional Analysis	Reddy
418	69350	Robust Control Theory In Hibert Space	Feintuch
419	69353	Algebraic Topology: An Introduction	Massey

420	95670	Basic Topology	Amstrong
421	99266	Functional Analysis	Friges Riesz Bela SZ.Nagy
422	104722	A First Course In Functional Analysis	Somasundaram
423	104726	Topology	Jaraes.R Mumres
424	104787	Functional Analysis	Thambavnair
425	104800	Topology Of Metric Space	S.Kumaresan
426	108213	Foundation Of Topology	Patty
427	111081	Principles Of Functional Analysis	Martin Schechter
		Vector Algebra	
428	119144	Vector Algebra And Solid Analytic Geomentry	Kantikumar/Depak Kumar
429	68441	Vector Analysis	Shandhi Narayanan/R.K. Mittal
		Wavelet	
430	64366	An Introduction To Wavelets Through Linear Algebra	Micheal. W. Frazier
431	65553	An Introduction To Wavelets Through Linear Algebra	Micheal. W. Frazier
432	68471	Wavelets And Allied Topics	Jain,Krishna,Mhaskar,Prestin,Singh
433	95677	Fourier And Wavelet Analysis	Bachman/ Narich/ Beckenstien
434	95692	Ripples In Mathematics	A.Jensen A.Lacour Harbo
435	95694	Wavelets -A Primer	Christian Blatter
436	95696	Wavelets Theory Applications Implementation	M.V.Altaisky
437	95790	Insight Into Wavelets From Theory To Practice	Soman/Ramachandran
438	99152	Real Analysis With an Introduction To Wavelets And Applications	Hong.Wang.Gardner
439	101643	Fourier And Wavelet Analysis	Bachman/ Narich/ Beckenstien
		Number Theory	
441	63961	A Course in Number Theory And Cryptography	Neal Koblitz
442	64306	Algebraic Number Theory	Nevkirch
443	65084	Number Theory In	Rosen

		Function Fields	
444	67280	Elementary Number Theory	Davidoff/Sarnak
445	68419	Introduction To Analytic Number Theory	Tom M.Apostol
446	68422	First Step in Number Theory	Shaitesh Shirali
447	68447	A Primer on Number Sequence	Shaitesh Shirali
448	68472	Teaching And Assessing Skill in Mathematics	Simpson
449	104806	Introduction To Analytic Number Theory	Tom M.Apostol
		Calculus	
450	10392	Differential Equations & Calculus of Variation	L .Elsgolts
451	53352	Solution To Problems in Calculus Of One Variables	Vadlamani Shyam/I.A.Maron
452	66743	Calculus	Michael Comenetz
453	68435	Integral Calculus	Shanthi Narayan / P.K Mittal
454	68474	Calculus For Scientists &Engineers	K.D.Joshi
455	95734	A Course in Calculus And Real Analysis	Ghorpade/Limaye
456	104783	Calculus of Variations With Applications	A.S.Gupta
457	106242	Calculus of Variations With Applications	A.S.Gupta
458	109699	Calculus	Apostol
459	110959	Calculus With Maple Labs	Krawcew/Rai
		Differential Geometry	
463	68431	Differential Geomentry	Somasundaram
464	106244	Differential Geomentry	Somasundaram
		Finance	
465	106719	The Mathematics on Financial Derivatives	Paul Wilmott/Sam Howison
466	106720	The Concepts &Practice Of Mathematical Finance	Mark S.Joshi
467	106964	Computational and Finance	Levy
		Cryptography	

468	99265	Foundation of Cryptography	Odcd Goldreich
469	104725	Applied Cryptography	Schneier
470	106234	Applied Cryptography	Schneier
		Applications	
471	66486	Berkley Problems In Mathematics	Desouza
472	69365	Mathematical Methods For Physicists	Arfken/Weber
473	97193	SPSS For Windows Step By Step	Geroge Mallery
474	104884	Mathematical Physics	Joglekar
475	111252	Introduction To Mathematical Systems Theory	C.Heij/A.Ran/F.Van Schagen
476	111256	A Physicist Guide To Mathematician	Tam
477	111474	Pattern Recognition & Image Analysis	Earl Gose Richard
478	113024	Methods Of Mathematical Physics Vol 2	Courant/Hillbert
479	127752	Arithmetic	Dr R.S.Aggarwal
481	106293	Topics In Algebra	I.N.Herstein
483	95781	Higher Algebra	H.Shall And S.R.Knight
487	111091	A Text Book On Automata Theory	P.K.Srimani
488	110968	Matlab	
489	52929	Mastering Matlab	
492	68429	Discrete Mathematics	Rajendra Akerker Rupali Akerker
494	Specimen copy	Engineering Mathematics Vol 1	Kandasamy And Co
497	106256	Graph Theory	NARASINGH DEO
498	122984	Numerical Methods	Kandasamy And Co
499	54861	Numerical Methods For Scientific Computation	MK.Jain And S.R.K. Iyengar
500	45962	ODE And Their Solutions	George M.Murphy
503	110972	Probability & Random Processes	Scott L. Miller & Co
507	63215	Applied Statistics And Probability	George C. Runger
509	Specimen copy	Probability Statistics & Queuing Theory	Kandasamy&Co
510	61846	Schaum's Outlines - Statistics	Murray R.Spiegel
514	64322	Number Theory For Computing	Song Y. Yan

515	119149	Ancillary Mathematics Ii	Manicavasagam Pillay& Co
521	101842	Research Methodology	R.Pannerselvam
522	Specimen copy	Basic Mathematics For Engineering	S.Arumugam & Co
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530	Specimen copy	Brilliant A tutorials ELITE	Trigonomentry
531	Specimen copy	Brilliant A tutorials ELITE	Point, Stright Line, Circule
532	Specimen copy	Brilliant A tutorials ELITE	Ellipse, Hyperbola
533	Specimen copy	Brilliant At utorials ELITE	Binomial Theorm, Permutation& Combination
534	Specimen copy	Brilliant A tutorials ELITE	Matrix, Determinant
535	Specimen copy	Brilliant At utorials ELITE	Functional Limits
536	Specimen copy	Brilliant A tutorials ELITE	Integration
537	Specimen copy	Brilliant A tutorials ELITE	Probability
538	Dept copy	Numerical Methods	A.Singaravelu
539	Dept copy	Algebra Vol 1	T.K.Manicavachagam And Co
540	Dept copy	Engineering Mathematics IV Sem QP	A.Singaravelu
541	Dept copy	Computer Oriented Statistical Method	Shanti Sophia Bharathi
542	Specimen copy	Engineering Mathematics Vol 1	Kandasamy And Co
543	Specimen copy	Engineering Mathematics Vol 1	Kandasamy And Co
544	Dept copy	Time Series	Aptitude
545	Dept copy	Engineering Mathematics Vol 1	Kandasamy And Co
546	Dept copy	Operations Research	Taha
547	Dept copy	Discrete Mathematics	P.Geetha
548	Specimen	Transforms and Partial	Kandasamy And Co

	copy	Diff Eqn	
549	Dept copy	Engineering Mathematics Vol 1	ITL Education
550	Dept copy	Engineering Mathematics 1	K.Vairamanickam And Co
551	Dept copy	Numerical Methods	K.Subramani And A.Shantha
552	Dept copy	Engineering Mathematics Vol 2	ITL Education
553	Dept copy	Statistics And Numerical Methods	K.Subramani And A.Shantha
554	Dept copy	Ancillary Mathematics Vol 1	S.Narayanan T.K.Manickavachogam R.Hanumantha Rao
555	Dept copy	Ancillary Mathematics Vol 2	S.Narayanan T.K.Manickavachogam R.Hanumantha Rao
556	119151	Probability And Random Processes With Applications To Signal Processing	Henry Stark, John W. Woods
558	Specimen copy	Engineering Maths 1st Sem	M.K.Venkatraman
559	Specimen copy	Mathematical Analysis	Apostol
561	Specimen copy	Engineering Mathematics Vol II	Kandasamy & Co
562	Specimen copy	Discrete Mathematics - Question Bank	
563	58314	Operations Research	Kanti Swarup
564	104807	A First Course in Algebra	Fraleigh (Repeated 84)
565	Complimentary copy	Calculus Volume - 1	S.Narayanan
566	Complimentary copy	Calculus Volume - III	S.Narayanan
567	Complimentary copy	Calculus Volume - II	S.Narayanan
568	Complimentary copy	Numerical Methods - Question Bank	G. Balaji
569	Complimentary copy	Operations Research	V.K.Kapoor
570	Complimentary copy	Topogeometry	K.M.A.Kadhar Batcha
571	Complimentary copy	Mathematical Modelling	
572	Complimentary copy	A Primer For Engineering Students With Examples	K.Sivakumar Et Al
573	Complimentary copy	Mathematics For Computer Science	Albert .R. Meyer

574	Complimentary copy	UGC/CSIR/NET/SLET	Pawan Sharma & Co
575	Sp copy	Basic Mathematics For Engineering	S.Arumugam
576	Sp copy	Higher Engineering Maths	B.S.Grewal
577	Sp copy	Allied Mathematics Volume - I	Prof.P.Duraipandian
578	Sp copy	Allied Mathematics Volume - II	Prof.P.Duraipandian
579	Dept copy	Numerical Methods	Saumyen Guha
580	Dept copy	Computational Methods For Partial Differential Equations	M.K.Jain, S.R.K.Iyengar
581	Dept copy	Numerical Solution Of P.D.E	K.W.Morton, D.F.Mayers

Department Library has over all 581 books of different subjects.

Major collection of books is under the topics

- Algebra

- Operations Research

- Engineering Mathematics

- Probability and Statistics

- Numerical Methods

- General Mathematics

ODD SEMESTER (2017 – 2018)

S.No.	Dept	Year/Sem	Subject	Hours/Week
1.	Maths	M.Phil.,	Probability theory & Stochastic Process	5
2.		M.Phil.,	Advanced Applied Mathematics	5
3.		M.Phil.,	Research Methodology	5
4.		I M.Sc.,/I	Abstract Algebra	5
5.		I M.Sc.,/I	Real Analysis	5
6.		I M.Sc.,/I	Operation Research	5
7.		I M.Sc.,/I	Operation Research-Lab	5
8.		I M.Sc.,/I	Programming in C	5
9.		I M.Sc.,/I	Ancient Mathematics	2
10.		II M.Sc.,/III	Applied Mathematics	5
11.		II M.Sc.,/III	Applied Mathematics-Lab	3
12.		II M.Sc.,/III	Discrete Mathematics	5
13.		II M.Sc.,/III	Business Mathematics	5
14.		II M.Sc.,/III	Business Mathematics-Lab	3
15.		II M.Sc.,/III	Linear Algebra	5
16.		II M.Sc.,/III	Quantitative Aptitude	2
17.		I B.Sc.,/I	Calculus	5
18.		I B.Sc.,/I	Analytical Geometry & Trigonometry	5
19.		I B.Sc.,/I	Allied Statistics-I	5
20.		II B.Sc.,/III	Differential Equations and its Applications	5
21.		II B.Sc.,/III	Numerical Methods	5
22.		II B.Sc.,/III	Quantitative Aptitude	5
23.		III B.Sc.,/V	Abstract Algebra	5
24.		III B.Sc.,/V	Statics	5
25.		III B.Sc.,/V	Sequence & Series	5
26.		III B.Sc./V	Complex Analysis	5
27.		III B.Sc.,/V	Data Interpretation	1
28.	CSE	IV A/VII	Resource Management Technique	5
29.		IV B/VII	Resource Management Technique	5
30.		III- /V	Automata Theory	5
31.		II A/III	Applied Mathematics for Computer Engineers-I	5

		II B/III	Applied Mathematics for Computer Engineers-I	5
32.		II C/III	Applied Mathematics for Computer Engineers-I	5
33.		II D/III	Applied Mathematics for Computer Engineers-I	5
34.		II A/III	Applied Discrete Mathematics	5
35.		II B/III	Applied Discrete Mathematics	5
36.		II C/III	Applied Discrete Mathematics	5
37.		II D/III	Applied Discrete Mathematics	5
38.		I A/I	Basic Mathematics for Engineers I	5
39.		I B/I	Basic Mathematics for Engineers I	5
40.		I C/I	Basic Mathematics for Engineers I	5
41.		I D/I	Basic Mathematics for Engineers I	5
42.		I E/I	Basic Mathematics for Engineers I	5
43.	CSE&IT			
44.	IT	II/III	Applied Mathematics for Technology – III	5
45.		IV A/VII	Operations Research	5
46.		IV B/VII	Operations Research	5
47.		III-A/V	Applied Mathematics for Mechanical Engineers – III	5
48.		II A/III	Applied Mathematics for Mechanical Engineers – I	5
49.	MECH	II B/III	Applied Mathematics for Mechanical Engineers – I	5
50.		I A/I	Basic Mathematics for Engineers I	5
51.		I B/I	Basic Mathematics for Engineers I	5
52.		I C/I	Basic Mathematics for Engineers I	5
53.		II A/III	Applied Mathematics for Electronics Engineers-I	5
54.	ECE	II B/III	Applied Mathematics for Electronics Engineers-I	5
55.		I A/I	Basic Mathematics for Engineers I	5
56.		I B/I	Basic Mathematics for Engineers I	5

57.		I C/I	Basic Mathematics for Engineers I	5
58.		I D/I	Basic Mathematics for Engineers I	5
59.	EEE	III/V	Applied Mathematics for Electrical Engineers-III	5
60.		II/III	Applied Mathematics for Electrical Engineers-I	5
61.	EEE/EIE/ MECT	I/I	Basic Mathematics for Engineers I	5
62.	Civil	III/V	Applied Mathematics for Civil Engineers – III	5
63.		II/III	Applied Mathematics for Civil Engineers – I	5
64.		I/I	Basic Mathematics for Engineers I	5
65.	EIE/ MECHT	III/V	Applied Mathematics for Instrumentation Engineers-III/Maths-V	5
66.		II/III	Applied Mathematics for Instrumentation Engineers- -I/Maths-III	5
67.	ME(CSE)	I/I	Advanced Operations Research	5
68.	M.Tech-ECE	I	Applied Maths for Manufacturing and Design	5
69.	(ME)EEE	I/I	Advanced Applied Mathematics	5
70.	M.E-Design (MECH)	I/I	Advanced Numerical Methods	5
71.	BCA	I/I	Mathematical Foundations of CS	5
72.	B.Sc.,(CS)	I/I	Mathematical Foundations of CS	5
73.	Physics	I M.Sc.,/I	Mathematical Physics	5
74.		III B.Sc.,/I	Mathematical Physics	5
75.		I B.Sc.,/I	Allied Mathematics	5
76.	Chemistry	II B.Sc.,/III	Allied Mathematics	5

EVEN SEMESTER 2017-2018

S.No.	Dept	Year/Sem	Subject	Hours/Week
1.	Maths	M.Phil.,	Probability theory & Stochastic Process	5
2.		M.Phil.,	Advanced Applied Maths	5
3.		M.Phil.,	Research Methodology	5
4.		II M.Sc.,/IV	Applied Graph Theory	5
5.		II M.Sc.,/IV	DE and Special Functions	5
6.		I M.Sc.,/II	Managerial Decision Making	5
7.		I M.Sc.,/II	Complex Analysis	5
8.		I M.Sc.,/II	Numerical Methods	5
9.		I M.Sc.,/II	Topology	5
10.		I M.Sc.,/II	Operations Research Lab	5
11.		I M.Sc.,/II	Value Education	2
12.		III B.Sc.,/VI	Real Analysis	5
13.		III B.Sc./VI	Discrete Mathematics and Automata Theory	5
14.		III B.Sc./VI	Dynamics	5
15.		III B.Sc./VI	Operations Research	5
16.		III B.Sc./VI	Linear Algebra	5
17.		II B.Sc.,/IV	PDE and Transform Techniques	5
18.		II B.Sc.,/IV	Graph Theory	5
19.		I B.Sc.,/II	Vector Calculus & Fourier Series	5
20.		I B.Sc.,/II	Lab – Basics of Matlab	5
21.		I B.Sc.,/II	Allied Statistics-II	5
22.		I B.Sc.,/II	Classical Algebra	5
23.	CSE	IIA/IV	Logics and Combinatorics	5
24.		IIB/IV	Logics and Combinatorics	5
25.		IIC/IV	Logics and Combinatorics	5
26.		IID/IV	Logics and Combinatorics	5
27.		I A/II	Basic Mathematics for Engineers II	5
28.		I B/II	Basic Mathematics for Engineers II5	5
29.		I C/II	Basic Mathematics for Engineers II	5
30.		I D/II	Basic Mathematics for Engineers II	5
31.	CSE&IT	I E/II	Basic Mathematics for Engineers II	5
32.	IT	II/IV	Applied Mathematics for	5

			Technology – I	
33.	MECH	IIA/IV	Applied Mathematics for Mechanical Engineers – II	5
34.		IIB/IV	Applied Mathematics for Mechanical Engineers – II	5
35.		I A/II	Basic Mathematics for Engineers II	5
36.		I B/II	Basic Mathematics for Engineers II	5
37.		I C/II	Basic Mathematics for Engineers II	5
38.	ECE	III – A/VI	Applied Random Processes	5
39.		IIA/IV	Applied Mathematics for Electronics Engineers-II	5
40.		IIB/IV	Applied Mathematics for Electronics Engineers-II	5
41.		IIC/IV	Applied Mathematics for Electronics Engineers-II	5
42.		I A/II	Basic Mathematics for Engineers II	5
43.		I B/II	Basic Mathematics for Engineers II	5
44.		I C/II	Basic Mathematics for Engineers II	5
45.		I D/II	Basic Mathematics for Engineers II	5
46.	EEE	II/IV	Applied Mathematics for Electrical Engineers-II	5
47.	EEE/EIE/ MECT	I/II	Basic Mathematics for Engineers II	5
48.	Civil	II/IV	Applied Mathematics for Civil Engineers – II	5
49.		I/II	Basic Mathematics for Engineers I	5
50.	EIE/MECHT	III/VI	Applied Mathematics for Instrumentation Engineers-IV	5
51.		II/IV	Applied Mathematics for Instrumentation Engineers-II	5
52.	BCA	I/II	Computer Associated Numerical Methods	5
53.	B.Sc.,(CS)	I/II	Computer Associated Numerical Methods	5
54.	MCA	II/IV	Operations Research	5
55.	Chemistry	II B.Sc.,/III	Allied Mathematics	5
56.	Physics	I B.Sc.,/I	Allied Mathematics-II	5

Proposed Activities for the Academic Year 2018-19

The Department of Mathematics planned to conduct the following programs in the next academic year 2018-19.

- ❖ A workshop on MATLAB
- ❖ An International Conference
- ❖ A National Seminar
- ❖ Quality Enrichment Programme

JOURNAL PUBLICATION

Dr.T. Venugopal

1. T.Venugopal, S.Indirapriyadarshini, Optimal Distribution of Vegetables from a Group of Dealers to Different Whole Sale Customers on a Typical Day, International Research Journal of Mathematical Sciences,Vol.7,Issue 1, 2018.

2. A.Gayathri, T.Venugopal, A Numerical study of comparative analysis of Experimental and Theoretical viscosities of Binary mixtures of few polymer systems, Mathematical Sciences International Research Journal, Vol 7, issue -1, PP 350-354 , ISBN: 2278-8697, 2018.

Dr.K.Srinivasa Rao

1. D.Vijayalakshmi, K.Srinivasa Rao, DD Matrix with Least Positive Eigen Value and Protein Similarity, International Journal of Pure and Applied Mathematics, PP: 331-341, ISBN: 1314-3395, 2017.

2. D.Vijayalakshmi, K.Srinivasa Rao, Protein Similarity/Dissimilarity Using Modified Weisfeiler Algorithm and Minimum Distance Sub graph, Mathematical Sciences International Research Journal, Vol.6, PP:53-58, ISSN No:2278-8697, 2017.

3. G.Vijayalakshmi, L.Anand Babu, K.Srinivasa Rao, Heat and Mass Transfer in MHD Stagnation Print Nanofluid Flow Over Stretching Sheet in Porous Medium with Chemical Reactions and Prescribed Surface Heat Flux, International Journal of Computer and Mathematical Sciences, Vol 6, NO. 7, PP 1-10, ISSN: 2347-8527, July 2017.

4. A.Dhanalakshmi, K.Srinivasa Rao, Hosoya Polynomial and Wiener Index of Hexachains, Mathematical Sciences International Research Journal, Vol.6, PP:33-38, ISSN No:2278-8697, 2017.

5. A.Kanchana, K.Srinivasa Rao, Distinct Minimized Equation from Unique Boolean Function in Simple Truth Table Logic, International Journal of Pure and Applied Mathematics, Vol 116, No23 , PP 115-120, ISSN: 1311-8080, 2017.

6. R.Mageswari, K.Srinivasa Rao, K.Sivakumar , Estimation of Protein Packing density from Protein Contact Map, International Journal of Pure and Applied Mathematics, PP:417-424, ISBN: 1314-3395, 2017.

Dr.N.Saradha

1. N.Saradha, V. Swaminathan, P.Anjali, Triple Connected Complementary Tree Equitable Domination, International Research Journal of Mathematical Sciences,Vol.7, Issue 1, PP 340-343. ISSN: 2278-8697, 2018.

2. N.Saradha, V. Swaminathan , S.Arumugam, Global Triple Connected Complementary Acyclic Domination, International Research Journal of Mathematical Sciences,Vol.7, Issue 1, PP 78-80, ISSN: 2278-8697, 2018.

3. N. Saradha,V. Swaminathan, K.Amudhavalli,.Strong efficient triple connected domination , International Research Journal of Mathematical Sciences,Vol.7, Issue 1, PP 316-.319, ISSN: 2278-8697, 2018.

Dr.R.Malathi

1. R.Malathi & Babu.N, Perfect and Efficient Edge Domination in Graphs, International Research Journal of Mathematical Sciences,Vol.7, Issue 1, PP 299-304, ISSN: 2278-8697, 2018.

2. R.Malathi & Balamurugan.D, Connected Domatic Number of a Graph, Mathematical Sciences International Research Journal,Vol.7,Issue 1, PP 295-298, ISSN: 2278-8697,2018.

3. R.Malathi & Bangarappa.G, Unique Minimum Edge Domination in Trees, Mathematical Sciences International Research Journal,Vol.7,Issue 1, PP 292-294, ISSN: 2278-8697, 2018.

Dr. D.Vijayalakshmi

1. D.Vijayalakshmi, K.Srinivasa Rao, DD Matrix with Least Positive Eigen Value and Protein Similarity, International Journal of Pure and Applied Mathematics, PP: 331-341, ISBN: 1314-3395, 2017.

2. D.Vijayalakshmi, K.Srinivasa Rao, Protein Similarity/Dissimilarity Using Modified Weisfeiler Algorithm and Minimum Distance Sub graph, Mathematical Sciences International Research Journal, Vol.6, PP:53-58, ISSN No:2278-8697, 2017.

3. G.Vijayalakshmi, L.Anand Babu, K.Srinivasa Rao, Heat and Mass Transfer in MHD Stagnation Print Nanofluid Flow Over Stretching Sheet in Porous Medium with Chemical Reactions and Prescribed Surface Heat Flux, International Journal of Computer and Mathematical Sciences, Vol 6, NO. 7, PP 1-10, ISSN: 2347-8527, July 2017.

4. Vijayalakshmi. D, Hemalatha .S, Protein Similarity/ Dissimilarity study using Moment Vector by Non – Homologous method. Mathematical Sciences International Research Journal, Vol 7, Spl issue, ISSN 2278 – 8697, P.No. 81-85, 2018.

5. Vijayalakshmi. D, Anandraj. T, Comparative Analysis of Methods for Protein Similarity and Dissimilarity using Graphical Representation. Mathematical Sciences International Research Journal, Vol 7, Spl issue ISSN 2278 – 8697, P.No. 1-7, 2018.

6. Vijayalakshmi. D, Geethanjali. P, Similarity/ Dissimilarity study of Protein in Non homologous way using Root Mean Square, Mathematical Sciences International Research Journal ,Vol 7, Spl issue ISSN 2278 – 8697, P.No.73-77, 2018.

7. Vijayalakshmi. D, Shakila.B, Measurement of Similarity/ Dissimilarity study of Protein using polarity of Amino acids, Mathematical Sciences International Research Journal, Vol 7, Spl issue, ISSN 2278 – 8697, P.No.53-57, 2018.

Dr.E.Geetha

1. E.Geetha, S.Sarala, M.Nirmala, Consequences of Thermal Radiation on an Unsteady Nanofluid Titanium Dioxide Flow Past Over a Vertical Plate, International Journal of Pure and Applied Mathematics, Volume 116, No. 23, PP:53-59, ISSN: 1311-8080, 2017.

2. E.Geetha, R.Muthucumaraswamy, M.Kothandapani, Effects of Magneto Hydrodynamics of Unsteady Natural Free Convective Flow of Nanofluid on a Vertical Porous Plate, International Journal of Pure and Applied Mathematics, Volume 116, No. 23, PP:79-86, ISSN: 1311-8080, 2017.

3. E.Geetha, M.Anushalini, R.Muthucumaraswamy, Impact of Thermal radiation on an unsteady copper-water nanofluid flow past over an infinite vertical plate with variable temperature, International Research Journal of Mathematical Sciences, Vol.7, Issue 1, PP. 8 – 16, ISSN 2278 – 8697, 2018.

4. E.Geetha, Effects of thermal radiation of an unsteady convectiveAl2O3 nanofluid flow past on vertical plate in a porous medium, International Research Journal of Mathematical Sciences, Vol.7, Issue 1, , PP 56 - 64, ISSN 2278 – 8697, 2018.

5. E.Geetha, Effects of Heat transfer of an unsteady nanofluid flow past over an isothermal vertical plate in the presence of thermal radiation, International Research Journal of Mathematical Sciences, Vol.7, Issue 1, PP 65 - 72, ISSN 2278 – 8697, 2018,.

6. E.Geetha, Magneto Hydrodynamic effects on a transient Al2O3 nanofluid past over an vertical plate, International Research Journal of Mathematical Sciences, Vol.7, Issue 1, PP 148 - 156, ISSN 2278 – 8697, 2018.

Dr. R.Mageswari

1. R.Mageswari, K.Srinivasa Rao, K.Sivakumar , Estimation of Protein Packing density from Protein Contact Map, International Journal of Pure and Applied Mathematics, PP:417-424, ISBN: 1314-3395, 2017.

2. Mageswari. R, Meena.V, Finding Residues Residing at the Protein Core and Protein Surface Using Graph Theoretical Techniques, International Research journal of Mathematical Sciences, Vol.7,Issue 1, PP 192-195, ISSN: 2278-8697, 2018.

3. Mageswari. R, M.Kalpana, Finding Graph of the Protein from its Contact Map, International Research journal of Mathematical Sciences, Vol.7, Issue 1, PP 196- 200, ISSN: 2278-8697, 2018.

4. Mageswari. R, Similarity / Dissimilarity of Protein Structures Through Strength of Nodes, International journal of Mathematical Sciences, PP 219-224, ISSN: 2278-8697, 2018.

Dr.P.Nagarajan

1. Kalyanaraman. R, Nagarajan.P, Bulk arrival, Fixed Batch Service Queue with Unreliable Server and with Compulsory Vacation, Two Stages of Service, Delay Time", International Journal of Pure and Applied Mathematics, Special Issue, Volume 117, No.20, PP 89-103, ISSN: 1311-8080 (printed version); ISSN: 1314-3395 (on-line version) Dec 2017.

Dr.P.Balaji

1. P.Balaji, Analysis of Digraphs of Basic Stock Control System and Simultaneous Kanban Control   System, International Journal of Pure and Applied Mathematics, PP: 353-362,ISBN: 1314-3395, 2017.

2. P.Balaji D.Dinakar ,Analysis of Marked Graph of Cases of Deadlock Using Sign Incidence Matrix and Their Conversion into Digraphs, International Research Journal of Mathematical Sciences, Vol.7, Issue 1, PP 252-257, ISSN 2278 – 8697, 2018,.

3. P.Balaji G Balamurugan ,Analysis of Marked Graph of Cases of Assembling Plan using Sign Incidence Matrix and its Conversion into Digraphs, International Research Journal of Mathematical Sciences, Vol.7, Issue 1, PP 258-263, ISSN 2278 – 8697, 2018.

4. P.Balaji I Davidraj, Analysis of Marked Graph with Equivalent Critical Place using Sign Incidence Matrix and its Conversion into Digraphs, International Research Journal of Mathematical Sciences, Vol.7, Issue 1, PP 264-270, ISSN 2278 – 8697, 2018.

5. P.Balaji M Devarajulu , Digraph of the Marked graphs of a Machine that Process One Job at a Time and Basic Schema of Production State, International Research Journal of Mathematical Sciences, Vol.7, Issue 1, PP 271-274, ISSN 2278 – 8697, 2018 .

6. P.Balaji I Davidraj, Analysis of Digraphs of NON_Deadlock Free FMS and Machining Station with Four Machines and Two Robots, International Research Journal of Mathematical Sciences, Vol.7, Issue 1, PP 275-278, ISSN 2278 – 8697, 2018.

Dr.S.Vijayabarathi

1. Vijayabarathi.S, Annihilator ideals of Pre A*-algebra, International Research Journal of Mathematical Sciences, Vol.7, Issue 1, PP 372-376, ISSN 2278 – 8697, 2018.

2. Vijayabarathi.S, Laplace expansion in Rhotrix, International Journal of Mathematical Archieve, Vol 9(4),PP 45-48, 2018.

Dr.K.Pramila

1. K.Pramila,"Solving Integer Programming Problems Using MATLAB", International Research Journal of Mathematical Sciences, Vol 7 Issue 1, PP.123-130, ISSN 2278 – 8697, 2018.

2. K.Pramila, P.SebastiSuganya, " Cost Effective and Very Cost Effective Bipartition of Few Families of Graph", International Research Journal of Mathematical Sciences , Vol 7 Issue 1, PP 100-106, ISSN 2278 – 8697, 2018.

3. K.Pramila, D.Ramya, "Application of Graph Theory in Traffic Control Problem", International Research Journal of Mathematical Sciences, Vol 7 Issue 1, PP 241-245, ISSN 2278 – 8697, 2018.

Dr.J.Sengamalaselvi

1. J.Sengamalaselvi, A.Keerthi, K.P.Chandrakiran, Real Time Application of CPM and Pert in the   Field of Operation Research using Share Grin 40 Software in SCSVMV, International Journal of Pure and Applied Mathematics, PP: 403-410, ISBN: 1311-8080, 2017.

2. J.Sengamalaselvi, S.Pavithra, T.Venugopal, A Study on the Impact of ICT at the Higher Secondary   Level Using Geogebra, International Journal of Pure and Applied Mathematics, PP: 191-197, ISBN: 1311-8080, 2017.

3. J.Sengamalaselvi, T.Latha, T.Venugopal ,Optic Math of linear programming problem and Graphical method using the open source software, International Research Journal of Mathematical Sciences, Vol 7, Issue 1, PP 137-142, ISSN 2278-8697, 2018.

4. J.Sengamalaselvi, V.Nalini, T.Venugopal, Visual Math of Secondary Mathematics Education in the Area of Geometry using Geogebra, International Research Journal of Mathematical Sciences, Vol 7, Issue 1,PP 143-147, ISSN 2278-8697, 2018.

5. J.Sengamalaselvi, K.Murugasen, An Analytical Method for finding Critical path in a Fuzzy project Network , International Research Journal of Mathematical Sciences, Vol 7 Issue 1, PP 131-136 ,ISSN 2278-8697, 2018 .

6. J.Sengamalaselvi, Visual Graph of Higher Secondary Mathematics Education using the Open Source Software , International Journal of Engineering Sciences and Technology, Vol .7 Issue 6, PP 406 -411 , ISSN:2277- 9655, 2018.

Dr.V.K.Radhakrishnan

1. V.K. Radhakrishnan, Exhibiting Railway Junctions as Steiner Points, International Research Journal of Mathematical Sciences, Vol 7, Issue 1, PP 44-47 ,ISSN 2278-8697,2018 .

2. V.K. Radhakrishnan, J. Senthilkumar, Object Oriented Approach to Travelling Salesman Problem International Research Journal of Mathematical Sciences, Vol 7 Issue 1, PP 237-240 ,ISSN 2278-8697, 2018.

3. V.K. Radhakrishnan, B. Shanmugam,Nurse Scheduling Problem using Linear Programming Problem for Day-wise Schedule in Journal of Statistics and Mathematical Engineering, Vol. 4, Issue 1 (2018), PP 1-7.

Dr.A.Dhanalakshmi

1. A.Dhanalakshmi, K.Srinivasa Rao, Hosoya Polynomial and Wiener Index of Hexachains, Mathematical Sciences International Research Journal, Vol.6, PP:33-38, ISSN No:2278-8697, 2017.

2. Dhanalakshmi.A, Sivakumar. C,Kekule Indices of Circumcoronene, Mathematicsl Science international research journal, Vol.7, Issue 1, PP 107-111, ISSN 2278-8697, 2018

3. Dhanalakshmi.A, Thamarai Lakshmi.S, Computational Method Of An Incompressible Viscous Couettee Flow By Means Of Crank Nicolson Technique And Thomas Algorithm, Mathematical Science international Research Journal, Vol. 7, Issue 1, PP 112-118, ISSN 2278-8697, 2018.

Dr.K.Bharathi

1. K.Bharathi, C.Vijaylakshmi, Evolutionary Analysis for Optimization Model with the Design of Job Shop Scheduling, Journal of Advanced Research in Dynamical & Control Systems, Vol. 10, 03-Special Issue, PP 1119-1123, ISSN 1943-023X,2018.

2. K.Bharathi, C.Vijaylakshmi, Design and Review of Optimization using Evolutionary, Mathematical Sciences International Research Journal, ISSN: 2278 - 8697 (printed version), Vol. 7 Issue 1, PP 157-160, ISSN 2278-8697, 2018.

Dr.T.N.Kavitha

1. T.N. Kavitha, A. Jayalakshmi, Some Relations on a Right Near Idempotent Semigroup, Mathematical Sciences International Research Journal, Vol 7, issue 1, PP 335-340,ISSN 2278-8697, 2018.

2. M.Uma Priya, T. N. Kavitha, Application of Neuro- Fuzzy Controller in Finding the Quality of Jaggery, Mathematical Sciences International Research Journal, Vol 7, issue1, PP 344-349, ISSN 2278-8697, 2018.

3. T.N. Kavitha, A. Jayalakshmi, A Special Case of near Idempotent Semigroup, Journal of Global Research and Mathematical Archives, Vol 5, issue 5, PP 335-340, 2018, ISSN 2320- 5822, 2018.

Dr.A.Gayathri

1. A.Gayathri, A study on higher order triangular sum numbers of polyhedral and graceful graphs, Mathematical Sciences International Research Journal, Vol 7, issue -1, PP 48-55, ISBN: 2278-8697, 2018.

2. A.Gayathri, T.Venugopal, A Numerical study of comparative analysis of Experimental and Theoretical viscosities of Binary mixtures of few polymer systems, Mathematical Sciences International Research Journal, Vol 7, issue -1, PP 350-354 , ISBN: 2278-8697, 2018.

Mrs.A.Shakila

1. Vijayalakshmi. D, Shakila.B, Measurement of Similarity/ Dissimilarity study of Protein using polarity of Amino acids, Mathematical Sciences International Research Journal, Vol 7, Spl issue, ISSN 2278 – 8697, P.No.53-57, 2018.

CONFERENCE PROCEEDINGS (FULL PAPER) PUBLICATIONS

1. A.Kanchana, K.Srinivasa Rao, Reducing the Variables in Boolean Function Using Fuzzy Cognitive Map to Create a Circuit, National Conference on Recent Trends in Fuzzy Mathematics and its Applications, PP: 127-137, November 2017.

2. Dr.J.Sengamalaselvi, Execution of Optic Mat in the Field of Operation Research by using Open Source Software Geogebra, International Conference on Mathematical Computer Engineering PP: 191-197, ISBN: 978-93-81899-83-0, 2017.

3. K.Bharathi, Design and Implementation of Evolutionary Algorithms in Multiobjective Optimization, International Conference on Mathematical Computer Engineering, PP: 35-36, ISBN: 978-93-81899-83-0, , 2017.

4. Dr.T.N.Kavitha, A MM Algorithm for Travelling Salesman Problem, International Conference on Mathematical Computer Engineering, PP: 343-345, ISBN: 978-93-81899-83-0, 2017.

5. Gnanasakthi.S , K.Srinivasa Rao, Inducing Pre A*-Algebras, Proceedings of International Conference on Pure and Applied Mathematics, PP 231-236 , ISBN 978-93-87088-01-6, 2018.

6. R.Malathi, T.Venugopal, Three Valued Logic on Complex Logical Variables, PP 497-504, ISBN: 978-93-87088-01-6, 2018.

7. A.R.Shoba, R.Malathi, Properties Relating to The Notions of Fuzzy Graph, Proceedings of International Conference on Pure and Applied Mathematics, PP 493-496, ISBN: 978-93-87088-01-6, 2018.

8. Vijayalakshmi. D, Anandraj. T, Evaluation of Methods of Protein Similarity and Dissimilarity study using Graphical Representation, Proceedings of the International Conference on Pure and Applied Mathematics , PP 209-216, ISBN 978-93-87088-01-6,2018.

9. Nagarajan.P and Kishore Kumar N and Muniappan R , An M/GK/1 Queue with Unreliable Server and with Compulsory Vacation Two stages of Service, Delay time, Proceedings of International Conference on Pure and Applied Mathematics, PP 309-320, ISBN 978-93-87088-01-6, 2018.

10. Nagarajan.P Krishnaveni V, An M/GK/1 with Unreliable Server, Compulsory Vacation and with Delay Time, Proceedings of International Conference on Pure and Applied Mathematics, PP 321-330, ISBN 978-93-87088-01-6, 2018.

11. Nagarajan.P and Lakshmi, An M/GK/1 queue with Unreliable Server, Bernoulli Vacation, Two stages of Service and with Delay Time, Proceedings of International Conference on Pure and Applied Mathematics, PP 331-342, ISBN 978-93-87088-01-6, 2018.

12. Vijayabarathi.S,A.Palanivel, Power of Rhotrix, Proceedings of International Conference on Pure and Applied Mathematics, PP 135-138 ISBN: 978-93-87088-01-6,2018.

13. Vijayabarathi.S, R.Rajesh, Transcedental Number is Countable, Proceedings of International Conference on Pure and Applied Mathematics, PP 139-142, ISBN: 978-93-87088-01-6,2018.

14. Vijayabarathi.S, M.Raja, Odd Mean and Even Mean Labeling is Countable, Proceedings of International Conference on Pure and Applied Mathematics, PP143-148, ISBN: 978-93-87088-01-6, 2018.

15. V.K. Radhakrishnan, M. Sivakumar, Nurse Shift Schedule Using Linear Programming Model, Proceedings of International Conference on Pure and Applied Mathematics, ISBN: 978-93-87088-01-6,2018.

16. V.K. Radhakrishnan, T. Venugopal, Optimisation of Weighted-Node Network Problems, Proceedings of the National Conference on Recent Developments in Mechanical Engineering and Modern Techniques, ISBN: 978-93-81208-60-1, 2018.

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Paper Presented by Faculty Members

Dr.T. Venugopal

1. Presented a paper entitled, A Numerical Study of Comparative Analysis of Experimental and Theoretical Viscosities of Binary Mixtures of Few Polymer Systems in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

Dr.K.Srinivasa Rao

1. Presented a paper entitled, Some Topological Indices of Nano Tube $TUC_5C_6C_8$ in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

2. Presented a paper entitled, Extension of Distinct Minimized Equation from Unique Boolean Function in Simple Truth Table as n Variables in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

3. Presented a paper entitled, Wiener Index and Hosoya Polynomial of Octachains in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

4. Presented a paper entitled, Inducing Pre A*-Algebra in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

5. Presented a paper entitled, Wiener Index and Hosoya Polynomial of Stripes of Nano Tube in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

6. Presented a paper entitled, Effect of Partial Lip and Radiation on MHD Nano fluid over an Exponentially Stretching Sheet Embedded in Double Stratified Medium in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

7. Presented a paper entitled, Fourier Analysis of Pre A*-Algebra in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

8. Presented a paper entitled, On Some Classes of Bi-Univalent Functions in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

Dr.N.Saradha

1. Presented a paper entitled, Triple Connected Complementary Tree Equitable Domination in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

2. Presented a paper entitled, Strong Efficient Triple Connected Domination in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

3. Presented a paper entitled, Global Triple Connected in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

Dr.R.Malathi

1. Presented a paper entitled, Perfect and Efficient Edge Domination in Graphs in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

2. Presented a paper entitled, Connected Domatic Number of a Graph in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

3. Presented a paper entitled, Unique Minimum Edge Domination in Trees in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

4. Presented a paper entitled, Properties Relating to the Notions of Fuzzy Graphs in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

5. Presented a paper entitled, Three Valued Logic on Complex Logical Variables in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

Dr. D.Vijayalakshmi

1. Presented a paper entitled, Protein Similarity/Dissimilarity using Modified Weisfeiler Algorithm and Minimum Distance Sub graph in International Conference on Advances in Mathematics and Computer Science at V.V.Vanniaperumal College for Women, Virudhunagar, during 14/12/2017 to 16/12/17.

2. Presented a paper entitled, Evaluation of Methods of Protein Similarity and Dissimilarity Study Using Graphical Representations in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

3. Presented a paper entitled, Protein Similarity/Dissimilarity Study Using Moment Vector By Non-Homologous Method in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

4. Presented a paper entitled, Similarity/Dissimilarity Study of Protein in Non-Homologous Way Using Root Mean Square in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

5. Presented a paper entitled, Fuzzy Planar Graphs and its Applications in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

6. Presented a paper entitled, Measurement of Similarity/Dissimilarity of Protein Using Polarity of Amino Acids in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

7. Presented a paper entitled, Irregular Intuitionistic Fuzzy Graph in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

8. Presented a paper entitled, Stability of the Protein Graph and Similarity/ Dissimilarity of Proteins in National Conference on Mathematical Sciences and Applications at Thiruvallur University College of Arts and Science Tirupattur on 22/03/2018.

Dr.E.Geetha

1. Presented a paper entitled, Magneto Hydrodynamic Effects on a Transient Al_2o_3 Nanofluid Past Over a Vertical Plate in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

2. Presented a paper entitled, Effects of Thermal Radiation of an Unsteady Convective $Al_2 \, ^{0}_{3}$ Nanofluid Flow Over A Vertical Plate in a Porous Medium in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

3. Presented a paper entitled, Effects of Heat Transfer of an Unsteady Nanofluid Flow Past Over an Isothermal Vertical Plate in the Presence of Thermal Radiation in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

4. Presented a paper entitled, Impact of Thermal Radiation on an Unsteady Copper-Water Nanofluid Flow Past over an Infinite Vertical Plate with Variable Temperature in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

Dr. R.Mageswari

1. Presented a paper entitled, Finding Residues Residing at the Protein Core and Protein Surface Using Graph Theoretical Techniques in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

2. Presented a paper entitled, Finding Graph of the Protein from its Contact Map in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

3. Presented a paper entitled, Similarity / Dissimilarity of Protein Structures through Strength of Nodes in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

Dr.P.Nagarajan

1. Presented a paper entitled, Bulk arrival, fixed batch service queue with unreliable server and with compulsory vacation, two stages of service, delay time in International Conference on Mathematical Impacts in Science and Technology, BIT-MIST 2017 at Bannnari Amman Institute of Technology during17-11-17 to 18-11-2017.

2. Presented a paper entitled, An $M/G^k/1$ Queue With Unreliable Server and With Compulsory Vacation Two Stages of Service, Delay Time in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

3. Presented a paper entitled, An $M/G^k/1$ With Unreliable Server, Compulsory Vacation And With Delay Time in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

4. Presented a paper entitled, An $M/G^k/1$ Queue With Unreliable Server, Bernoulli Vacation, Two Stages of Service and With Delay Time in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

Dr.P.Balaji

1. Presented a paper entitled, Analysis of Marked Graph of Cases of Deadlock Using Sign Incidence Matrix and Their Conversion into Digraphs in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

2. Presented a paper entitled, Analysis of Marked graph of cases of assembling plan using Sign Incidence Matrix and its conversion into digraphs in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

3. Presented a paper entitled, Analysis of Marked graph with equivalent critical place using Sign Incidence Matrix and its conversion into Digraphs in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

4. Presented a paper entitled, Digraph of the Marked graphs of a Machine that process one job at at a time and basic Schema of Production State in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

5. Presented a paper entitled, Analysis of Digraphs of NON-Deadlock free FMS and Machining station with Four Machines and Two Robots in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

Dr.S.Vijayabarathi

1. Presented a paper entitled, Cardinality of Transidental Numbers in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.
2. Presented a paper entitled, Cardinality of Odd and Mean Labelling in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.
3. Presented a paper entitled, Property of Rhotrix in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.
4. Presented a paper entitled, Annihilator Ideals of Pre A*-algebra in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

Dr.K.Pramila

1. Presented a paper entitled, Solving Integer Programming Problems Using MATLAB in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

2. Presented a paper entitled, Cost Effective and Very Cost Effective Bipartition of Few Families of Graph in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

3. Presented a paper entitled, Application of Graph Theory in Traffic Control Problem in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

Dr.J.Sengamalaselvi

1. Presented, ICT in Mathematics (Problem solving skills) at SCERT, Chennai on 21/07/2017.

2. Presented, Developing Application Skills in Mathematics at SCERT, Chennai on 21/07/2017.

3. Presented a paper entitled, Execution of Optic Mat in the field of Operation Research by using Open Source Software Geogebra, in International Conference on Mathematical Computer Engineering at VIT University, Chennai from 3/11/2017 to 4/11/2017.

4. Presented a paper entitled, Real time Application of CPM and Pert in the Field of Operation Research using share Grin 40 Software in SCSVMV, in International Conference on Advances in Applicable Mathematics 2017, Bharathiar University, Coimbatore, during 7-8 of December, 2017.

5. Presented a paper entitled, A Study on the Impact of ICT at the Higher Secondary level using Geogebra, in International Conference on Advances in Applicable Mathematics 2017, Bharathiar University, Coimbatore, during 7-8 of December, 2017.

6. Presented a paper entitled, An Analytical Method For Finding Critical Path in a Fuzzy Project Network in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

7. Presented a paper entitled, Optic Math of Linear Programming Problem and Graphical Method Using the Open Source Software in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

8. Presented a paper entitled, Visual Math of Secondary Mathematics Education in the Area of Geometry Using Geogebra in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

Dr.V.K.Radhakrishnan

1. Presented a paper entitled, Exhibiting Railway Junctions as Steiner Points, in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

2. Presented a paper entitled, Object Oriented Approach to Travelling Salesman Problem, in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

Dr.A.Dhanalakshmi

1. Presented a paper entitled, Hosoya Polynomial and Wiener Index of Hexachains in International Conference on Advances in Mathematics and Computer Science 2017at V.V.Vanniaperumal College for Women, Virudhunagar, during 14/12/2017 to 16/12/17.

2. Presented a paper entitled, Computational Method of an Incompressible Viscous Couettee Flow By Means of Crank Nicolson Technique and Thomas Algorithm in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

3. Presented a paper entitled, Kekule Indices of Circumforonene in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

4. Presented a paper entitled, Stability of Quadratic and Quartic Functional Equations in Quasi-Banach Spaces and Employment of Banach Space Ideal Properties in Wireless Network in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

5. Presented a paper entitled, Study on Maximum Common Edge Subgraphs and Similarity Between the Structures in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

6. Presented a paper entitled, Evaluation of Power Domination in Honeycomb Grid Graphs in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

7. Presented a paper entitled, Haimoto System of Equations and their Solutions in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

Dr.K.Bharathi

1. Presented a paper entitled, Design and Implementation of Evolutionary algorithms in Multiobjective Optimization, in International Conference on Mathematical Computer Engineering, at VIT University, Chennai, from 3/11/2017 to 4/11/2017.

2. Presented a paper entitled, First Order Neutral Delay Differential Equations in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

3. Presented a paper entitled, Analysis of Multi Dimensional Space Using Inventory Model in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

4. Presented a paper entitled, Design on Vacation Queues in International conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

5. Presented a paper entitled, Evolutionary Analysis for Optimization Model with the Design of Job Shop Scheduling in National conference on Emerging Trends in Mathematical & Application in Engineering and Technology at Hindustan Institute of Technology & Science on 22/3/2018.

Dr.T.N.Kavitha

1. Presented a paper entitled, A MM Algorithm for Travelling Salesman Problem, in International Conference on Mathematical Computer Engineering, at VIT University, Chennai, from 3/11/2017 to 4/11/2017.

2. Presented a paper entitled, Application of Neuro-Fuzzy Controller in Finding The Quality of Jaggery in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

3. Presented a paper entitled, Modelling of Conformal Mapping and its Applications in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

4. Presented a paper entitled, A Theoretical Study and its Application on Rectangular Games in Game Theory in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

5. Presented a paper entitled, Some Relations on a Right Near Idempotent Semi group in International conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

Dr.A.Gayathri

1. Presented a paper in Materials Research Society of Thailand International Conference, Chiang Mai from 31.10.2017 to 03.11.2017

2. Presented a paper entitled, A Numerical Study of Comparative Analysis of Experimental and Theoretical Viscosities of Binary Mixtures of Few Polymer Systems in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

3. Presented a paper entitled, A Study on Higher Order Triangular Sum numbers of Polyhedral and Graceful Graphs in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018

4. Presented a paper entitled, Theoretical and Experimental Ultrasonic Velocities of Few Binary Liquids – A Comparative Analysis in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

Mrs. B.Amudha

1. Presented a paper entitled, Degree Based Topological Indices of Nanotube $TUc_4c_6c_{12}$ in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

Mr. K.Saravanan
1. Presented a paper entitled, Degree Based Topological Indices of Nanotube $TUc_4c_6c_{12}$ in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

Ms. R. Kalaiarasi

1. Presented a paper entitled, Degree Based Topological Indices of Nanotube $TUc_4c_6c_{12}$ in International conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

Mrs. A.Shakila

1. Presented a paper entitled, Measurement of Similarity/Dissimilarity of Protein Using Polarity of Amino Acids in International Conference on Pure and Applied Mathematics at SCSVMV during 19-20, Feb 2018.

Workshop/Conference/Seminar Attended

Dr.K.Srinivasa Rao

1. Participated in "Quality Enrichment Programme" organized by Department of Mathematics, SCSVMV on 27/10/2017.
2. Participated in Faculty Development Programme "Pedagogical Knowledge of Mathematics-The Teaching of Linear Algebra" organized by Central University of Tamil Nadu during 18th-22nd December, 2017.
3. Participated in "International Conference on Pure and Applied Mathematics" organized by Department of Mathematics, SCSVMV during 19-20, February 2018.

Dr.N.Saradha

1. Attended "National Workshop on MATLAB in Applied Sciences", organized by Department of Mathematics , SCSVMV during September 15-16, 2017.
2. Participated in "Quality Enrichment Programme" organized by Department of Mathematics, SCSVMV on 27/10/2017.
3. Participated in "International Conference on Pure and Applied Mathematics" organized by Department of Mathematics, SCSVMV during 19-20, Feb 2018.

Dr.R.Malathi

1. Attended "National Workshop on MATLAB in Applied Sciences", organized by Department of Mathematics , SCSVMV during September 15-16, 2017.
2. Participated in "International Conference on Pure and Applied Mathematics" organized by Department of Mathematics, SCSVMV during 19-20, Feb 2018.

Dr. D.Vijayalakshmi

1. Attended "National Workshop on MATLAB in Applied Sciences", organized by Department of Mathematics, SCSVMV during September 15-16, 2017.

2. Participated in "Quality Enrichment Programme" organized by Department of Mathematics, SCSVMV on 27/10/2017.
3. Participated in "International Conference on Pure and Applied Mathematics" organized by Department of Mathematics, SCSVMV during 19-20, February 2018.
4. Attended workshop on "Research Methodology and Data Analysis using SPSS" organized by Thiruvalluvar University Constituent College of Arts Science, Arakkonam during 22-23, February, 2018.

Dr.E.Geetha

1. Attended "National Workshop on MATLAB in Applied Sciences", organized by Department of Mathematics , SCSVMV during September 15-16, 2017
2. Participated in "Quality Enrichment Programme" organized by Department of Mathematics, SCSVMV on 27/10/2017.
3. Participated in "International Conference on Pure and Applied Mathematics" organized by Department of Mathematics, SCSVMV during 19-20, Feb 2018.
4. Attended workshop on "Research Methodology and Data Analysis using SPSS" organized by Thiruvalluvar University Constituent College of Arts Science, Arakkonam during 22-23, February, 2018.

Dr.R.Mageswari

1. Attended "National Workshop on MATLAB in Applied Sciences", organized by Department of Mathematics, SCSVMV during September 15-16, 2017.
2. Participated in "Quality Enrichment Programme" organized by Department of Mathematics, SCSVMV on 27/10/2017.
3. Participated in "International Conference on Pure and Applied Mathematics" organized by Department of Mathematics, SCSVMV during 19-20, Feb 2018.

Dr.P.Nagarajan

1. Attended "National Workshop on MATLAB in Applied Sciences", organized by Department of Mathematics , SCSVMV during September 15-16, 2017.
2. Participated in "Quality Enrichment Programme" organized by Department of Mathematics, SCSVMV on 27/10/2017.

3. Participated in "International Conference on Pure and Applied Mathematics" organized by Department of Mathematics, SCSVMV during 19-20, Feb 2018.
4. Attended training programme, "PFMS-EAT Module" organized by Institute of Government Accounts & Finance. Ministry of Finance, Government of India. RTC, Chennai on 13th of February, 2018.

Mr.P.Balaji

1. Attended "National Workshop on MATLAB in Applied Sciences", organized by Department of Mathematics, SCSVMV during September 15-16, 2017.
2. Participated in "Quality Enrichment Programme" organized by Department of Mathematics, SCSVMV on 27/10/2017.
3. Participated in "International Conference on Pure and Applied Mathematics" organized by Department of Mathematics, SCSVMV during 19-20, Feb 2018.

Dr.S.Vijayabarathi

1. Attended "National Workshop on MATLAB in Applied Sciences", organized by Department of Mathematics, SCSVMV during September 15-16, 2017.
2. Participated in "Quality Enrichment Programme" organized by Department of Mathematics, SCSVMV on 27/10/2017.
3. Participated in "International Conference on Pure and Applied Mathematics" organized by Department of Mathematics, SCSVMV during 19-20, Feb 2018.

Dr.K.Pramila

1. Attended "National Workshop on MATLAB in Applied Sciences", organized by Department of Mathematics, SCSVMV during September 15-16, 2017.
2. Participated in "Quality Enrichment Programme" organized by Department of Mathematics, SCSVMV on 27/10/2017.
3. Participated in "International Conference on Pure and Applied Mathematics" organized by Department of Mathematics, SCSVMV during 19-20, Feb 2018.

Dr.J.Sengamalaselvi

1. Attended Seminar on "Developing New curriculum -2017" organized by State council of Educational Research and Training, Tamilnadu from 20.07.2017 to 22.07.2017.
2. Attended "National Workshop on MATLAB in Applied Sciences", organized by Department of Mathematics, SCSVMV during September 15-16, 2017.
3. Participated in "Quality Enrichment Programme" organized by Department of Mathematics, SCSVMV on 27/10/2017.
4. Attended "International Conference on Mathematical Computer Engineering", organized by VIT University during November 3-4, 2017.
5. Participated in "International Conference on Pure and Applied Mathematics" organized by Department of Mathematics, SCSVMV during 19-20, Feb 2018.

Mr.V.K.Radhakrishnan

1. Attended "National Workshop on MATLAB in Applied Sciences", organized by Department of Mathematics, SCSVMV during September 15-16, 2017.
2. Participated in "Quality Enrichment Programme" organized by Department of Mathematics, SCSVMV on 27/10/2017.
3. Participated in "International Conference on Pure and Applied Mathematics" organized by Department of Mathematics, SCSVMV during 19-20, Feb 2018.

Dr.A.Dhanalakshmi

1. Attended "National Workshop on MATLAB in Applied Sciences", organized by Department of Mathematics, SCSVMV during September 15-16, 2017.
2. Participated in "Quality Enrichment Programme" organized by Department of Mathematics, SCSVMV on 27/10/2017.
3. Participated in "International Conference on Pure and Applied Mathematics" organized by Department of Mathematics, SCSVMV during 19-20, Feb 2018.

4. Attended workshop on "Research Methodology and Data Analysis using SPSS" organized by Thiruvalluvar University Constituent College of Arts Science, Arakkonam during 22-23, February, 2018.

Dr.K.Bharathi

1. Attended "National Workshop on MATLAB in Applied Sciences", organized by Department of Mathematics, SCSVMV during September 15-16, 2017.
2. Participated in "Quality Enrichment Programme" organized by Department of Mathematics, SCSVMV on 27/10/2017.
3. Attended "International Conference on Mathematical Computer Engineering", organized by VIT University during November 3-4, 2017.
4. Participated in "International Conference on Pure and Applied Mathematics" organized by Department of Mathematics, SCSVMV during 19-20, February 2018.
5. Attended workshop on "Research Methodology and Data Analysis using SPSS" organized by Thiruvalluvar University Constituent College of Arts Science, Arakkonam during 22-23, February, 2018.

Dr.T.N.Kavitha

1. Attended "National Workshop on MATLAB in Applied Sciences", organized by Department of Mathematics, SCSVMV during September 15-16, 2017.
2. Participated in "Quality Enrichment Programme" organized by Department of Mathematics, SCSVMV on 27/10/2017.
3. Attended "International Conference on Mathematical Computer Engineering", organized by VIT University during November 3-4, 2017.
4. Participated in "International Conference on Pure and Applied Mathematics" organized by Department of Mathematics, SCSVMV during 19-20, Febuary 2018.

Dr. A.Gayathri

1. Attended "National Workshop on MATLAB in Applied Sciences", organized by Department of Mathematics, SCSVMV during September 15-16, 2017.

2. Participated in "Quality Enrichment Programme" organized by Department of Mathematics, SCSVMV on 27/10/2017.
3. Attended "I Materials Research Society of Thailand International Conference", organized by Chiang Mai, Thailand from 31/10/2017 to 3/11/ 2017.
4. Participated in "International Conference on Pure and Applied Mathematics" organized by Department of Mathematics, SCSVMV during 19-20, Feb 2018.

Mrs. B. Amudha

1. Attended "National Workshop on MATLAB in Applied Sciences", organized by Department of Mathematics, SCSVMV during September 15-16, 2017.

2. Participated in "Quality Enrichment Programme" organized by Department of Mathematics, SCSVMV on 27/10/2017.

3. Participated in "International Conference on Pure and Applied Mathematics" organized by Department of Mathematics, SCSVMV during 19-20, Feb 2018.

Mr. K.Saravanan

1. Attended "National Workshop on MATLAB in Applied Sciences", organized by Department of Mathematics, SCSVMV during September 15-16, 2017.

2. Participated in "Quality Enrichment Programme" organized by Department of Mathematics, SCSVMV on 27/10/2017.

3. Participated in "International Conference on Pure and Applied Mathematics" organized by Department of Mathematics, SCSVMV during 19-20, Feb 2018.

Ms. R. Kalaiarasi

1. Attended "National Workshop on MATLAB in Applied Sciences", organized by Department of Mathematics, SCSVMV during September 15-16, 2017.

2. Participated in "Quality Enrichment Programme" organized by Department of Mathematics, SCSVMV on 27/10/2017.

3. Participated in "International Conference on Pure and Applied Mathematics" organized by Department of Mathematics, SCSVMV during 19-20, Feb 2018.

Mrs. A.Shakila

1. Attended "National Workshop on MATLAB in Applied Sciences", organized by Department of Mathematics, SCSVMV during September 15-16, 2017.
2. Participated in "Quality Enrichment Programme" organized by Department of Mathematics, SCSVMV on 27/10/2017.
3. Participated in "International Conference on Pure and Applied Mathematics" organized by Department of Mathematics, SCSVMV during 19-20, Feb 2018.

Mr. S.Balaji

1. Attended "National Workshop on MATLAB in Applied Sciences", organized by Department of Mathematics, SCSVMV during September 15-16, 2017.
2. Participated in "Quality Enrichment Programme", organized by Department of Mathematics, SCSVMV on 27/10/2017.

M.Phil (Full Time)

PROBABILITY AND STOCHASTIC PROCESS

UNIT – I

Probability – conditional probability – Independent events – Bayes theorem – Random variable – Discrete random variable – Continuous random variable – Mathematical expectation – Properties of expectation – Expectation of linear combination of random variables – Properties of variance – Variance of linear combination of random variables – Moment generating function

UNIT – II

Special discrete distributions – Binomial distribution – Poisson distribution – Geometric distribution – Hyper geometric distribution – Special continuous distributions – Uniform distribution – Exponential distribution – Erlang distribution – Weibull distribution – normal distribution

UNIT – III

Stochastic process – Classification of stochastic process – Average values of stochastic process – Auto correlation function and its properties – Cross correlation function and its properties – Markov – process – Markov chain – Chapman Kolmogorov theorem (without proof) – Classification of states of Markov chain

UNIT – IV

Poisson process – Probability law for Poisson process – Homogenous Poisson process – Second order probability function of a homogenous Poisson process - Mean and autocorrelation of the Poisson process – Properties of Poisson process

UNIT – V

Queuing theory – Symbolic representation of a Queuing model – Characteristics of Infinite capacity, single server Poisson queue model I – [(M/M/I) : (⊠/ FIFO) model] – characteristics of finite capacity, single server Poisson queue model III – [(M/M/I) : (k/FIFO) model]

TEXT BOOKS:

Fundamentals of Mathematical Statistics, S.K.Gupta, V.K.Kapoor, Sultan Chand & Sons,

Stochastic Process – J. Medhi, New Age International (P) Ltd publications

Probability, Statistics and Random process – T.Veerarajan, Tata McGraw Hill Education Private Limited, Third edition

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Advanced Numerical Methods
M.Phil (Mathematics)

UNIT I

(NUMERICAL SOLUTION OF EQUATIONS AND COMPUTATION OF EIGEN VALUES)

Solution of algebraic and transcendental equations - Bisection method – Method of false position (Regula-Falsi Method) - Newton-Raphson Iterative method – Eigen Values and Eigen Vectors – Power Method – Jacobi Method.

UNIT II
(NUMERICAL SOLUTION OF SIMULTANEOUS EQUATIONS)
Simultaneous Linear Equations - Direct methods of solution: Gauss elimination method, Gauss –Jordan method – Iterative methods of solution : Jacobi's method , Gauss – Seidel method

UNIT III
(INTERPOLATION AND NUMERICAL INTEGRATION)
Interpolation with equal intervals – Newton's forward interpolation formula – Newton's backward interpolation formula - Interpolation with unequal intervals: Lagrange's interpolation formula, Newton's divided difference formula - Numerical integration: Trapezoidal rule - Simpson's one-third rule - Simpson's three-eighth rule

UNIT IV
(NUMERICAL SOLUTION OF ORDINARY DIFFERENTIAL EQUATIONS)
Picard's method – Taylor series method - Euler's method – Modif ied Euler's method – Runge's method – Runge-Kutta method – Predictor-corrector methods: Milne's method, Adams Bashforth method .

UNIT V
(NUMERICAL SOLUTION OF PARTIAL DIFFERENTIAL EQUATIONS)
Classification of second order equations – Finite difference approximation to derivatives – Elliptic equations: Laplace Equation, Poisson's equation – Solution of Laplace 's equation – Solution of Poisson's equation – Parabolic equations: Heat equation – Solution of heat equation – Hyperbolic equations: Wave equation – Solution of wave equation

PRESCRIBED TEXT BOOK:
Grewal B.S, Higher Engineering Mathematics, 41st Edition, Khanna Publishers, New Delhi, 2011.

REFERENCES
1. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons
2. Gerald C.F and Wheatley P.O, Applied Numerical Analysis, Addison-Wesley Publishing Company.

RESEARCH METHODOLOGY

M.Phil (Mathematics)

Unit-I An Introduction: Meaning of Research, Objectives of Research , Motivation in Research, Types of Research, Research Approaches, Significance of Research, Research Methods versus Methodology, Research and Scientific Method, Importance of knowing How Research is Done, Research Process , Criteria of Good Research, Problems Encountered by Researchers in India **Defining the Research problem :**Selecting the Problem, Necessity of Defining the Problem, Technique involved in defining a problem.

Unit-II Research Design: Meaning of Research Design, Need for Research Design, Features of a Good Design, Important Concepts Relating to Research Design, Different Research Designs, Basic Principles of Experimental Designs. **sampling Design:** Census and sample survey, Implications of a sample Design, Steps in sampling Design ,Criteria of selecting a sampling procedure, Characteristics of a Good sample Design, Different types of sample Designs, Random sample from an infinite universe, Complex random sampling Designs.

Unit-III Measurement and scaling Techniques: Measurement in Research , Measurement scales, Sources of Error in Measurement, Tests of sound Measurement, Technique of Developing Measurement Tools, scaling ,Meaning of scaling, scale classification Bases, Important scaling Techniques, Scale construction Techniques.

Unit-IV Method of data collection: Collection of primary data, observation Method, interview Method, Collection of Data through Questionnaires, collection of data through schedules, Difference between Questionnaires and schedules, Some other Methods of data collection, Collection of secondary data. Selection of Appropriate Method for data collection, case study method.

Unit-V Interpretation and Report writing: Meaning of Interpretation, Technique of Interpretation, Precaution in Interpretation, Significance of Report writing, Difference steps in Writing Report, Layout of the Research Report, Types of Reports, Oral Presentation, Mechanics of Writing a Computer Report, Precautions for Writing Research Reports. **The computer: Its Role in Research:** Introduction, The computer and computer Technology, The computer system, Important Characteristics, The Binary Number system ,Computer Applications, Computer and Research.

PRESCRIBED TEXT BOOK:
Research Methodology (second Revised Edition) – C.R.Kothari ; N ew Age Publishers,2004

REFERENCES
1. How To Get a Research Degree-Elphinstone and Schweitzer
2. Fundamentals of Research Methodology and statistics – Yogesh Singh.

M.Sc (Mathematics)
Semester I

OPERATIONS RESEARCH (M.Sc – I SEMESTER)

(Effective from 2013 – 2014)

UNIT I

Mathematical formulation of Linear Programming Problem - Graphical solution method - Exceptional cases - General linear programming problem - Canonical and standard forms of linear programming problem - The simplex method - Computational procedure : The simplex algorithm - Artificial variable techniques : Big M method - problem of degeneracy.

UNIT II

Mathematical formulation of the transportation problem - Triangular basis - Loops in a transportation table - Finding initial basic feasible solution (NWC, LCM and VAM methods) - Moving towards optimality - Degeneracy in transportation problems- Transportation algorithm (MODI method) - Unbalanced transportation problems - Assignment algorithm : Hungarian assignment method - Routing problems : Travelling salesman problem.

UNIT III

Two person zero sum games - Maximin Minimax principle - Games without saddle points (Mixed strategies) - Solution of 2 X 2 rectangular games - Graphical method - Dominance property - Algebraic method for m x n games - Matrix oddments method for m x n games.

UNIT IV

Replacement of equipment or asset that deteriorates gradually - Replacement of equipment that fails suddenly - Recruitment and promotion problem - Problem of sequencing - Problems with n jobs and 2 machines - Problems with n jobs and k machines - Problems 2 jobs and k machines

UNIT V

Non Linear Programming – Graphical Solution – Kuhn Tucker Conditions f or non negative constraints – Quadratic Programming – Wolfe's Modified Simplex Method – Beale's Method.

Prescribed Text Book:

Kanti Swarup, P.K.Gupta and Man Mohan, Operations Research, Sultan Chand & Sons, New Delhi,

Reference Books:

J.K.Sharma, Operation Research (Theory and Applications), Mac Millen Ltd
H.A.Taha, Operations Research, MacMillen..

PROGRAMMING IN C (M.Sc – I SEMESTER)
(Effective from 2013 – 2014)

UNIT I

Introduction – Importance of C language – Basic structure of C program – Constants – Variables – Data types – Declaration of Variables – Assigning values to Variables. Operators and Expressions: Introduction – Types of Operators – Arithmetic expressions – Evaluations of expressions – Precedence of arithmetic operators – Type conversions in expressions – Operator precedence and mathematical functions – Managing input and output operators.

UNIT II

Decision making and Branching: IF, SIMPLE IF, IF ELSE, Nesting of IF-ELSE, ELSE-IF ladder, SWITCH statement, the ?: operator, GO operator, GOTO statement. Decision making and looping: WHILE, DO, FOR statement, jumps in loops.

UNIT III

Arrays: Introduction – One dimensional array – Two dimensional arrays – initializing Two dimensional arrays – Multi dimensional arrays. User defined functions: Introduction – Need for user defined functions – Return values and their return types – Calling a function – Category of functions – Handling of non-integer functions – Nesting of functions – Recursion f unction – Function with arrays– Passing strings to functions: Pass by Value vs. Pass by Pointers.

UNIT IV

Structures and Unions: Introduction – Structure definition – Giving va lue to members – Structure initialization – Comparison of Structures – Structures and Functions – Size of Structures – Unions. Pointers: Introduction – Accessing the address of the variable – Declaring and initializing Pointers – Accessing through its Pointers – Pointer expression, increments and scaling factor – Pointer and Arrays – Pointer and Character strings – Pointer and Function – Pointer and Structures – Pointer on Pointers. File handling: Defining and Opening a File – Closing a File – input/output operations on Files.

UNIT V

Dynamic memory allocation and Linked lists: Introduction – Dynamic memory allocation – Concepts of linked lists – Advantage of linked lists – Types of linked lists – Pointers revisited – Basic test operators – Application of linked lists.

Precscribed Text Book:

E. Balaguruswamy, "Programming in ANSI C', Tata McGraw H ill Publishing Company.

Reference Books:

Yeswant Kanetkar: Let us C

Yeswant Kanetkar: Test your C Skills

ABSTRACT ALGEBRA (M.Sc I SEMESTER)

(Effective from 2013 – 2014)

UNIT I

Groups – Subgroups – Lagrange's Theorem – Homomorphism and normal subgroups – Factor groups – Homomorphism theorems – Cauchy's theorem

UNIT II

Direct products – Finite abelian groups – Conjucacy and Sylow's theorem – Symmetric group – Cyclic decomposition – Odd and even permutations –

UNIT III

Ring theory – Ideals – homomorphism – Quotient rings – Maximal I deals – Polynomial rings – Polynomials over the rational - Field of quotients – Integral dom ains

UNIV IV

Fields – Revision of vector spaces – Field extensions – Finite extensions – Roots of polynomials.

UNIV V

Finite fields – Euler φ function - Existence of primitive roots mod p - Existence of finite fields – Uniqueness of finite fields – Cyclotomic polynomials

Prescribed Text Book:

I.N.Herstein, Abstract Algebra, Prentice Hall

Reference Books:

JB Fraleigh, A First Course in Abstract Algebra, Narosa

Rudolf Lidl Gunter Pilz, Applied Abstract algebra, Springer

REAL ANALYSIS (M.Sc – I SEMESTER)

(Effective from 2013 – 2014)

UNIT I

Basic Topology - Finite, Countable, and Uncountable Sets - Metric Spaces - Compact Sets - Perfect Sets - Connected Sets

UNIT II

Continuity – Limits of Functions – Continuous Functions – Continuity and Compactness – Continuity and Connectedness – Discontinuities – Monotonic Functions – Infinite Limits and Limit at infinity

UNIT III

Differentiation – The derivative of real function – Mean Value Theorem – The continuity of derivatives – L'Hospital's Rule – Derivatives of Higher or der – Taylors Theorem – Differentiation of vector valued functions

UNIT IV

Definition and existence of the integral – Properties of the integral – Integration and Differentiation – Integration of vector valued functions – Rectifiable curves

UNIT V

Sequences and series of functions - Uniform Convergence - Uniform Convergence and Continuity - Uniform Convergence and Integration - Uniform Convergence and Differentiation – Equicontinuous Families of Functions - The Stone Weierstrass Theorem

Prescribed Text Book:

Walter Rudin, Principles of Mathematical Analysis, Tata McGraw Hill

Reference Books:

Apostol, Mathematical Analysis, Narosa

R. Bartle, The Elements of Real Analysis, John Wiley

SOFTWARE LAB I

OPERATIONS RESEARCH AND MANAGERIAL DECISION MAKING

(M.Sc – I SEMESTER AND II SEMESTER)

(EFFECTIVE FROM 2013 – 2014)

Problems to be solved using Microsoft Excel with Solver Add-in or Open Solver or other related packages

1. Linear Programming
2. Transportation Problems and its variants
3. Assignment Problems and its variants
4. Decision Theory
5. Network optimization problems
6. Project scheduling problems
7. Simulation

SOFTWARE LAB II

C PROGRAMMING AND NUMERICAL METHODS

(M.Sc – I SEMESTER AND II SEMESTER)

(EFFECTIVE FROM 2013 – 2014)

1. Find Sum & Average of 'N" numbers.
2. Find the factorial of given number.
3. Check whether the number is prime number or not.
4. Find the sum of digits using (i) For loop (ii) While loop
5. To add the first N odd numbers and even numbers
6. Find the biggest & smallest among "N" numbers.
7. Sort "N" numbers in Ascending order.
8. Generate the Fibonacci series and Evaluate Sine series.
9. Solution of transcendental and polynomial and transcendental equations
10. Solution of Linear simultaneous equations
11. Solution of ordinary differential equations
12. Numerical integration

Semester- II

MANAGERIAL DECISION MAKING (M.Sc – II SEMESTER)

(Effective from 2013 – 2014)

UNIT I

Decision Analysis: Problem, Process and Environment – Decisions under uncertainty – Decisions under risk – Decisions tree analysis – Decision making with Utilities.

UNIT II

Network Routing problems – Network flow problems – Minimal spanning tree problems – Shortest route problem – Maximal Flow Problem – Minimum cost flow problem

UNIT III

Network and basic components - Rules of network construction – Time calculations in networks -Critical path method (CPM) - PERT – PERT calculations - Negative float and negative Slack, Advantages of network (PERT/CPM)

UNIT IV

Queuing system - Characteristics of queuing system - Poisson process and exponential distribution - Classification of queues - Definition of transient and steady states - Poisson queues: M/M/1, M/M/C queuing systems

UNIT V

Simulation Models – Monte Carlo Simulation – Simulation of inventory Problems – Simulation of queuing systems – Simulation of maintenance problems – Simulati on of Job sequencing – Simulation of networks

Prescribed Text Book:

Kanti Swarup, P.K.Gupta and Man Mohan, Operations Research, Sultan Chand & Sons, New Delhi,

Reference Books:
H.A.Taha, Operations Research, MacMillen..
J.K.Sharma, Operation Research (Theory and Applications), Mac Millen Ltd

NUMERICAL METHODS (M.Sc – II SEMESTER)

(Effective from 2013 – 2014)

UNIT I

Algebraic and transcendental equations - Bisection method – Met hod of false position (Regula-Falsi Method) - Newton-Raphson Iterative method – Eigen Values and Eigen Vectors – Power Method – Jacobi Method.

UNIT II

Simultaneous Linear Equations - Direct methods of solution: Gauss elimination method, Gauss Jordan method – Iterative methods of solution: Jacobi's method, Gauss – Seidel method

UNIT III

Interpolation with equal intervals: Newton's forward interpolation formula – Newton's backward interpolation formula - Interpolation with unequal intervals: Lagrange's interpolation formula, Newton's divided difference formula - Numerical integration: Trapezoidal rule - Simpson's one-third rule - Simpson's three-eighth rule

UNIT IV

Ordinary Differential Equations - Picard's method – Taylor series method - Euler's method – Modified Euler's method – Runge's method – Runge-Kutta method – Predictor-corrector methods: Milne's method, Adams Bashforth method

UNIT V

Partial Differential Equations – Finite difference approximation to derivatives – Elliptic equations: Laplace Equation, Poisson's equation – Solution of Laplace's equation – Solution of Poisson's equation – Parabolic equations: Heat equation – Solution of heat equation – Hyperbolic equations: Wave equation – Solution of wave equation

Prescribed Text Book:

Grewal B.S, Higher Engineering Mathematics, 41st Edition, Khanna Publishers, New Delhi

Reference Books:

1. Gerald C.F and Wheatley P.O, Applied Numerical Analysis, Addison-Wesley Publishing Company
2. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons

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COMPLEX ANALYSIS (M.Sc – II SEMESTER)

(Effective from 2013 – 2014)

UNIT I

Limits and continuity – Analytic functions – Polynomials– Sequence s – Series – Uniform convergence – Power series – Exponential, Trigonometric and   logarithmic functions

UNIT II

Arcs an closed curves – Analytic functions in regions – Con formal mappings – Linear group – Cross ratio – Elementary conformal transformations – Elementary Riemann surfaces

UNIT III

Line integrals – Rectifiable arcs – Line integrals as functions of arcs – Cauchy's theorem for a rectangle – Index of a point with respect of a closed curve – The integral formula – Higher derivatives – Morera's theorem – Liouville's theorem.

UNIT IV

Removable singularities – Zeros and poles – The local mapping – Chains and cycles – Simple connectivity – Homology – The general statement of Cauchy's theorem – Locally exact differentials

UNIT V

The residue theorem – The argument principle – Evaluation of definite integrals: Integrals of the forms

$$\int_0^{2\pi} R(\cos q, \sin q) \, , \int_{-\infty}^{\infty} R(x)dx \, , \int_{-\infty}^{\infty} R(x)e^{ix}dx \, , \int_{-\infty}^{\infty} x^n R(x)dx$$

Prescribed Text Book:

L.V.Ahlfors, Complex Analysis, McGraw Hill

Reference Books:

J.B.Convey, Functions of One Complex Variable, Springer Verlag
Spiegel, Theory and problems of complex variables, McGraw Hill

TOPOLOGY (M.Sc – II SEMESTER)

(Effective from 2013 – 2014)

UNIT I

Countable and uncountable sets - Infinite sets and The Axiom of Choice - Continuum Hypothesis - Well-ordered sets - The maximum principle.

UNIT II

Basis for a topology - Order topology - Product topology – Subspace topology – Closed sets and limits – Continuous functions - Metric topology - Quotient topology.

UNIT III

Connected spaces - Components and local connectedness - Compact spaces - Limit point compactness - Local compactness

UNIT IV

The Countability Axioms - Separation Axioms - Normal spaces - The Urysohn Lemma - The Urysohn metrization theorem - The Tietze extension theorem

UNIT V

The Tychonoff theorem – Stone Cech Compatification

Text Book

J.R. Munkers : Topology, Prentice Hall of India

Reference Books

1. J. Dugundji : Topology (Allyn and Bacon, Boston, 1966.)
2. K. D. Joshi : Introduction to General Topology (Wiley Eastern Limited).

Semester -III
BUSINESS STATISTICS (M.Sc – III SEMESTER)

(Effective from 2013 – 2014)

UNIT I

Frequency Distributions - Quantitative Data Graphs - Qualitative Data Graphs - Scatter Plots - Measures of Central Tendency and Variability for Ungrouped and Grouped Data - Measures of Shape.

UNIT II

Introduction to Probability - Methods of Assigning Probabilities - Structure of Probability - Marginal, Union, Joint, and Conditional Probabilities - Addition Laws - Multiplication Laws - Conditional Probability - Bayes' Rule - Binomial Distribution - Poisson Distribution - Normal Distribution

UNIT III

Introduction to Hypothesis Testing - Testing Hypotheses about a Population Mean when variance is known or unknown - Testing Hypotheses About a Proportion - Testing Hypotheses About a Variance
- Hypothesis Testing and Confidence Intervals About the Difference in Two Means when variances are known or unknown - Statistical Inferences about Two Population Proportions - Testing Hypotheses About Two Population Variances

UNIT IV

Introduction to Design of Experiments - The Completely Randomized Design (One-Way ANOVA) - A Factorial Design (Two-Way ANOVA) – Correlation - Regression

UNIT V

Chi-Square Goodness-of-Fit Test - Chi-Square Test of Independence - Nonparametric Statistics - Runs Test - Mann-Whitney U Test - Wilcoxon Matched-Pairs Signed Rank Test - Kruskal-Wallis Test - Friedman Test - Spearman's Rank Correlation

Prescribed Text Book:

Srivastava, Shenoy and Sharma, Quantitative Techniques for Managerial Decisions, New Age International Publishers

Reference Books:

Black, Ken, Business Statistics for Contemporary Decision Making, Wiley Levin, Statistics for Management, Pearson Education

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Applied Mathematics (M.Sc.,Semester III)
(Effective from 2013 – 2014)

Unit I

Transforms of elementary functions : 1, t^n , e^{at} , $\sin at$, $\cos at$, $\sinh at$, $\cosh at$ - Properties of Laplace transforms: Linearity Property, First shifting property, Change of scale property – Transforms of derivatives - Transforms of integrals - Multiplication by t^n - Division by t - Evaluation of integrals by Laplace transform - Inverse transforms: Method of partial fractions – Other methods of finding inverse - Convolution theorem (Without proof) - Unit step function – Unit Impulse Function -Application to differential equations – Outline of applications of Laplace transforms in engineering.

UNIT II

Fourier integral theorem - Fourier Sine and Cosine integrals – Complex form of Fourier integral - Fourier integral representation of a function - Fourier transform – Fourier sine and Cosine transforms– Properties of Fourier Transforms: Linear property , Change of scale property, Shifting property - Parseval's identity for Fourier transforms

UNIT III

Standard z-transforms of 1, a^n, n^p – Linearity property – Damping rule – Shifting ru les – Multiplication by n - Initial and final value theorems– Inverse z –transforms – Convolution theorem(without proof) – Convergence of z-transforms – Two sided z-transform – Evaluation of inverse z-transforms: Power series method, Partial fraction method, Inversion integral method

UNIT IV

Euler's Formulae– Condition for Fourier expansion – Functions having points of discontinuity – Change of interval – Expansions of even and odd functions - Half-Range series – Parseval's formula– Root mean square value– Typical waveforms: Square wave form, Saw toothed waveform, Modified saw toothed waveform, Triangular waveform, Half wave rectifier, Full wave rectifier - Outline of applications of Fourier series in engineering

UNIT V

Functionals – Euler's Equation - Solutions of Euler 's equation – Geodesics – Isoperimetric problems– Several dependant variables – Functional involving higher order derivatives – Approximate solution of boundary value problems: Rayleigh-Ritz method.

Prescribed Text Book:

Grewal B.S, Higher Engineering Mathematics, 41st Edition, Khanna Publishers, New Delhi
Reference Books
Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons
Forsyth, Calculus of variations, Cambridge

DISCRETE MATHEMATICS (M.Sc – III SEMESTER)
(Effective from 2013 – 2014)

UNIT I

Product sets and partitions – Relations and digraph s – Paths in relations and digraphs – Properties of relations – Equivalence relations – Computer representation of relations and digraphs – Operations on relations – Transitive closure and Warshall's algorithm

UNIT II

Partially ordered sets – Extremal elements of partial ordered sets – Lattices – Finite Boolean algebra s – Functions of Boolean algebras – Circuit designs

UNIT III

Trees – Labeled trees – Tree searching – Undirected trees – Minimal spanning trees

UNIT IV

Graphs – Euler paths and circuits – Hamiltonian paths and circuits – Transport networks – Matching problems – Coloring problems

UNIT V

Semi groups (Definition only) – Product and quotients and semi groups (Definition only) - Languages– Representations of special grammars and languages – Finite state machines – Semi groups, machines and languages – Machines and regular languages – Simplification of machines

Prescribed Text Book:
Kolman B., Busby R.C. and Ross S., Discrete Mathematical Structures for Computer Science, Fifth Edition, Prentice Hall of India, New Delhi, 2006.
Reference Books
Kenneth H. Rosen, Discrete Mathematics and its Applications, Tata McGraw Hill
Susanna S. Epp, Discrete Mathematics with applications, Brookes/Cole Publishing Company

LINEAR ALGEBRA (M.Sc – III SEMESTER)

(Effective from 2013 – 2014)

UNIT I

Vector Spaces – Subspaces – Linear combinations and systems of linear equations – Linear dependence and Linear independence – Bases and dimension

UNIT II

Linear transformations – Matrix representation of a linear transformation – Composition of linear transformations and matrix multiplication – Invertibility and isomorphism – The change of coordinate matrix

UNIT III

Systems of linear equations: Theoretical and computational aspects – Determinants of order n – Eigen values and Eigen vectors – Diagonalizability

UNIT IV

Inner products and norms – The Gram Schmidt orthogonalization process – Adjoint of a linear operator –Normal and self adjoint operators- Unitary and orthogonal operators – Orthogonal projections and spectral theorem

UNIT V
The Jordon canonical form I - The Jordon canonical form II – The minimal polynomial

Prescribed Text Book:

Friedberg, Insel and Spence, Linear Algebra, Prentice Hall of India

Reference Books:

> Hoffman and Kunze, Linear algebra, Prentice Hall of India
> A. Usmani, Applied Linear Algebra, Merce Decker

SOFTWARE LAB III

BUSINESS STATISTICS

(M.Sc – III SEMESTER)

(Effective from 2013 – 2014)

Problems to be solved using Microsoft Excel with Megastat Add-in or Minitab or other related packages

1. Descriptive Statistics

2. Frequency Distributions

3. Probability

4. Testing of Hypothesis

5. Analysis of Variance

6. Correlation and Regression

7. Non Parametric Tests

SOFTWARE LAB IV
APPLIED MATHEMATICS
(M.Sc – III SEMESTER)
(Effective from 2013 – 2014)

In this software lab students get introduced to solving problems in applied mathematics using the following software. The student will receive a comprehensive introduction to all these software and will receive training in solving a variety of computational problems in engineering also.

1. SAGE (Software for Algebra and Geometry Experimentation)

2. MAXIMA (Computer Algebra System)

3. Peanut Software (Winplot, Winmat and Winstat)

4. SCILAB (Scientific Laboratory)

5. MATLAB (Matrix Laboratory)

FUNCTIONAL ANALYSIS (M.Sc – ELECTIVE - IV SEMESTER)

(Effective from 2013 – 2014)

UNIT I

Normed Spaces – Continuity of Linear Maps – Hahn Banach Theorems – Banach Spaces

UNIT II

Uniform boundedness principle – Closed graph and open mapping theorem – Bounded inverse theorem - Spectrum of a bounded operator

UNIT III

Duals and transposes – Duals of L ^{p}([a,b]) and C([a,b]) – Weak and weak* convergence-Reflexivity

UNIT IV

Compact Linear Maps – Spectrum of compact operators – Fredholm alternative – Approximate solutions

UNIT V

Inner Product spaces – Orthonormal sets – Approximation and optimization – Projection and Reisz representation theorems

Prescribed Text Book:

Limaye D, Functional Analysis, News Age International

Reference Books:

J.b.Conway, A course in functional analysis, Spring Verlag

Kreyszig, Introductory functional analysis with applications, Springer Verlag

APPLIED ABSTRACT ALGEBRA (M.Sc – ELECTIVE – IV SEMES TER)

(Effective from 2013 – 2014)

UNIT I

Lattices - Properties and Examples of Lattices - Distributive Lattices - Boolean Algebras - Boolean Polynomials - Minimal Forms of Boolean Polynomials

UNIT II

Applications of Lattices - Switching Circuits - Applications of Switching Circuits - Applications of Boolean Algebras

UNIT III

Revision of Groups, Rings and Fields – Rings and Polynomials - Finite Fields - Irreducible Polynomials over Finite Fields - Factorization of Polynomials over Finite Fields

UNIT IV

Coding Theory - Linear Codes - Cyclic Codes - Special Cyclic Codes - Decoding BCH Codes

UNIT V

Cryptology - Classical Cryptosystems - Public Key Cryptosystems - Discrete Logarithms and Other Ciphers

Prescribed Text Book:

Rudolf Lidl Gunter Pilz, Applied Abstract Algebra, Springer

Reference Books

Kolman B., Busby R.C. and Ross S., Discrete Mathematical Structures for Computer Science, Prentice Hall of India

Birkhoff, G. & T. C. Bartee, Modern Applied Algebra, McGraw-Hill.

DIFFERENTIAL EQUATIONS AND SPECIAL FUNCTIONS (M.Sc – ELECTIVE – IV SEMESTER)

(Effective from 2013 – 2014)

UNIT I

Operator D – Rules for finding complementary function – Inverse operator – Rules for finding particular Integral – Working procedure to solve the equation - Method of variation of parameters - Method of undetermined coefficients – Equations reducible to linear equations with constant coefficients: Cauchy's homogeneous linear equation , Legendre's linear equation - Linear dependence of solutions - Simultaneous linear equations with constant coefficients

UNIT II

Formation of partial differential equations – Solution of a partial differential equation – Equations solvable by direct integration – Linear equations of first order – Non linear equations of the first order
– Charpit's method - Homogeneous linear equations with constant coefficients –Rules for finding complementary functions – Rules for finding particular integral – Solution of homogeneous linear equation of any order.

UNIT III

Method of separation of variables – Vibration of a stretched string: Wave equation – Solution of Wave equation - D'Alembert's solution of wave equation – One dimensional heat flow – Solution of heat equation – Two dimensional heat flow – Solution of Laplace equation: temperature distribution in long plates, Temperature distribution in finite plates

UNIT IV

Validity of series solution - Series solution when $x=0$ is an ordinary point - Frobenius method (Series solution when $x=0$ is a regular singularity) - Bessel's equation (Bessels functions of the first andsecond kind) - Recurrence formulae for $J_n(x)$ - Expansions for J_0 and J_1 : Value of $J_{1/2}$ - Generating function for $J_n(x)$ - Equations reducible to Bessel's equation – Orthogonality of Bessel functions – Outline of applications of Bessel's functions in engineering.

UNIT V

Legendre's equation – Rodrigues formula – Legendre Polynomials – Generating functions for $P_n(x)$ – Recurrence formula for $P_n(x)$ - Orthogonality of Legendre Polynomials.

Prescribed Text Book:

B.S.Grewal, Higher Engineering Matheamtics,

Reference Books:

M.D.Raisinghania, Ordinary and Partial Differential Equations, S.Chand

AUTOMATA THEORY (M.Sc – ELECTIVE – IV SEMESTER)

(Effective from 2013 – 2014)

UNIT I

An informal picture of finite automata - Deterministic finite automata – Non-deterministic finite automata – An application: Text search – Finite automata with epsilon transitions

UNIT II

Regular expressions – Finite automata and regular expressions – Applications of regular expressions: Regular expressions in UNIX, Lexical analysis, Finding patterns in a text – Algebraic laws for regular expressions

UNIT III

Context free grammars – Parse trees – Applications of context free grammars: Parsers, The YACC parser generator, Markup languages, XML and document type definitions – Ambiguity in grammars and languages.

UNIT IV

Pushdown automaton – The languages of a Pushdown automaton – Equivalence of Pushdown automaton and Context free grammars – Deterministic pushdown automata.

UNIT V

Problems that computers cannot solve – The Turing machine – Programming techniques for Turing machines – Extensions to the basic Turing machine – Restricted Turing machines – Turing machines and computers

Note: The second edition of the prescribed text book differs drastically in treatment (Application oriented) from the first edition (Theory oriented). Hence the treatment of the second edition is to be followed. Questions are to be set on problem solving and not on the theoretical aspects.

Prescribed Text Book:

Hopcroft E.John, Motwani Rajeev, Ullman D. Jeffrey, Introduction to Automata theory, Languages and Computation, Second Edition, Pearson Education 2001

Reference Books

Anderson, A.James, Automata theory with modern applications, Cambridge Linz Peter, An introduction to formal languages and automata, Narosa PublishingHouse,NewDelhi.

MATHEMATICAL MODELING (M.Sc – ELECTIVE – IV SEMESTE R)

(Effective from 2013 – 2014)

UNIT I
MODELING CHANGE

Topic	Examples
Modeling Change with Difference Equations	1. A Savings Certificate 2. Mortgaging a Home
Approximating Change with Difference Equations	1. Growth of a Yeast Culture 2. Growth of a Yeast Culture Revisited 3. Spread of a Contagious Disease 4. Decay of Digoxin in the Blood Stream 5. Heating of a Cooled Object
Solutions to Dynamical Systems	1. A Savings Certificate Revisited 2. Sewage Treatment 3. Prescription of Digoxin 4. An Investment Annuity Revisited 5. A Checking Account
Systems of Difference Equations	1. A Car Rental Company 2. The Battle of Trafalgar 3. Competitive Hunter Model 4. Voting Tendencies of the Political Parties

UNIT II

Topic	Examples
Mathematical Models	1. Vehicular Stopping Distance
Modeling Using Proportionality	2. Kepler"s Third Law
Modeling Using Geometric Similarity	1. Raindrops from a Motionless Cloud 2. Modeling a Bass Fishing Derby
Automobile Gasoline Mileage - Body Weight & Height, Strength & Agility – fitting Models to Data Graphically – Analytic Methods of Model Fitting – applying the Least Squares Criterion – Choosing a Best Model	

EXPERIMENTAL MODELING		
Topic		**Examples**
Harvesting in the Chesapeake	1.	Harvesting Bluefish
Bay and Other One Term	2.	Harvesting Blue Crabs
Models		

High Order Polynomial Models	1.	Elapsed Term of a Tape Recorder
Smoothing : Low Order Polynomials	1. 2. 3. 4.	Elapsed Time of a Tape Recorder Revisited Elapsed Time of a Tape Recorder Revisited Vehicle Stopping Distance Growth of a Yeast Culture
Cubic Spline Models	1.	Vehicle Stopping Distance Revisited

UNIT IV

GRAPHS OF FUNCTIONS AS MODELS

Topic	Examples
An Arms Race	Civil Defense Mobile Launching Pads Multiple Warheads MIRVs Revisited: Counting Warheads
Modeling an arms race in Stages – Managing Non Rene wable Resources – Effects of Taxation on the Energy Crisis – A Gasoline Shortage and Taxation	

UNIT V

MODELING WITH A DIFFERENTIAL EQUATION

Topic	Examples
Population Growth – Prescribing Drug Dosage – Braki ng Distance Revisited	
Graphical Solutions of Autonomous Differential Equations	1. Drawing a Phase Line and Sketching Solution Curves 2. Cooling Soup 3. Logistic Growth Revisited
Numerical Approximation Methods	1. Using Euler's Method 2. A Savings Certificate Revisited

Prescribed Text Book:

Giardano, Weir & William, A First Course in Mathematical Modeling, Thompson Asia & China Press (First Published by Brookes & Cole, Thompson's Learning)

Reference Books:

1. Bender, An Introduction to Mathematical Modeling
2. Caldwell, Mathematical Modeling (Case Studies and Projects)

RANDOM PROCESSES (M.Sc – ELECTIVE – IV SEMESTER)

(Effective from 2013 – 2014)

UNIT I

Special discrete distributions - Binomial distribution – Poisson distribution – Geometric distribution – Hyper geometric distribution – Special continuous distributions – Uniform distribution – Exponential distribution – Erlang distribution – Weibull distribution – Normal distribution

UNIT II

Classification of random processes – Methods of description of a random process –Special classes of random processes – Average values of random processes – Analytical representation of a random processes – Autocorrelation function and its proper ties – Cross correlation function and its properties

UNIT III

Ergodicity – Mean Ergodic process – Correlation Ergodic process – Distribution Ergodic process – Power spectral density function and its properties – System in the form of convolution – Unit impulse response of the system

UNIT IV

Poisson process – Probability law for the Poisson Process – Second order probability function of a homogeneous Poisson process – Mean and autocorrelation of the Poisson process – Properties of Poisson process - Markov process – Markov chain – Chapman Kolmogorov theorem (without proof) – Classification of states of a Markov chain

UNIT V

Gaussian process – Processes depending on stationary Gaussian process: Square law detector process, Full wave linear detector process, Half wave linear detector process, Hard limiter process – Band pass process (Signal) - Narrow band Gaussian process - Quadrature representation of a WSS process - Noise in communication systems – Thermal noise – Filters

Prescribed Text Book:

Veerarajan. T.," Probability, Statistics and Random Processes, Third Edition, Tata McGraw-Hill Publishers, New Delhi 2008

Reference Books:

Gubner, John, Probability and random process for electrical and computer engineers, Cambridge Papoulis, Probability, Random Variables and Stochastic Processes, McGraw Hill.

ADVANCED STATISTICS (M.Sc – ELECTIVE – IV SEMESTER)

(Effective from 2013 – 2014)

UNIT I

Random experiment – Mathematical, statistical and axiomatic definitions of probability – Conditional probability – Independent events - Theorem of total probability – Theorem of probability of causes: Bayes's theorem – Bernoulli's trials – De Moivre-La place approximation – Generalization of Bernoulli's theorem multinomial distribution

UNIT II

Discrete random variable – Probability mass functions of Binomial, Poisson, Pascal and Geometric distributions - Continuous random variable – Probability density function of Uniform, Normal, Gamma, Erlang, Rayleigh, Maxwell and Laplace distributions - Cumulative distribution function

UNIT III

Two dimensional random variables – Probability mass function – Joint probability density function – Cumulative distribution function – Marginal probability distribution – Conditional probability distribution – Independent random vectors – Function of random variable

UNIT IV
Measures of central tendency – Mathematical expectation and moments – Measures of dispersion – Coefficient of variation – Skewness – Kurtosis – Pearson's shape coefficients – Expected values of a two dimensional random variables – Linear correlation – Correlation coefficient – Rank correlation coefficient – Regression – Equation of the regression line

UNIT V
(STATISTICAL INEQUALITIES)

Characteristic function – Moment generating function – Cumulative generating function – Bounds on probability: Tchebycheff, Bienayme's, Schwartz and Cauchy-Schwartz inequalities (without proof) – Convergence concepts and central limit theorem

Prescribed Text Book:
Veerarajan. T.," Probability, Statistics and Random Processes, Third Edition, Tata McGraw-Hill Publishers, New Delhi 2008
Reference Books:
Gupta S.P, Statistical methods, Sultan Chand & Sons
Papoulis, Probability, Random Variables and Stochastic Processes

INTRODUCTION TO BIO INFORMATICS
(M.Sc – ELECTIVE –IV SEMESTER)
(Effective from 2013 – 2014)

UNIT I

Important contributions - sequencing development - aims and tasks of Bioinformatics - applications of Bioinformatics - challenges and opportunities - Computers and programs – internet - world wide web – browsers - EMB net – N CBI.

UNIT II

Importance of databases - nucleic acid sequence databases - protein sequence data bases - structure databases - bibliographic databases and virtual library - specialized analysis packages

UNIT III

Sequence analysis of biological data- models for sequence analysis and their biological motivation- methods of alignment - methods for optimal alignments; using gap penalties and scoring matrices-multiple sequence alignment – introduction - tools for msa - application of multiple sequence alignment.

UNIT IV

Gene - predictions strategies - protein prediction strategies - molecular visualization-Homology - phylogeny and evolutionary trees - Homology and similarity - phylogeny and relationships

UNIT V

Discovering a drug - target identification and validation - identifying the lead compound - Optimization lead compound - chemical libraries.

Prescribed   Text Books:
1. S.C. Rastogi & others, Bioinformatics- Concepts, Skills, and Applications, CBS Publishing, 2003.
2. S. Ignacimuthu, S.J., Basic Bioinformatics, Narosa Publishing House, 1995.

References Books:
T K Attwood, D J parry-Smith, Introduction to Bioinformatics, Pearson Education, 1st Edition, 11th Reprint 2005.
C S V Murthy, Bioinformatics, Himalaya Publishing House, 1st Edition 2003.
Stephen A. Krawetz, David D. Womble, Introduction To Bioinformatics A Theoretical and Practical Approach, Humana Press, 2003.
Hooman H. Rashidi, Lukas K. Buehler, Bioinformatics Basics-Applications in Biological Science and Medicine, CRC press, 2005.

APPLIED GRAPH THEORY (M.Sc – ELECTIVE – IV SEMESTER)
(Effective from 2013 – 2014)

UNIT I

Graphs - Subgraphs - Walks, Paths, Circuits - Connected graphs, Disconnected graphs, Components -Euler graphs - Operations on graphs - Hamiltonian paths and circuits - Trees - Properties of trees -Pendant vertices, Distance and centres in a Tree - Rooted and binary trees - Spanning trees - Fundamental circuits - Spanning trees in a weighted graph : Kruskal's algorithm.

UNIT II

Cut sets - Properties of cut sets - Fundamental circuits and cut sets - Connectivity and separability - Planar graphs - Kuratowski's two graphs - Representations and detection of planar graphs - Geometric and combinatorial duals.

UNIT III

Incidence matrix - Circuit matrix - Application to a switching network - Cut set matrix - Path matrix - Adjacency matrix - Chromatic number - Chromatic Partitioning - Chromatic polynomial - Matching - Coverings - Five color theorem

UNIT IV

Types of digraphs - Digraphs and relations - Directed paths and connectedness - Euler digraphs - Trees with directed edges - Fundamental circuits in a digraphs - Adjacency matrix of a digraph - Paired comparisons and tournaments.

UNIT V

Computer representation of a graph - Basic algorithms : connectedness and components, spanning tree, fundamental circuits, cut vertices and separability, directed circuits- Shortest path algorithms - Depth first search on a graph - Planarity testing - Isomorphism.

Prescribed Text Book:

Narsingh Deo, Graph Theory (With Applications to Engineering and Computer Science), Prentice Hall of India

Reference Books:
Harary, Graph Theory, Narosa Publishing House, New Delhi, 1998.
Douglas B. West, Introduction to Graph Theory, Prentice Hall of India, 1999.

FUZZY MATHEMATICS (M.Sc – ELECTIVE – IV SEMESTER)

(Effective from 2013 – 2014)

UNIT I

Overview of crisp sets – Basic types of fuzzy sets – Concepts of fuzzy sets – Properties of alpha cuts representations of fuzzy sets – Extension principle for fuzzy sets

UNIT II

Operations on fuzzy sets – Fuzzy complements – Fuzzy intersections - Fuzzy unions – Fuzzy numbers – Arithmetic operations on fuzzy numbers – Fuzzy equations

UNIT III

Fuzzy relations – Fuzzy equivalence relations – Fuzzy compatibility relations – Fuzzy ordering relations – Fuzzy morphisms

UNIT IV

Fuzzy measures – Evidence theory – Possibility theory – Fuzzy sets and possibility theory

UNIT V

Overview of classical logic – Multi valued logics – Fuzzy propositions – Fuzzy quantifiers – Linguistic hedges – Inference from conditional fuzzy propositions – Inference from conditional and qualified propositions – Inference from quantified propositions

Prescribed Text Book:

Klir and Yuan, Fuzzy sets and fuzzy logic, Prentice hall of India

Reference Books:

Zimmerman, Fuzzy Set Theory and its applications, Kluwer

F. Martin McNeill, Ellen Thro, Fuzzy Logic A Practical Approach, AP Professional

B.Sc (Mathematics)
SEM-I
Analytical Geometry and Trigonometry

L	P	T	C
4	0	1	4

UNIT-I

Polar equations- Straight lines-Circles- Conics- Tangent-Normal

UNIT-II

Rectangular Cartesian coordinates-Direction cosines of a line – The plane

Unit-III

The straight line – Plane and straight line- Coplan ar lines

Unit- IV

Sphere – Cone- Cylinder

UNIT-V

Expansions- Hyperbolic functions- Logarithm of complex numbers

Recommended Text

T.K.Manickavachagom Pillay & others. (2004) *Analytical Geometry* (Two & Three Dimensions) S.Viswanathan Printers & Publishers Pvt. Ltd. Chennai.

S.Narayanan, Trigonometry

Reference Books

1. P.Duraipandian and LaxmiDuraipandian *Analytical Geometry-2D,* Asia Publishing company, Bombay

2. P.Duraipandian and LaxmiDuriapandian *Analytical Geometry-3 D*, Emerald Publishers, Chennai.

3. G.B.Thomas and R.L.Finney. *Calculus and Analytic Geometr*y, Addison Wesley , Mass. (Indian Print).

4. P.R.Vittal *Coordinate Geometry.* Margham Publishers, Chennai

Calculus

L	P	T	C
4	0	1	4

UNIT-I

Partial differentiations, Total differentials; Jacobians; Maxima and Minima of functions of 2 and 3 independent variables - necessary and sufficient conditions (without proof); Lagrange's method (without proof) - simple problems on these concepts.

UNIT-II

Envelopes-Curvature-Circle, radius and centre of curvature – Cartesian formula for the radius of curvature- The coordinates of the centre of curvature

UNIT-III

Evolutes and involutes- radius of curvature in polar coordinates- p-r equation- Pedal equation of curve-chord of curvature

UNIT-IV

Linear asymptotes – Singular points- Tracing of cur ves

Unit-V

Reduction formulae- Bernoulli's formula

TEXT BOOKS:

1.   Calculus volume-1 by T.K. ManikavasagamPilly, S.Viswanathan (Printers and Publishers Pvt Ltd) 2010 print

2.   Calculus Volume-II by T.K. ManikavasagamPilly, S.Viswanathan(Printers and Publishers Pvt Ltd) 2010 print

Unit-I ; Volume I
Unit-II: Volume I: Chapter X; Section 1, Section 2-2.1 to 2.4
Unit-III : Volume I : Chapter X; Section 2.5-3.1
Unit-IV: Volume I Chapter XI, XII and XIII
Unit- V: Volume II; Chapter1; Sections 13-15.1

Allied Statistics-I

L	P	T	C
4	0	1	4

Unit I   Theory of Probability

Introduction-Definition of various terms – Axiomatic approach to Probability – Probability – Conditional Probability- Laws of addition and Multiplication – Bayes Theorem

Unit II Random variables and Distribution Functions

Random variable – Distribution – Discrete Random Variable – Continuous Random Variable

Unit III Mathematical Expectation and Generating Functions

Mathematical Expectation – Addition Theorem of Expectation – Multiplication Theorem of Expectation – Covariance – Expectation of Linear Combination of Random Variables – Variance of Linear Combination of Random variables – Moment Generating Function

Unit IV Theoretical Discrete Distributions

Binomial Distribution – Poisson Distribution-Geometric distribution-moments.

Unit V   Theoretical Continuous Distributions

Normal Distribution - Exponential distribution-moments.

Prescribed Text Book:

Veerarajan. T.," Probability, Statistics and Random Processes, Third Edition, Tata McGraw-Hill Publishers, New Delhi 2008

Reference Books:

Elements of Mathematical statistics by S.C. Gupta and V.K.Kapoor by Sultan Chand & sons, third edition.
Gupta S.P, Statistical methods, Sultan Chand & Sons
Sheldon Ross,   First Course in Probability , Pearson Publications

Classical Algebra

L	P	T	C
4	0	1	4

Unit-I

Vandermonde's theorem- Binomial theorem for rational index- Particular cases of the Binomial expansion- Sign of terms in the Binomial expansion- Application of the Binomial theorem to the summation of series- Sum of the coefficients – Approximate values-Exponential series-Summation-The logarithmic series

Unit-II

Theory of equations- Remainder theorem-Every n^{th} degree equation has exactly n roots and no more-Relation between roots and coefficients of equations- symmetric function of the roots-Sum of powers of roots of an equation- Newton's theorem on sum of powers of the roots

Unit-III

Transformation of equations-Reciprocal equations- Reciprocal roots- Removal of terms-Transformation in general- Descarte's Rule of sings - Rolle's theorem and its applications-Multiple roots

Unit-IV

Strum's theorem-Solution of numerical equations-Horner's method (upto 2 decimals)

Unit-V

General solution of the cubic equations- Cardon's method- Solution of biquadratic equations-Ferrari's method

Text Book

A Text Book of Algebra by T.K. Manickavasagam Pillai

Vector Calculus and Fourier Series

L	P	T	C
4	0	1	4

UNIT-I

Double Integrals in polar and Cartesian coordinates- change of order of integration- polar and Cartesian coordinates- triple integrals- Beta and Gamma functions- properties- simple problems

UNIT-II

Vector differentiation- Gradient- Divergence- Curl

UNIT-III

Vector integration – Line integral- Surface integral - Volume integral

UNIT-IV

Green's theorem- Stoke's theorem- and Gauss divergence theorem (without profs) and simple applications

UNIT-V

Fourier series- The Cosine and Sine series- Even and Odd functions- Half range series

Recommended Text
B.S.Grewal. *Higher Engineering Mathematics* (2002), Khanna Publishers, New Delhi.

Reference Books

1. G.B.Thomas and R.L.Finney. (1998) *Calculus and Analytic Geometry*, Addison Wesley (9th Edn), Mass. (Indian Print).

2. M.K.Venkataraman. (1992) *Engineering Mathematics-Part B*. National Publishing Company, Chennai.

3. P.R.Vittal. (2004) *Vector Calculus, Fourier series and Fourier Transform*. Margham Publications, Chennai.

Allied Statistics - II

L	P	T	C
4	0	1	4

Unit I

Correlation- scatter diagram- Karl Pearson coefficient of correlation-Calculation of the correlation coefficient for a bivariate frequency distribution- Rank correlation

Unit II

Regression- Lines of regression – Regression coefficients- properties of regression coefficients- Angle between two lines of regression.

Unit III

Theory of Attributes- Introduction – Notations – Dichotomy- classes and class frequencies – Order of classes and class frequencies- Class symbol as operators – Consistency of data- Independence of attributes- Association of attributes.

Unit IV

Test of significance- Null hypothesis- Errors in sampling- Critical region and level of significance-Tests of significance for large and small samples - Standard error – Test of significance for single mean, difference of mean and difference of standard deviations.

Unit V

Exact sampling distributions- Chi- square variate- Derivation of the chi-square distribution M.G.F. of χ^2- distribution- Chi-square test for independence of attributes and goodness of fit.

Text book

Elements of Mathematical Statistics by S.C. Gupta and V.K.Kapoor by Sultan Chand & sons, third edition.

Semester III
Differential Equations and its Applications

L	P	T	C
4	0	1	4

Unit I

Differential equation of first order –Equation of the first order and first degree, Homogeneous equations, exact differential equations- Integrating factors- linear equations- Bernoulli's equation-equation solvable for p, y and x- Clairaut's equation.

Unit II

Linear equation of second order with constant coefficients - Methods of finding complementary functions – Methods of finding particular integrals . Homogeneous linear equations – Euler – Cauchy equations - Linear equations with variable coefficients

Unit III

Method of variation of parameters- Simultaneous linear differential equations.

Unit IV

Applications of differential equations- Orthogonal trajectories- Growth and decay- Continuous compound interest- The Brachistochrone problem- Tautochronous property of the cycloid- Simple electric circuits- Falling bodies- simple harmonic motion – Simple pendulum-

Unit V

Differential equations- Formation of partial differential equations- Methods of solving first order partial differential equations- Some standard forms- Charpit's method.

Recommended Texts

1. B.S. Grewal, Higher Engineering Mathematics, Khanna Publishers, New Delhi.
2. Sheply L.Ross, Differential Equations, III Edition John Wiley & Sons, New York.

Reference Books

1. M.D. Raisinghania, Ordinary and Partial Differential Equations, S.Chand and Co., New Delhi.
2. M.R.Spiegel , Advanced Mathematics for Engineers and Scientists, Tata McGraw Hill Edition, New Delhi

Numerical Methods

L	P	T	C
4	0	1	4

Unit I
Solution of equations
Solution of algebraic and transcendental equations - Bisection method – Method of false position (Regula-Falsi Method) - Newton-Raphson Iterative method - Solution of linear simultaneous equations - Direct methods of solution: Gauss elimination method , Gauss – Jordan method – Iterative methods of solution : Jacobi's method , Gauss – Seidel method

Unit II
Finite differences
Introduction – First differences – Higher Differences – Difference Tables-Backward Differences-Central Difference Notation – Properties of the operator Δ - Differences of a polynomial – Factorial Polynomials – Simple Problems – Error Propagation i n a difference table – Operators E, ∇, δ, μ – Basic Properties.

Unit III
Interpolation
Introduction- Linear Interpolation- Gregory Newton's forward interpolation formula – Newton's backward interpolation formula – equidistant terms with one or more missing values – error in polynomial interpolation- error in Newton's interpolation formulae

Central difference interpolation formulae:
Central difference tables- Central difference interpolation formulae- Gauss's Forward and Backward Interpolation Formulae – Stirling's Formula- Bessel 's Formula – Laplace – Everett Formula- Simple Problems.

Unit IV
Interpolation with Unequal Intervals
Divided difference – properties of divided differences – Newton's Interpolation formula for unequal intervals- Lagrange's interpolation formula- Inverse Interpolation – simple problems.

Unit V
Numerical differentiation: Introduction - Newton's Forward and Backward difference formula to compute the derivatives upto second order – Derivat ives using Strilings formula- Maxima and Minima of a tabulated function
Numerical Integration: The Trapezoidal rule -Simpson's one-third rule - Simpson's three-eighth rule – Truncation error in Simpson's formula.

Recommended Text
M.K. Venkataraman. (1992) *Numerical methods for Science and Engineering* National Publishing Company, Chennai.

Reference Books

1. S. Arumugham. (2003) *Numerical Methods*, New Gamma Publishing, Palamkottai.
2. H.C. Saxena. (1991) *Finite differences and Numerical analysis* S.Chand& Co., Delhi
3. A.Singaravelu (2004). *Numerical Methods* Meenakshi Agency, Chennai
4. P.Kandasamy, K.Thilagavathy (2003) Calculus of Finite difference & Numerical Analysis, S.Chand& Company Ltd., New Delhi-55.

Semester-IV
Partial Differential Equations and its Transform Techniques

L	P	T	C
4	0	1	4

Unit-I
Homogeneous linear partial differential equations with constant coefficients – Methods of finding C.F. – Methods of finding P.I.

Unit II

Application of partial differential equations- Method of separation of variables – Vibration of a stretched string: Wave equation- solution of wave equation-D'Alembert's solution of wave equation – One dimensional heat flow – Solution of heat equation

Unit III
Laplace transform – standard forms – linear property – first shifting theorem – multiplication by t^n – Division by t – Laplace transform of derivatives an d integrals

Inverse Laplace transform (usual types)- applications of Laplace transform to solution of first and second order linear differential equations(constant co efficient)

Unit IV

Fourier transform-Infinite Fourier transform (complex form, no derivation) - sine and cosine transforms- simple properties of fourier transforms – convolution theorem- parseval's identity.

Unit V
Z – Transforms-Standard z-transforms of 1, a^n , n^p – Linearity property – Damping rule – Shifting rules – Multiplication by n - Initial and final value theorems (without proof) – inverse z –transforms – Convolution theorem (without proof) – Convergence of z-transforms – Evaluation of inverse z-transforms: Power series method, Partial fraction method, inversion integral method

Recommended Texts

B.S.Grewal Higher Engineering Mathematics, Khanna Publishers, New Delhi.
Reference Books
1. M.K.Venkataraman. *Engineering Mathematics-Part B*. National Publishing Company, Chennai.

L	P	T	C
4	0	1	4

Graph Theory

Unit I

Graphs and Subgraphs – Introduction – Definition an d Examples – Degree of a vertex – subgraphs – isomorphism of Graphs – Ramsey Numbers – Independent sets and Coverings

Unit-II

Intersection Graphs and Line Graphs – Adjacency an d Incidence Matrices – Operations on Graphs – Degree Sequences – Graphic Sequences

Unit III

Connectedness **-**Introduction – Walks, Trails, paths, components, bridge, block - Connectivity

Unit IV

Eulerian Graphs – Hamiltonian Graphs

Unit V

Trees – Characterization of Trees – Centre of a Tree – Planarity – Introduction, Definition and Properties – Characterization of Planar Graphs – Thickness – Crossing and Outer Planarity

Recommended Text

S.Arumugam and S.Ramachandran, "Invitation to Graph Theory", SITECH Publications India Pvt. Ltd., 7/3C, Madley Road, T.Nagar, Chennai - 17

Reference Books

1. S.Kumaravelu, SusheelaKumaravelu, Graph Theory, Publishers, 182, Chidambara Nagar, Nagercoil-629 002.
2. S.A.Choudham, A First Course in Graph Theory, Macmillan India Ltd.
3. Robin J.Wilson, Introduction to Graph Theory, Longman Group Ltd.
4. J.A.Bondy and U.S.R. Murthy, Graph Theory with Applications, Macmillon, London.

Semester V
Statics

Unit I

L	P	T	C
4	0	1	4

Types of forces – magnitude and direction of the resultant of the forces acting on a particle -Forces acting at a point – Lami's theorem, equilibrium of a particle under several coplanar forces.

Unit II

Parallel forces- moments - couples

Unit III

Equilibrium of three forces acting on a rigid body- Coplanar forces acting on a rigid body.

Unit IV

Friction-Laws of friction- angle of friction-equilibrium of a body, Limiting friction

Unit V

Centre of gravity of simple uniform bodies – triangular lamina- rod forming a triangular- trapezium-centre of gravity of circular arc- elliptic quadrant-solid hemisphere, cone-hollow hemisphere and cone,Equilibrium of strings – catenary.

Recommended Text

M.K. Venkataraman (1990) *Statics*. A Rajhans Publications. (16th Edn), Meerut.

Reference Books

1. S. Narayanan, R. Hanumantha Rao, K. Sitaraman, P. Kandaswamy, *Statics*, S. Chand and Company Ltd, New Delhi.
2. S. L. Loney, *An Elementary Treatise on Statics*, Combridge University Press, 1951
3. A.V. Dharmapadam(1991) *Mechanics*. S. Viswanathan Printers & Publishers. Chennai.
4. Joseph F. Shelley (2005) *Vector Mechanics for Engineers Vol-I: Statics*, Tata McGraw Hill Edition, New Delhi.

Sequences and Series

L	P	T	C
4	0	1	4

Unit I

Sets and elements-Operations on sets- functions-Real-valued functions-Equivalence, count ability-Real numbers- Least upper bounds

Unit II

Definition of sequence and subsequence- Limit of sequence- Convergent sequences- Divergent sequences- Bounded sequences-Monotonic sequences-Operations on convergent sequences-Operations of divergent sequences

Unit III

Limit superior and limit inferior- Cauchy's sequences- summability of sequences

Unit IV

Series of real numbers- Convergence and divergence-series of nonnegative terms- Alternating series-Conditional convergence and absolute convergence-Rearrangement of series- Test for absolute convergence

Unit V

Series whose terms form a non increasing sequence- summation by parts- (C,1) summability of series- The class l^2

Recommended Text

Methods of real analysis- Richard R. Goldberg(oxford and IBH Publishing Co)

Reference Books

1. G.B.Thomas and R.L.Finney. (1998) *Calculus and Analytic Geometry*, Addison Wesley (9th Edn), Mass. (Indian Print).

2. M.K.Venkataraman. (1992) *Engineering Mathematics-Part B*. National Publishing Company, Chennai.

Complex Analysis

L	P	T	C
4	0	1	4

Unit I

Complex numbers: Point at infinity, stereographic projection
Analytic function

Functions of complex variable, mappings, Limits, theorems of limits without proof, continuity of a complex function - Derivative of a complex function, differentiation formula, Cauchy-Riemann equations, sufficient conditions Cauchy – Riemann equations in polar form, Analytic functions – Harmonic functions Orthogonal system

Unit II

Mapping by elementary functions

Linear functions, the function, linear fractional transformations, the functions $w = z^n$, $w = e^z, 1/z$, special linear fractional transformations.

Unit III

Integration of complex functions

Definite integrals, contours, line integrals, Cauchy- Goursat theorem(without proof) – Cauchy's integral formula – derivatives of analytic function s, maximum moduli of functions.

Unit IV

Series: Convergence of sequences and series (theorems without proof) Taylor's series, Laurent's series – Zeros of analytic functions.

Unit V

Residues and poles

Residues – Residue theorem, the principal part of functions, poles, evaluation of improper real integrals, improper integrals, integrals involving trigonometric functions, definite integrals of trigonometric functions.

Recommended Text

Dr.S.Arumugam, "Complex Analysis", Scitech Publications, Pvt Ltd. chennai.2003.

Reference Books

1. R.V.Churchill and J.W.Brown, (1984) *Complex Variables and Applications.* McGraw Hill International Book Co., Singapore. (Third Edition)
2. P. Duraipandian and LaxmiDuraipandian (1976) Complex Analysis: Emerald Publishers, Chennai
3. S. Ponnusamy. (2000) Foundations of Complex Analysis, Narosa Publishing House, New Delhi
4. Murray R. Spiegel. (2005) Theory and Problems of Complex Variable. Tata-Mcgraw Hill Edition, New Delhi.

Semester- VI

Dynamics

L	P	T	C
4	0	1	4

Unit I Kinematics

Kinematics of a particle- velocity – Acceleration – Relative Velocity – Angular Velocity – Newton's Laws of Motion – Equation of Motion – Rectilinear Motion under constant acceleration - Motion in a Resisting medium

Unit II Projectiles

Projectiles – Path of a projectile - Time of Flight – Horizontal Range – Range on an inclined plane

Unit III Impulsive Motion and Impact

Impulsive Forces – Collision of Elastic Bodies: collision of two smooth spheres – Direct and Oblique Impact

Unit IV Motion in a Circle

Motion in a Circle – Simple Harmonic Motion

Unit V Central Forces

Motion under the action of Central Forces – Central Orbit as a plane curve – p-r equation of a central orbit – finding law of force for a given central or bit – finding the central orbit for a given law of force

TEXT BOOK

Dynamics by Dr. M. K. Venkatraman, Agasthiyar Publications, Thirteenth Edition

REFERENCE BOOKS

1. Mechanics - P. Duraipandian and others, S. Chand and Co.

2. Dynamics - K. Viswanathanaik and M.S. Kasi, Emerald publilshers.

3. Dynamics - A.V. Dharmapadam, S. Viswanathan Publishers

Real Analysis

L	P	T	C
4	0	1	4

Unit I

Limit of a function on the real line- Metric spaces- Limits in metric spaces- Functions continuous at a point on the real line- Functions continuous on metric spaces-open sets- closed sets

Unit II

More about open sets-Connected sets-Bounded sets and totally bounded sets – Complete metric spaces

Unit III

Compact metric spaces- Continuous functions on compact metric spaces- Continuity of the inverse function – Uniform continuity

Unit IV

Sets of measures zero – Definition of Riemann integral – Existence of Riemann integral- Properties of Riemann integral

Unit-V

Derivatives- Rolle's theorem – The law of the mean - Fundamental theorem of calculus- Improper integrals- Taylor series- L'Hospital's rule

Recommended Text
Methods of Real Analysis- Richard R. Goldberg(oxford and IBH Publishing Co)

Reference Books
1.A course of Mathematical Analysis, Shanthi Narayan and P.K.Mittal, S.Chand & Company
2. Bartle and Sherbett, *Introduction to Real Analysis.*
3. Rudin, *Principles of Mathematical Analysis.*
4. Spivak, *Calculus on Manifolds.*
5. Chapter 1 of S. Kumaresan, *A Course in Differential Geometry and Lie Groups.*
6. L. Cohen and Ehrlick, *Structure of the Real Number System.*
7.T. Apostol, *Calculus, vols I and II*

Linear Algebra

L	P	T	C
4	0	1	4

Unit I

Introduction – Vector spaces- Definition and Examples – Subspaces- Linear transformation

Unit II

Span of set – Linear Independence- Basis and Dimension- Rank, Nullity and Matrix of linear transformation.

Unit III

Elementary transformations- Rank of a matrix- Simultaneous linear equations – Bilinear forms and Quadratic forms

Unit IV

Characteristic equation and Cayley Hamilton theorem- Eigen values and Eigen vectors

Unit V

Inner product spaces- Definition and Examples- Orthogonally- Orthogonal complement

Recommended Text

I.N.Herstein. *Topics in Algebra*. Wiley Eastern Ltd. New Delhi.

Reference Books

1. S.Arumugam. *Modern Algebra.* Scitech Publications, Chennai.
2. J.B.Fraleigh *A First Course in Algebra* (3rd Edition) Addison Wesley. Mass. (Indian Print)
3. S.Lipschutz *Beginning Linear Algebra*, Tata McGraw Hill Edition, New Delhi.
4. M.L.Santiago. *Modern Algebra,* Tata McGraw Hill, New Delhi.

5. Surjeet Singh and QaziZameeruddin. *Modern Algebra.* Vikas Publishing House Pvt. Ltd., New Delhi

Operations Research

L	P	T	C
4	0	1	4

Unit I

Introduction – Mathematical Formulation of a Linear Programming Problem – Graphical Solution, Simplex Method: Introduction – The Computational Procedure –

Unit II

Use of Artificial Variables – Big M method – Two – phase Simplex method - concepts of duality - Duality in Linear Programming – Primal-Dual relation – Formulating a dual problem .

Unit III

Transportation Problem – Finding Initial Basic Feasible Solution – Test for Optimality – degeneracy – MODI method

Assignment Problem – Mathematical formulation – Hungarian method– Travelling sales man problem

Unit IV

Two person zero sum game with saddle point- without saddle point- dominance – solving 2 X n or m x 2 game by graphical methods.

Unit V

Sequencing problem – n jobs through 2 machines- n jobs through 3 machines – two jobs through m machines.

Recommended Text

KantiSwaroop, Gupta P.K. and Manmohan, *Problems in Operation Research*, Sultan Chand & Sons.

Reference Books

1. Taha H.A. *Operations Research,* Macmillan Publishing Company, New York.
2. V.K.Kapoor *Operations Research*, Sultan Chand & sons.
3. P.R.Vittal, *Operations Research*, Margham Publications, Chennai.
4. J.K.Sharma, *Operations Research: Theory And Applications* Macmillan, Delhi
5. S.J.Venkatesan, *Operations Research*, J.S. Publishes, Cheyyar-604 407.

Discrete Mathematics and Automata

L	P	T	C
4	0	1	4

Unit-I   Logic

Introduction-TF statements-Connectives-Atomic and compound -Well-formed formulae-Truth table of formula- tautology-Tautology implications and equivalence of formulae-Replacement process-Functionally complete set of connectives and duality law-Normal forms – Principle Normal forms – Theory of inference-Open statements-Quantifiers-valid formula and equivalence-theory of inference for predicate calculus-Statements involving more than one quantifier.

Unit-II   Relations

Cartesian product of two sets-Relations-Representation of relations-Equivalence relations-Closures and Warshall's Algorithm-Partitions and Equivalence classes.

Unit-III   Lattices and Boolean Algebra

Poset- Lattices- some properties of lattices-Modular and distributive lattices-Boolean Algebras-Boolean Polynomials-Karnaugh map-Switching circuits.

Unit-IV   Finite Automata

Introduction-Finite Automata- Representation of Finite Automata **–** Acceptability of a string by a finite Automaton-Language accepted by a finite Automaton- Nondeterministic Finite Automata-Acceptability of a string by NFA- Equivalence of DFA and NFA-Procedure for finding an FA equivalent to a given NFA-Reduction of number of states in finite automata.

Unit-V   Regular Language and Regular grammar

Formal definition of Regular expression-Language associated with RE-Connection between RE and RL- Closure properties of regular languages - Identifying some non regular languages using Pumping lemma

TEXT BOOKS:

1. Discrete Mathematics , M.K. Venkataraman, The National Publishing Company

REFERENCES BOOKS:

1. Discrete Mathematical Structures with Applications to Computer Science J.P. Trembly and Manohar, TataMcGraw-Hill Publications

2. Elements of Discrete Mathematics, Liu, Tata Mac Graw Hill

3. Kolman B,Busby R.C. and Ross S., Discrete Mathematical Structures for Computer Science, Fifth Edition, Prentice Hall of India, New Delhi, 2006

B.SC., (PHYSICS)

| UPH114A1 | III | Allied paper-1 | Allied Mathematics-I | 4 | 40 | 60 | 10 |

Unit-I

Symmetric - Skew-Symmetric - Orthogonal and Unitary matrices - Rank of a matrix -Consistency of equations - Eigen roots and eigen vectors - Cayley-Hamilton theorem (without proof)-Verification and computation of inverse matrix

Unit-II

Expansions of sin x, cos x, tan x in terms of x ; sin nx, cos nx, tannx, $\sin^n$x, $\cos^n$ x, $\tan^n$x, hyperbolic and inverse hyperbolic functions – Simple problems.

Unit-III

Solution of algebraic and transcendental equations-Bisection Method-Method of false position- Newton –Raphson method-Solution of linear simultaneous equations- Gauss elimination method- Gauss Jordon method-Gauss Seidal method

Unit-IV

Successive Differentiation- nth order derivatives of standard functions-Leibnitz theorem(without proof)-simple problems- Partial differentiation-Euler's theorem- Problems on Euler's theorem

Unit-V: Evaluation of definite and indefinite Integrals of types

1. $\int \frac{px+q}{ax^2+bx+c}dx$
2. $\int \frac{px+q}{\sqrt{ax^2+bx+c}}dx$
3. $\int \frac{1}{(px+q)\sqrt{ax^2+bx+c}}dx$

4. $\int \frac{1}{a+b\cos x}dx$
5. $\int \frac{1}{a+b\sin x}dx$
6. $\int \frac{a\cos x+b\sin x+c}{l\cos x+m\sin x+n}dx$

7. $\int_{0}^{\frac{\pi}{2}} \sin^n x\,dx$, $\int_{0}^{\frac{\pi}{2}} \cos^n x\,dx$

Reference Books:

1. Trigonometry : P. Duraipandian
2. Matrices: A.R.Vasishtha , A.K.Vasishtha
3. Numerical Methods, Problems and Solutions: M.K.Jain, S.r.K Iyengar, R.K.Jain
4. S.Narayanan and T.K.Manicavachagom Pillay (2004) Calculus. S.Viswanathan Printers & Publishers Pvt. Ltd. Chennai.
5. A.Singaravelu (2003) Algebra and Trigonometry, Vol.-I & II Meenakshi Agency, Chennai.

| III | Allied Paper- | UPH214A2 | Allied Mathematics-II | 4 | 40 | 60 | 100 |

UNIT-I:

Partial Fractions - Binomial, Exponential and logarithmic Series (without Proof) - Summation -Simple problems

Unit- II

Ordinary differential equations- Equations of first order and first degree- Variable separable method- Homogeneous differential equations- Linear differential equations- Higher order linear differential equations with constant coefficients- Finding particular integral of e^{ax} , sinax, cosax, x^k and $e^{ax}.f(x)$

Unit-III

Evaluation of Double integral- Triple integral integrals in simple form (Cartesian only) - Beta and Gamma functions

Unit-IV

Numerical solution of ordinary differential equations- Euler's method- Modified Euler's method-Runge method- Runge- Kutta method

Unit-V

Finite differences- Newton's forward difference formula- Newton's backward difference formula- Lagrange's formula- Numerical integration- trapezoidal rule- Simpson's 1/3rd rule- Simpson's 3/8th rule

Reference Text books:

1. M.D. Raisinghania, [2001] Ordinary and Partial Differential Equations, S.Chand and Co.,

2. Numerical Methods, Problems and Solutions: M.K.Jain, S.r.K Iyengar, R.K.Jain

3. S.Narayanan and T.K.Manicavachagom Pillay (2004) Calculus. S.Viswanathan Printers & Publishers Pvt. Ltd. Chennai.

4. Singaravelu. A (2003) Algebra and Trigonometry, Vol.-I & II Meenakshi Agency, Chennai.

V	Core paper-6	UPH514P6	Mathematical	4	40	6	10

UNIT:I Field Theory

Differentiation of vectors - Curves in plane - Velocity and acceleration - Scalar and vector point functions - Del applied to scalar point functions : Gradient - Del applied to vector point functions : Divergence and curl - Physical interpretation of divergence and curl – Del applied twice to point functions - Del applied to products of point functions - Integration of vectors - Line integral.

UNIT:II Special Functions

Definitions-Beta function - Gamma function - Relation between Beta and Gamma functions , Double integrals ,Triple integrals.

UNIT:III Fourier Series

Euler's Formulae (Without Proof) – Condition for Fourier expansion – Functions having points of discontinuity – Expansions of even and odd functions –Applications -Half wave, Full wave, saw tooth and triangular wave

UNIT:IV Fourier Transform

Fourier integral theorem (without proof) - Fourier Sine and Cosine integrals – Complex form of Fourier integral - Fourier integral representation of a function - Fourier transform – Fourier sine and Cosine transforms – Properties of Fourier Transforms: Linear property, Change of scale property, Shifting property - Parseval's identity for Fourier transforms (without proof)

UNIT – V Numerical Methods

Transcendental Equation - Solving by Graphical Method – Newton Raphson method. Numerical Integration – Trapezoidal and Simpson's 1/3 rule- Numerical Method of solving differential equation – Euler's Method – Runge-Kutta IV order method – applications.

BOOK FOR STUDY:

1. Sathiya Prakash, Mathematical Physics, S Chand, New Delhi, 2/e, 2004.

2. Mathematical Physics - R.K. Chartopadhyay - Wiley Eastern Limited -1990.

3. Mathematical Physics - B.D. Gupta - Vikas Publishing House Pvt. Ltd. - 1995.

4. Introduction to Mathematical Physics - Charlie Harper -Prentice Hall of India Pvt. Ltd -1993.

BOOKS FOR REFERENCE:

1. BS Rajput and Yoga Prakash, Mathematical Physics, Pragati Prasashan, Meerut, 1989.

2. Numerical methods in Science and Engineering - M.K. Venkatesan - National Publishing Company, 1991.

I	PH1411	M.Sc	Mathematical Physics	5	40	60	10

UNIT I: VECTOR FIELDS

Concept of vector and scalar fields – Gradient, divergence, curl and Laplacian – Vector identities – Line integral, surface integral and volume integral – Gauss theorem, Green's Theorem, Stoke's theorem and applications – Orthogonal curvilinear coordinates – Expression for gradient, divergence, curl and Laplacian in cylindrical and spherical co-ordinates

UNIT 2 : MATRIX THEORY

Solution of linear algebraic equations – rank of a matrix – Characteristic equation of a matrix – Eigen values and eigen vectors – Trace of a matrix – Cayley – Hamilton theorem- diagonalization of matrices – Hermitian and Unitary matrices – Direct sum and products of matrices – Sylvester's theorem.

UNIT 3: COMPLEX ANALYSIS

Functions of complex variables – Differentiability -- Cauchy-Riemann conditions –Complex integration – Cauchy's integral theorem and integral formula – Taylor's and Laurent's series – Residues and singularities - Cauchy's residue theorem – Evaluation of definite integrals.

UNIT 4: SPECIAL FUNCTIONS

Gamma and Beta functions – Storm-Liouville problem – Legendre, Associated Legendre, Bessel, Laugerre and Hermite differential equations : series solution – Rodriguez formula – Generating functions – Orthogonality relations – Important recurrence relations.

UNIT 5: GROUP THEORY

Basic definitions – Multiplication table – Subgroups, Co-sets and Classes – Direct Product groups – Point groups - Space groups – Representation theory – Homomorphism and isomorphism– Reducible and irreducible representations – Schur's lemma – The great Orthogonality theorem – Character table -- C3v and D3h as examples – Elementary ideas of rotation groups.

Books For Study and Reference :

1. A.K. Ghatak, I.C. Goyal and A.J. Chua, Mathematical Physics (McMillan, New Delhi1995).

2. P.K. Chattopadhyay, Mathematical Physics (Wiley, Eastern, New Delhi, 1990)
3. W.W.Bell, Special Functions for Scientists and Engineers (Van Nostrand, New York, 1968) .

4. A.W. Joshi, Elements of Group Theory for Physicists (Wiley Eastern, New Delhi, 1971).

5. F.A. Cotton, Chemical Applications of Group Theory (Wiley Eastern, New Delhi, 1987).

6. Monte Carlo : Basics, K.P.N. Murthy, ISRP, Kalpakkam, 2000.

7. Sathyaprakash, Mathematical Physics

8. H.K.Dass – Mathematical Physics

9. B.D.Guptha – Mathematical Physics

B.SC., (Chemistry)
Allied Mathematics-I

Unit-I

Symmetric - Skew-Symmetric - Orthogonal and Unitary matrices - Rank of a matrix -Consistency of equations - Eigen roots and eigen vectors - Cayley-Hamilton theorem (without proof)-Verification and computation of inverse matrix

Unit-II

Expansions of sin x, cos x, tan x in terms of x ; sin nx, cos nx, tannx, $\sin^n$x, $\cos^n$ x, $\tan^n$x, hyperbolic and inverse hyperbolic functions – Simple problems.

Unit-III

Solution of algebraic and transcendental equations-Bisection Method-Method of false position- Newton –Raphson method-Solution of linear simultaneous equations- Gauss elimination method- Gauss Jordon method-Gauss Seidal method

Unit-IV

Successive Differentiation- nth order derivatives of standard functions-Leibnitz theorem(without proof)-simple problems- Partial differentiation-Euler's theorem- Problems on Euler's theorem

Unit-V: Evaluation of definite and indefinite Integrals of types

2. $\int \frac{px+q}{ax^2+bx+c}dx$ 2. $\int \frac{px+q}{\sqrt{ax^2+bx+c}}dx$ 3. $\int \frac{1}{(px+q)\sqrt{ax^2+bx+c}}dx$

4. $\int \frac{1}{a+b\cos x}dx$ 5. $\int \frac{1}{a+b\sin x}dx$ 6. $\int \frac{a\cos x + b\sin x + c}{l\cos x + m\sin x + n}dx$

7. $\int_0^{\frac{\pi}{2}} \sin^n x\,dx$, $\int_0^{\frac{\pi}{2}} \cos^n x\,dx$

Reference Books:

1. Trigonometry : P. Duraipandian
2. Matrices: A.R.Vasishtha , A.K.Vasishtha
3. Numerical Methods, Problems and Solutions: M.K.Jain, S.r.K Iyengar, R.K.Jain
4. S.Narayanan and T.K.Manicavachagom Pillay (2004) Calculus. S.Viswanathan Printers & Publishers Pvt. Ltd. Chennai.
5. A.Singaravelu (2003) Algebra and Trigonometry, Vol.-I & II Meenakshi Agency, Chennai.

Allied Mathematics-II

UNIT-I:

Partial Fractions - Binomial, Exponential and logarithmic Series (without Proof) - Summation -Simple problems

Unit- II

Ordinary differential equations- Equations of first order and first degree- Variable separable method- Homogeneous differential equations- Linear differential equations- Higher order linear differential equations with constant coefficients- Finding particular integral of e^{ax} , sinax, cosax, x^k and $e^{ax}.f(x)$

Unit-III

Evaluation of Double integral- Triple integral   integrals in simple form (Cartesian only) - Beta and Gamma functions

Unit-IV

Numerical solution of ordinary differential equations- Euler's method- Modified Euler's method-Runge method- Runge- Kutta method

Unit-V

Finite differences- Newton's forward difference formula- Newton's backward difference formula- Lagrange's formula- Numerical integration- trapezoidal rule- Simpson's 1/3rd rule- Simpson's 3/8th rule

Reference Text books:

1. M.D. Raisinghania, [2001] Ordinary and Partial Differential Equations, S.Chand and Co.,

2.   Numerical Methods, Problems and Solutions: M.K.Jain, S.r.K Iyengar, R.K.Jain

3.   S.Narayanan and T.K.Manicavachagom Pillay (2004) Calculus. S.Viswanathan Printers & Publishers Pvt. Ltd. Chennai.

4. Singaravelu. A (2003) Algebra and Trigonometry, Vol.-I & II Meenakshi Agency, Chennai.

B.E

MA1T2 - BASIC MATHEMATICS FOR ENGINEERS - I
(B.E. First Year - Common For All Branches)
(For students admitted from 2014-15)
UNIT – I

(NUMERICAL SOLUTION OF ALGEBRAIC, TRANSCENDENTAL EQUATION)

Solution of algebraic and transcendental equations - Bisection method – Method of successive approximation-Method of false position (Regula - Falsi Method) - Newton- Raphson method - Honer's method-Secant method. Matlab applications.

UNIT – II
(EIGEN VALUES, EIGEN VECTORS)

Rank of matrix – Elementary transformation – Elementary matrices-solution of linear system of equations-Cramer's rule-Matrix inversion method-Consistency of linear system of equations; Linear Transformations – Linear dependence of vectors – Eigen values and Eigen vectors – Properties of Eigenvalues – Cayley Hamilton theorem (without proof). Matlab applications

UNIT – III

(DIFFERENTIAL CALCULUS AND DIFFERENT IAL EQUATION)

Function of two or more variables – Partial derivatives – Total derivative – Taylor's expansion – Maxima and Minima of functions of two variables – Jacobians –Homogenous functions - Euler's theorem for homogeneous function Operator D – Rules for finding Complementary function – Inverse operator – Rules for finding particular Integral – Working procedure to solve the equation. - Method of undetermined coefficients

UNIT – IV

(LINEAR DIFFERENTIAL EQUATIONS)

Method of variation of parameters- Equations reducible to linear equations with constant coefficients: Cauchy's homogeneous linear equation , Legendre's linear equation - Linear dependence of solutions - Simultaneous linear equations with constant coefficients

UNIT – V

(VECTOR DIFFERENTIATION)

Differentiation of vectors - Curves in space - Velocity and acceleration - Scalar and vector point functions –vector operator Del- Del applied to scalar point functions : Gradient - Del applied to vector point functions : Divergence and curl - Physical interpretation of divergence and curl-irrotational and solenoidal vectors – Del applied twice to point functions - Del applied to products of point functions-Conservative vector field.

Note: Questions are to be set on problem solving and not on the theoretical aspects.

PRESCRIBED TEXT BOOK:

Grewal B.S, Higher Engineering Mathematics, 41st Edition, Khanna Publishers, New Delhi, 2011.

REFERENCES

1. Alan Jeffrey, Advanced Engineering Mathematics, Academic Press

2. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons

3. Gerald C.F and Wheatley P.O, Applied Numerical Analysis, Addison-Wesley Publishing Company

MA2T2 - BASIC MATHEMATICS FOR ENGINEERS - II
(B.E. First Year - Common For All Branches)
(For students admitted from 2014-15)

UNIT- I
NUMERICAL SOLUTION OF SIMULTANEOUS EQUATIONS
Solution of linear simultaneous equations - Direct methods of solution: Gauss elimination method , Inversion of a matrix using Gauss Elimination method- Gauss Jordan method Method of Factorization-Crout's method, Iterative methods of solution : Jacobi's method , Gauss Seidel method.

UNIT- II
ORTHOGONAL REDUCTION
Orthogonal transformation-Reduction to diagonal form Similarity matrices Powers of a matrix - Reduction of quadratic form to canonical form Nature of a quadratic form Hermitian, Skew Hermitian and Unitary matrices Outline of applications of Eigen values and Eigen vectors in engineering

UNIT- III
INTEGRAL CALCULUS AND ITS APPLICATIONS
Reduction formulae reduction formulae[without proof] and Bernoulli's formula. Definite integrals , length of the curve. Double integrals - Change of order of integration - Double integrals in polar coordinates - Areas enclosed by plane curves - Triple integrals - Volume as triple integral

UNIT- IV
BETA AND GAMMA FUNCTIONS
Change of variables in double integrals and Triple integrals Area of a curved surface Beta function - Gamma function Reduction formula for - Relation between Beta and Gamma functions Outline of applications of multiple integrals

UNIT - V
VECTOR INTEGRATION
Integration of vectors - Line integral-circulation-work - Surface integral-Green's theorem in the plane (without proof) - Stoke's theorem (without proof) - Volume integral – Gauss divergence theorem (without proof) - Irrotational fields Outline of applications of vector calculus in engineering.

Note: Questions are to be set on problem solving and not on the theoretical aspects.

PRESCRIBED TEX BOOK:

Grewal B.S, Higher Engineering Mathematics, 41st Edition, Khanna Publishers, New Delhi, 2011.

REFERENCES

1. Alan Jeffrey, Advanced Engineering Mathematics, Academic Press.

2. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons

3. Gerald C.F and Wheatley P.O, Applied Numerical Analysis, Addison- Wesley Publishing Company

APPLIED MATHEMATICS FOR ELECTRICAL ENGINEERS I

(B.E. THIRD SEMESTER – ELECTRICAL AND ELECTRONICS ENGINEERING)
(For students admitted from 2012-13)

UNIT I
ANALYTIC FUNCTIONS)

Limit and continuity of a complex function - Derivative of a complex function: Cauchy-Riemann equations – Analytic functions – Harmonic functions - Orthogonal system – Applications to flow problems – Geometric representation of a complex function - Standard transformations: Translation, Magnification and rotation, Inversion and reflection, Bilinear transformation - Conformal transformation – Special conformal transforms: e^z, z^2, z^n, $1/z$- outline of applications of analytic functions in engineering.

Unit II
(LAPLACE TRANSFORMS AND APPLICATIONS)

Transforms of elementary functions : 1, t^n, e^{at}, $\sin at$, $\cos at$, $\sinh at$, $\cosh at$ - Properties of Laplace transforms: Linearity Property, First shifting property, Change of scale property – Transforms of derivatives - Transforms of integrals - Multiplication by t^n - Division by t - Evaluation of integrals by Laplace transform - Inverse transforms: Method of partial fractions – Other methods of finding inverse - Convolution theorem (Without proof) - Unit step function – Unit Impulse Function - Application to differential equations – Outline of applications of Laplace transforms in engineering.

UNIT III
(INTERPOLATION AND NUMERICAL INTEGRATION)

Interpolation with equal intervals – Newton's forward interpolation formula – Newton's backward interpolation formula - Interpolation with unequal intervals: Lagrange's interpolation formula, Newton's divided difference formula - Numerical integration: Trapezoidal rule - Simpson's one-third rule - Simpson's three-eight h rule – Outline of applications of interpolation and numerical integration in engineering.

UNIT IV
(FOURIER TRANSFORMS AND APPLICATIONS)
Fourier integral theorem (without proof) - Fourier Sine and Cosine integrals – Complex form of Fourier integral - Fourier integral representation of a function - Fourier transform – Fourier sine and Cosine transforms – Properties of Fourier Transforms: Linear property, Change of scale property, Shifting property - Parseval's identity for Fourier transforms (without proof) – Application of transforms to boundary value problem s: Heat conduction, Vibrations of a string, Transmission lines.

UNIT V
(Z – TRANSFORM AND APPLICATIONS)

Standard z-transforms of 1, a^n, n^p – Linearity property – Damping rule – Shifting rules – Multiplication by n - Initial and final value theorems (without proof) – inverse z – transforms – Convolution theorem (without proof) – Convergence of z- transforms – Two sided z-transform – Evaluation of inverse z-transforms: Power series method, Partial fraction method, inversion integral method – Application to difference equations – Outline of applications of z-transform in engineering

Note: Questions are to be set on problem solving and not on the theoretical aspects.

PRESCRIBED TEXT BOOK:

Grewal B.S, Higher Engineering Mathematics, 41st Edition, Khanna Publishers, New Delhi, 2011.

REFERENCES

1. Alan Jeffrey, Advanced Engineering Mathematics, Academic Press
2. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons
3. Gerald C.F and Wheatley P.O, Applied Numerical Analysis, Addison-Wesley Publishing Company

APPLIED MATHEMATICS FOR ELECTRICAL ENGINEERS II

(B.E. FOURTH SEMESTER – ELECTRICAL AND ELECTRONICS ENGINEERING)

(For students admitted from 2012-13)

UNIT I
(NUMERICAL SOLUTION OF ORDINARY DIFFERENTIAL EQUATIONS)

Picard's method – Taylor series method - Euler's method – Modified Euler's method – Runge's method – Runge-Kutta method – Predictor-corrector methods: Milne's method, Adams Bashforth method – Outline of applications of numerical solutions of ordinary differential equations in engineering.

UNIT II
(FOURIER SERIES)

Euler's Formulae (Without Proof) – Condition for Fourier expansion – Functions having points of discontinuity – Change of interval – Expansions of even and odd functions -

Half-Range series – Parseval's formula (without proof) – Root mean square value (without proof) – Typical waveforms (Definition Only): Square wave form, Saw toothed waveform, Modified saw toothed waveform, Triangular waveform, Half wave rectifier, Full wave rectifier - Outline of applications of Fourier series in engineering

UNIT III
(PARTIAL DIFFERENTIAL EQUATIONS)

Formation of partial differential equations – Solution of a par tial differential equation – Equations solvable by direct integration – Linear equations of first order – Non linear equations of the first order – Charpit's method - Homogeneous linear equations with constant coefficients –Rules for finding complementary functions – Rules for finding particular integral – Solution of homogeneous linear equation of any order.

UNIT IV
(NUMERICAL SOLUTION OF PARTIAL DIFFERENTIAL EQUATIONS)

Classification of second order equations – Finite difference approximation to derivatives – Elliptic equations: Laplace Equation, Poisson's equation – Solution of Laplace's equation – Solution of Poisson's equation – Parabolic equations: Heat equation – Solution of heat equation – Hyperbolic equations: Wave

equation – Solution of wave equation – Outline of applications of numerical solution of partial differential equations in engineering.

UNIT V
(APPLICATIONS OF PARTIAL DIFFERENTIAL EQUATIONS)

Method of separation of variables – Vibration of a stretched string: Wave equation – Solution of Wave equation - D'Alembert's solution of wave equation – One dimensional heat flow – Solution of heat equation – Two dimensional heat flow – Solution of Laplace equation: temperature distribution in long plates, Temperature distribution in finite plates.

Note: Questions are to be set on problem solving and not on the theoretical aspects.

PRESCRIBED TEXT BOOK:

Grewal B.S, Higher Engineering Mathematics, 41st Edition, Khanna Publishers,   New Delhi, 2011.

REFERENCES

1. Alan Jeffrey, Advanced Engineering Mathematics, Academic Press
2. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons
3. Gerald C.F and Wheatley P.O, Applied Numerical Analysis, Addison-Wesley Publishing Company

APPLIED MATHEMATICS FOR ELECTRICAL ENGINEERS III

(B.E. FIFTH SEMESTER – ELECTRICAL AND ELECTRONICS E NGINEERING)

(For students admitted from 2012-13)

UNIT I
(RANDOM VARIABLES)

Discrete random variable – Probability mass functions of Binomial, Poisson, Pascal and Geometric distributions - Continuous random variable – Probability density function of Uniform, Normal, Gamma, Cumulative distribution function –– Two dimensional random variables – Probability mass function – Joint probability density function – Cumulative distribution function – Marginal probability distribution – Conditional probability distribution – Independent random vectors – Outline of applications of random variables in engineering.

UNIT II

(STATISTICAL AVERAGES)

Measures of central tendency – Mathematical expectation and moments – Measures of dispersion – Coefficient of variation – Skewness – Kurtosis – Pearson's shape coefficients– Expected values of a two dimensional random variables – Linear correlation – Correlation coefficient – Rank correlation coefficient – Regression – Equation of the regression line –Outline of applications of statistical averages in engineering.

UNIT III

(SPECIAL PROBABILITY DISTRIBUTIONS)

Special discrete distributions - Binomial distribution – Poisson distribution – Geometric distribution – Hyper geometric distribution – Special continuous distributions – Uniform distribution – Exponential distribution – Erlang distribution – Weibull distribution – Normal distribution – Outline of applications of special probability distributions in engineering.

UNIT IV
(RANDOM PROCESSES)

Classification of random processes – Methods of description of a random process –Special classes of random processes – Average values of random processes – Analytical representation of a random processes – Autocorrelation function and its properties – Cross correlation function and its properties - Outline of applications of random processes in engineering.

UNIT V

(DESIGN OF EXPERIMENTS)

Parameters and statistics – Sampling distribution – Tests of hypothesis and tests of significance – Critical region and level of significance – Errors in testing of hypothesis – One tailed and two tailed tests – Procedure for testing of hypothesis – Design of experiments – Completely randomized design: Analysis of variance for one factor of classification – Randomized block design: Analysis of variance for two factors of classification – Latin square design: Analysis of variance for three factors of classification – Outline of applications of design of experiments in engineering.

Note: Questions are to be set on problem solving and not on the theoretical aspects.

PRESCRIBED TEXT BOOK:

Veerarajan. T.," Probability, Statistics and Random Processes, Third Edition, Tata

McGraw-Hill Publishers, New Delhi 2008.

REFERENCES:

1. Gubner, John, Probability and random process for electrical and computer engineers, Cambridge

2. Gupta S.P, Statistical methods, Sultan Chand & Sons

3. Papoulis, Probability, Random Variables and Stochastic Processes, McGraw Hill.

APPLIED MATHEMATICS FOR MECHANICAL ENGINEERS I

(B.E. THIRD SEMESTER – MECHANICAL ENGINEERING)

(For students admitted from 2012-13)

UNIT I
(INTERPOLATION AND NUMERICAL INTEGRATION)

Interpolation with equal intervals – Newton's forward interpolation formula – Newton's backward interpolation formula - Interpolation with unequal intervals: Lagrange's interpolation formula, Newton's divided difference formula - Numerical integration: Trapezoidal rule - Simpson's one-third rule - Simpson's three-eight h rule –Outline of applications of interpolation and numerical integration in engineering.

UNIT II
(LAPLACE TRANSFORMS AND APPLICATIONS)

Transforms of elementary functions : $1, t^n, e^{at}, \sin at, \cos at, \sinh at, \cosh at$ - Properties of Laplace transforms: Linearity Property, First shifting property, Change of scale property – Transforms of derivatives - Transforms of integrals - Multiplication by t^n - Division by t - Evaluation of integrals by Laplace transform - Inverse transforms: Method of partial fractions – Other methods of finding inverse - Convolution theorem (Without proof) - Unit step function – Unit Impulse Function -Application to differential equations – Outline of applications of Laplace transforms in engineering.

UNIT III
(NUMERICAL SOLUTION OF ORDINARY DIFFERENTIAL EQUATIONS)

Picard's method – Taylor series method - Euler's method – Modified Euler's method – Runge's method – Runge-Kutta method – Predictor-corrector methods: Milne's method, Adams Bashforth method – Outline of applications of ordinary differential equations in engineering.

UNIT IV
(DIFFERENCE EQUATIONS AND APPLICATIONS)

Formation of difference equations – Linear difference equations – Rules for finding the complementary function – Rules for finding the particular integral – Simultaneous difference equations with constant coefficients – Outline of othe r applications of difference equations in engineering

UNIT V
(Z – TRANSFORM AND APPLICATIONS)

Standard z-transforms of 1, a^n, n^p – Linearity property – Damping rule – Shifting rules – Multiplication by n - Initial and final value theorems (without proof) – inverse z – transforms – Convolution theorem (without proof) – Convergence of z- transforms – Two sided z-transform – Evaluation of inverse z-transforms: Power series method, Partial fraction method, inversion integral method – Application to difference equations – Outline of applications of z-transform in engineering.

Note: Questions are to be set on problem solving and not on the theoretical aspects.

PRESCRIBED TEXT BOOK:

Grewal B.S, Higher Engineering Mathematics, 41st Edition, Khanna Publishers, New Delhi, 2011.

REFERENCES

1. Alan Jeffrey, Advanced Engineering Mathematics, Academic Press
2. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons
3. Gerald C.F and Wheatley P.O, Applied Numerical Analysis, Addison-Wesley Publishing Company

APPLIED MATHEMATICS FOR MECHANICAL ENGINEERS II
(B.E. FOURTH SEMESTER – MECHANICAL ENGINEERING)

(For students admitted from 2012-13)

UNIT I
(APPLICATIONS OF LINEAR DIFFERENTIAL EQUATIONS)

Simple harmonic motion – Simple pendulum – Gain or loss of oscillations – Oscillations of a spring: Free oscillations, Damped oscillations, Forced oscillations (without damping), Forced oscillations (with damping) – Oscillatory electrical circuit – Electro-Mechanical analogy – Deflection of beams – Whirling of shafts – Applications of simultaneous linear equations

UNIT II
(PARTIAL DIFFERENTIAL EQUATIONS)

Formation of partial differential equations – Solution of a partial differential equation – Equations solvable by direct integration – Linear equations of first order – Non linear equations of the first order – Charpit's method - Homogeneous linear equations with constant coefficients –Rules for finding complementary functions – Rules for finding particular integral – Solution of homogeneous linear equation of any order.

UNIT III
(NUMERICAL SOLUTION OF PARTIAL DIFFERENTIAL EQUATIONS)

Classification of second order equations – Finite difference approximation to derivatives – Elliptic equations: Laplace Equation, Poisson's equation – Solution of Laplace's equation – Solution of Poisson's equation – Parabolic equations: Heat equation – Solution of heat equation – Hyperbolic equations: Wave equation – Solution of wave equation – Outline of applications of numerical solution of partial differential equations in engineering.

UNIT IV
(APPLICATIONS OF PARTIAL DIFFERENTIAL EQUATIONS)

Method of separation of variables – Vibration of a stretched string: Wave equation – Solution of Wave equation - D'Alembert's solution of wave equation – One dimensional heat flow – Solution of heat equation – Two dimensional heat flow – Solution of Laplace equation: temperature distribution in long plates, Temperature distribution in finite plates.

**UNIT V
(COMPLEX INTEGRATION)**

Integration of complex functions – Cauchy's theorem (without proof) – Cauchy's integral formula (without proof) –Taylor's series (without proof)– Laurent's series (without proof)– Zeros and Singularities of an analytic function – Residues – Residue theorem (without proof) – Calculation of residues – Evaluation of real definite integrals: Integration around the unit circle, Integration around a small semi circle, Integration around rectangular contours, Indenting the contours having poles on the real axis – Outline of applications of complex integration in engineering.

Note: Questions are to be set on problem solving and not on the theoretical aspects.

PRESCRIBED TEXT BOOK

Grewal B.S, Higher Engineering Mathematics, 41st Edition, Khanna Publishers, New Delhi, 2011.

REFERENCES

1. Brown J.W, Churchil R.V, Complex Variables and Applications, McGraw Hill
2. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons
3. Gerald C.F and Wheatley P.O, Applied Numerical Analysis, Addison-Wesley Publishing Company

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APPLIED MATHEMATICS FOR MECHANICAL ENGINEERS III

(B.E. FIFTH SEMESTER – MECHANICAL ENGINEERING)

(For students admitted from 2012-13)

UNIT I
(FOURIER SERIES)

Euler's Formulae (Without Proof) – Condition for Fourier expansion – Functions having points of discontinuity – Change of interval – Expansions of even and odd functions -

Half-Range series – Parseval's formula (without proof) – Root mean square value (without proof) – Typical waveforms (Definition Only): Square wave form, Saw toothed waveform, Modified saw toothed waveform, Triangular waveform, Half wave rectifier, Full wave rectifier - Outline of applications of Fourier series in engineering

UNIT II
(CALCULUS OF VARIATIONS)

Functionals – Euler's Equation - Solutions of Euler's equation – Geodesics – Isoperimetric problems – Several dependant variables – Functionals involving higher order derivatives – Approximate solution of boundary value problems: Rayleigh-Ritz method.

UNIT III
(COLLECTION AND ANALYSIS OF DATA)
Classification and tabulation of data - Frequency tables - Graphical representation - Measures of central tendency : Averages, mean, median, mode, Geometric and harmonic means - Measures of dispersion : Range, quartile deviation, Mean deviation, Standard deviation - Relative distribution - Moments - Skewness - Kurtosis - Linear correlation - Coefficient of correlation - Grouped data : calculation of correlation coefficient - Rank correlation - Linear regression - Regression lines.

UNIT IV

(ANALYSIS OF TIME SERIES)

Measurement of trend: Freehand method, Semi-average method, Moving average method, Method of least squares – Measuring trends by logarithms – Measurement of seasonal variations: Method of simple averages, Ratio-to-trend method, Ration-to-moving average method, Link relative method –

Measurement of cyclic variations: Residual method, Reference cycle analysis method, Direct method, Harmonic analysis method – Measurement of irregular variations – Outline of applications of analysis of time series in engineering.

UNIT V

(DESIGN OF EXPERIMENTS)

Parameters and statistics – Sampling distribution – Tests of hypothesis and tests of significance – Critical region and level of significance – Errors in testing of hypothesis –one tailed and two tailed tests – Procedure for testing of hypothesis – Design of experiments – Completely randomized design: Analysis of variance for one factor of classification – Randomized block design: Analysis of variance for two factors of classification – Latin square design: Analysis of variance for three factors of classification – Outline of applications of design of experiments in engineering.

Note: Questions are to be set on problem solving and not on the theoretical aspects.

PRESCRIBED TEXT BOOKS

1. Grewal B.S, Higher Engineering Mathematics, 41st Edition, Khanna Publishers, New Delhi, 2011.

2. Gupta S.P, Statistical Methods, 31st Edition, Sultan Chand and Sons., New Delhi, 2002.

REFERENCES

1. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons
2. Forsyth, Calculus of variations, Cambridge.
3. Snedecor George W. Cocharan William G, Statistical Methods, Affiliated East West Press

OPERATION RESEARCH

(B.E. SEVENTH SEMESTER – MECHANICAL ENGINEERING)

(For students admitted from 2012-13)

UNIT I

(LINEAR PROGRAMMING AND SIMPLEX METHOD)

Mathematical formulation of the problem - Graphical solution method - Exceptional cases - General linear programming problem - Canonical and standard forms of linear programming problem - The simplex method - Computational procedure : The simplex algorithm - Artificial variable techniques : Big M method, Two phase method - problem of degeneracy.

UNIT II

(TRANSPORTATION, ASSIGNMENT AND ROUTING PROBLEMS)

Mathematical formulation of the transportation problem - Triangular basis - Loops in a transportation table - Finding initial basic feasible solution (NWC, IBM and VAM methods) - Moving towards optimality - Degeneracy in transportation problems- Transportation algorithm (MODI method) - Unbalanced transportation problems - Mathematical formulation of the assignment problem - Assignment algorithm : Hungarian assignment method - Routing problems : Travelling salesman problem.

UNIT III

(GAME THEORY AND SEQUENCING PROBLEMS)

Two person zero sum games - Maxmin Minmax principle - Games without saddle points (Mixed strategies) - Solution of 2 X 2 rectangular games - Graphical method - Dominance property - Algebraic method for m x n games - Matrix oddments method for m x n games - Problem of sequencing - Problems with n jobs and 2 machines - Problems with n jobs and k machines - Problems with 2 jobs and k machines.

UNIT IV

(INTEGER PROGRAMMING AND INVENTORY CONTROL)

Gomory's All I.P.P method - Gomory's mixed integer method - Branch and bound method - Reasons for carrying inventory - Types of inventory - Inventory decisions - Economic order quantity - Deterministic inventory problem - EOQ problem with price breaks - Multi item deterministic problem.

UNIT V

(REPLACEMENT PROBLEMS AND PERT/CPM)

Replacement of equipment or asset that deteriorates gradually - Replacement of equipment that fails suddenly - Recruitment and promotion problem - Network and basic components - Rules of network construction - Time calculations in networks - Critical path method (CPM) - PERT - PERT calculations - Negative float and negative Slack - Advantages of network (PERT/CPM).

TEXT BOOK

1.   Kanti Swarup, P.K.Gupta and Man Mohan, Operations Research, Eighth Edition, Sultan Chand & Sons, New Delhi, 1999.

REFERENCES

1. H.A.Taha, Operations Research, Sixth Edition, MacMillen.

2. Richard Bronson, Operations Research, (Schaum's Outline Series, McGraw Hill Company, 1982.

3. J.K.Sharma, Operation Research (Theory and Applications), Mac Millen Ltd., 1997.

APPLIED MATHEMATICS FOR CIVIL ENGINEERS I

(B.E. THIRD SEMESTER – CIVIL AND STRUCTURAL ENGINEE RING)

(For students admitted from 2012-13)

UNIT I
(INTERPOLATION AND NUMERICAL INTEGRATION)

Interpolation with equal intervals – Newton's forward interpolation formula – Newton's backward interpolation formula - Interpolation with unequal intervals: Lagrange's interpolation formula, Newton's divided difference formula - Numerical integration: Trapezoidal rule - Simpson's one-third rule - Simpson's three-eight h rule – Outline of applications of interpolation and numerical integration in engineering.

UNIT II
(CALCULUS OF VARIATIONS)

Functionals – Euler's Equation - Solutions of Euler's equation – Geodesics – Isoperimetric problems – Several dependant variables – Functionals involving higher order derivatives – Approximate solution of boundary value problems: Rayleigh-Ritz method.

UNIT III
(PARTIAL DIFFERENTIAL EQUATIONS)

Formation of partial differential equations – Solution of a partial differential equation – Equations solvable by direct integration – Linear equations of first order – Non linear equations of the first order – Charpit's method - Homogeneous linear equations with constant coefficients –Rules for finding complementary functions – Rules for finding particular integral – Solution of homogeneous linear equation of any order.

UNIT IV
(NUMERICAL SOLUTION OF PARTIAL DIFFERENTIAL EQUATIONS)

Classification of second order equations – Finite difference approximation to derivatives – Elliptic equations: Laplace Equation, Poisson's equation – Solution of Laplace's equation – Solution of Poisson's equation – Parabolic equations: Heat equation – Solution of heat equation – Hyperbolic equations: Wave equation – Solution of wave equation – Outline of applications of numerical solution of partial differential equations in engineering.

UNIT V
(APPLICATIONS OF PARTIAL DIFFERENTIAL EQUATIONS)

Method of separation of variables – Vibration of a stretched string: Wave equation – Solution of Wave equation - D'Alembert's solution of wave equation – One dimensional heat flow – Solution of heat equation – Two dimensional heat flow – Solution of Laplace equation: temperature distribution in long plates, Temperature distribution in finite plates.

Note: Questions are to be set on problem solving and not on the theoretical aspects.

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1. Alan Jeffrey, Advanced Engineering Mathematics, Academic Press
2. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons
3. Gerald C.F and Wheatley P.O, Applied Numerical Analysis, Addison-Wesley Publishing Company

APPLIED MATHEMATICS FOR CIVIL ENGINEERS II

(B.E. FOURTH SEMESTER – CIVIL AND STRUCTURAL ENGINEERING)

(For students admitted from 2012-13)

UNIT I
(LAPLACE TRANSFORMS AND APPLICATIONS)

Transforms of elementary functions : 1, t^n, e^{at}, $\sin at$, $\cos at$, $\sinh at$, $\cosh at$ - Properties of Laplace transforms: Linearity Property, First shifting property, Change of scale property –Transforms of derivatives - Transforms of integrals - Multiplication by tn - Division by t - Evaluation of integrals by Laplace transform - Inverse transforms: Method of partial fractions – Other methods of finding inverse - Convolution theorem (Without proof) - Unit step function – Unit Impulse function Application to differential equations – Outline of applications of Laplace transforms in engineering.

UNIT II
(NUMERICAL SOLUTION OF ORDINARY DIFFERENTIAL EQUATIONS)

Picard's method – Taylor series method - Euler's method – Modified Euler's method – Runge's method – Runge-Kutta method – Predictor-corrector methods: Milne's method, Adams Bashforth method – Outline of applications of numerical solution of ordinary differential equations in engineering.

UNIT III
(ANALYTIC FUNCTIONS)

Limit and continuity of a complex function - Derivative of a complex function: Cauchy-Riemann equations – Analytic functions – Harmonic functions - Orthogonal system – Applications to flow problems – Geometric representation of a complex function - Standard transformations: Translation, Magnification and rotation, Inversion and reflection, Bilinear transformation - Conformal transformation – Special conformal Special conformal transforms: e^z, z^2, z^n, $1/z$- outline of applications of analytic functions in engineering

UNIT IV
(COMPLEX INTEGRATION)

Integration of complex functions – Cauchy's theorem (without proof) – Cauchy's integral formula (without proof) – Taylor's series (without proof)– Laurent' s series (without proof)– Zeros and Singularities of an analytic function – Residues – Residue theorem (without proof) – Calculation of residues – Evaluation of real definite integrals: Integration around the unit circle, Integration around a small semi circle, Integration around rectangular

contours, Indenting the contours having poles on the real axis – Outline of applications of complex integration in engineering.

UNIT V
(FOURIER SERIES)

Euler's Formulae (Without Proof) – Condition for Fourier expansion – Functions having points of discontinuity – Change of interval – Expansions of even and odd functions -
Half-Range series – Parseval's formula (without proof) – Root mean square value (without proof) – Typical waveforms (Definition Only): Square wave form, Saw toothed waveform, Modified saw toothed waveform, Triangular waveform, Half wave rectifier, Full wave rectifier - Outline of applications of Fourier series in engineering

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1. Alan Jeffrey, Advanced Engineering Mathematics, Academic Press
2. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons
3. Murrey R.Spiegel, Laplace Transforms, Schaum's Outlines, McGraw Hill

APPLIED MATHEMATICS FOR CIVIL ENGINEERS III

(B.E. FIFTH SEMESTER – CIVIL AND STRUCTURAL ENGINEE RING)

(For students admitted from 2012-13)

UNIT I

(COLLECTION AND ANALYSIS OF DATA)

Classification and tabulation of data - Frequency tables - Graphical representation - Measures of central tendency : Averages, mean, median, mode, Geometric and harmonic means - Measures of dispersion : Range, quartile deviation, Mean deviation, Standard deviation - Relative distribution - Moments - Skewness - Kurtosis - Linear correlation - Coefficient of correlation - Grouped data : calculation of correlation coefficient - Rank correlation - Linear regression - Regression lines.

UNIT II
(PROBABILITY THEORY)

Random experiment – Mathematical, statistical and axiomatic definitions of probability – Conditional probability – Independent events - Theorem of total probability – Theorem of probability of causes: Bayes's theorem – Bernoulli's trials – De Moivre-Laplace approximation – Generalization of Bernoulli's theorem multinomial distribution – Outline of applications of probability theory in engineering.

UNIT – III
(THEORETICAL DISTRIBUTIONS)

Binomial distribution: Properties and constants of Binomial distribution – Fitting a Binomial distribution - The multinomial distribution – Negative Binomial distribution – Poisson distribution: Properties and constants of Poisson distribution – Fitting a Poisson distribution – Hyper-geometric distribution – Normal distribution: Properties and constants of Normal distribution – Fitting a normal curve – Outline of applications of theoretical distributions in engineering

UNIT IV

(ANALYSIS OF TIME SERIES)

Measurement of trend: Freehand method, Semi-average method, Moving average method, Method of least squares – Measuring trends by logarithms – Measurement of seasonal variations: Method of simple averages, Ratio-to-trend method, Ration-to-moving average method, Link relative method –

Measurement of cyclic variations: Residual method, Reference cycle analysis method, Direct method, Harmonic analysis method – Measurement of irregular variations – Outline of applications of analysis of time series in engineering.

UNIT V

(DESIGN OF EXPERIMENTS)

Parameters and statistics – Sampling distribution – Tests of hypothesis and tests of significance – Critical region and level of significance – Errors in testing of hypothesis – One tailed and two tailed tests – Procedure for testing of hypothesis – Design of experiments – Completely randomized design: Analysis of variance for one factor of classification – Randomized block design: Analysis of variance for two factors of classification – Latin square design: Analysis of variance for three factors of classification – Outline of applications of design of experiments in engineering.

Note: Questions are to be set on problem solving and not on the theoretical aspects.

PRESCRIBED TEXT BOOK

Gupta S.P, Statistical Methods, 28th Edition, Sultan Chand and Sons., New Delhi, 1997.

REFERENCES:

1. Montgomery Douglas C. and. Runger George C, Applied Statistics and Probability for Engineers, John Wiley & Sons, Inc,

2. Richard Isaac, The Pleasures of Probability, Springer Verlag, 1995.

3. Spiegel Murry R., Stephens Larry J. Statistics, (Schaum's Outline Series), McGraw Hill Company

APPLIED MATHEMATICS FOR ELECTRONIC ENGINEERS I

(B.E. THIRD SEMESTER –ELECTRONICS AND COMMUNICATION ENGINEERING)

(For students admitted from 2012-13)

UNIT I
(LAPLACE TRANSFORMS AND APPLICATIONS)

Transforms of elementary functions : $1, t^n, e^{at}, \sin at, \cos at, \sinh at, \cosh at$ - Properties of Laplace transforms: Linearity Property, First shifting property, Change of scale property – Transforms of derivatives - Transforms of integrals - Multiplication by t^n - Division by t - Evaluation of integrals by Laplace transform - Inverse transforms: Method of partial fractions – Other methods of finding inverse - Convolution theorem (Without proof) - Unit step function –Unit Impulse function- Application to differential equations – Outline of applications of Laplace transforms in engineering.

UNIT II
(INTERPOLATION AND NUMERICAL INTEGRATION)

Interpolation with equal intervals – Newton's forward interpolation formula – Newton's backward interpolation formula - Interpolation with unequal intervals: Lagrange's interpolation formula, Newton's divided difference formula - Numerical integration Trapezoidal rule - Simpson's one-third rule - Simpson's three-eight h rule –Outline of applications of interpolation and numerical integration in engineering.

UNIT – III
(FOURIER TRANSFORMS AND APPLICATIONS)

Fourier integral theorem (without proof) - Fourier Sine and Cosine integrals – Complex form of Fourier integral - Fourier integral representation of a function - Fourier transform – Fourier sine and Cosine transforms – Properties of Fourier Transforms: Linear property, Change of scale property, Shifting property -Parseval's identity for Fourier transforms (without proof) – Application of transforms to boundary value problem s: Heat conduction, Vibrations of a string, Transmission lines

UNIT IV
(DIFFERENCE EQUATIONS AND APPLICATIONS)

Formation of difference equations – Linear difference equations – Rules for finding the complementary function – Rules for finding the particular integral – Simultaneous difference equations with constant coefficients – Outline of other applications of difference equations in engineering

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UNIT V
(Z – TRANSFORM AND APPLICATIONS)

Standard z-transforms of 1, a^n, n^p – Linearity property – Damping rule – Shifting rules – Multiplication by n - Initial and final value theorems (without proof) – inverse z – transforms – Convolution theorem (without proof) – Convergence of z- transforms – Two sided z-transform – Evaluation of inverse z-transforms: Power series method, Partial fraction method, inversion integral method – Application to difference equations – Outline of applications of z-transform in engineering

Note: Questions are to be set on problem solving and not on the theoretical aspects.

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1. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons

2. Gerald C.F and Wheatley P.O, Applied Numerical Analysis, Addison-Wesley Publishing Company

3. Murrey R.Spiegel, Laplace Transforms, Schaum's Outlines, McGraw Hill

APPLIED MATHEMATICS FOR ELECTRONIC ENGINEERS II

(B.E. FOURTH SEMESTER –ELECTRONICS AND COMMUNICATIO NS ENGINEERING)

(For students admitted from 2012-13)

UNIT I
(FOURIER SERIES)

Euler's Formulae (Without Proof) – Condition for Fourier expansion – Functions having points of discontinuity – Change of interval – Expansions of even and odd functions -Half-Range series – Parseval's formula (without proof) – Root mean square value (without proof) – Typical waveforms (Definition Only): Square wave form, Saw toothed waveform, Modified saw toothed waveform, Triangular waveform, Half wave rectifier, Full wave rectifier - Outline of applications of Fourier series in engineering

UNIT II
(SERIES SOLUTION OF DIFFERENTIAL EQUATIONS)

Validity of series solution - Series solution when x=0 is an ordinary point - Frobenius method (Series solution when x=0 is a regular singularity) - Bessel's equation (Bessels functions of the first and second kind) - Recurrence formulae for $J_n(x)$ - Expansions for J_0 and J_1 : Value of $J_{1/2}$ - Generating function for $J_n(x)$ - Equations reducible to Bessel's equation – Orthogonality of Bessel functions – Outline of applications of Bessel's functions in engineering.

UNIT III
(NUMERICAL SOLUTION OF ORDINARY DIFFERENTIAL EQUATIONS)

Picard's method – Taylor series method - Euler's method – Modified Euler's method – Runge's method – Runge-Kutta method – Predictor-corrector methods: Milne's method, Adams Bashforth method – Outline of applications of numerical solutions of ordinary differential equations in engineering.

UNIT IV
(PARTIAL DIFFERENTIAL EQUATIONS)

Formation of partial differential equations – Solution of a partial differential equation – Equations solvable by direct integration – Linear equations of first order – Non linear equations of the first order – Charpit's method - Homogeneous linear equations with constant coefficients –Rules for finding complementary functions – Rules for finding particular integral – Solution of homogeneous linear equation of any order.

UNIT V
(NUMERICAL SOLUTION OF PARTIAL DIFFERENTIAL EQUATIONS)

Classification of second order equations – Finite difference approximation to derivatives – Elliptic equations: Laplace Equation, Poisson's equation – Solution of Laplace's equation – Solution of Poisson's equation – Parabolic equations: Heat equation – Solution of heat equation – Hyperbolic equations: Wave equation – Solution of wave equation – Outline of applications of numerical solution of partial differential equations in engineering.

Note: Questions are to be set on problem solving and not on the theoretical aspects.

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1. Alan Jeffrey, Advanced Engineering Mathematics, Academic Press
2. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons
3. Gerald C.F and Wheatley P.O, Applied Numerical Analysis, Addison-Wesley Publishing Company

APPLIED MATHEMATICS FOR ELECTRONIC ENGINEERS III

(B.E. FIFTH SEMESTER – ELECTRONICS AND COMMUNICATIO NS ENGINEERING)

(For students admitted from 2012-13)

UNIT I
(PROBABILITY THEORY)

Random experiment – Mathematical, statistical and axiomatic definitions of probability – Conditional probability – Independent events - Theorem of total probability – Theorem of probability of causes: Bayes's theorem – Bernoulli's trials – De Moivre-Laplace approximation – Generalization of Bernoulli's theorem multinomial distribution – Outline of applications of probability theory in engineering.

UNIT II
(ONE DIMENSIONAL RANDOM VARIABLES)

Discrete random variable – Probability mass functions of Binomial, Poisson, Pascal and Geometric distributions - Continuous random variable – Probability density function of Uniform, Normal, Gamma, Erlang, Rayleigh, Maxwell and Laplace distributions - Cumulative distribution function – Outline of applications of one dimensional random variables in engineering.

UNIT III
(TWO DIMENSIONAL RANDOM VARIABLES)

Two dimensional random variables – Probability mass function – Joint probability density function – Cumulative distribution function – Marginal probability distribution – Conditional probability distribution – Independent random vectors – F unction of random variable - Outline of applications of two dimensional random variables in engineering.

UNIT IV

(STATISTICAL AVERAGES)

Measures of central tendency – Mathematical expectation and moments – Measures of dispersion – Coefficient of variation – Skewness – Kurtosis – Pearson's shape coefficients– Expected values of a two dimensional random variables – Linear correlation – Correlation coefficient – Rank correlation coefficient – Regression – Equation of the regression line – Outline of applications of statistical averages in engineering.

UNIT V

(STATISTICAL INEQUALITIES)

Characteristic function – Moment generating function – Cumulative generating function – Bounds on probability: Tchebycheff, Bienayme's, Schwartz and Cauchy-Schwartz inequalities (without proof) – Convergence concepts and central limit theorem – Outline of applications of statistical inequalities in engineering.

Note: Questions are to be set on problem solving and not on the theoretical aspects.

PRESCRIBED TEXT BOOK:

Veerarajan. T.," Probability, Statistics and Random Processes, Third Edition, Tata McGraw-Hill Publishers, New Delhi 2008.

REFERENCES:

1. Gubner, John, Probability and random process for electrical and computer engineers, Cambridge

2. Gupta S.P, Statistical methods, Sultan Chand & Sons

3. Papoulis, Probability, Random Variables and Stochastic Processes, McGraw Hill.

APPLIED RANDOM PROCESSES

(B.E. SIXTH SEMESTER – ELECTRONICS AND COMMUNICATIO NS ENGINEERING)

(For students admitted from 2012-13)

UNIT I

(SPECIAL PROBABILITY DISTRIBUTIONS)

Special discrete distributions - Binomial distribution – Poisson distribution – Geometric distribution – Hyper geometric distribution – Special continuous distributions – Uniform distribution – Exponential distribution – Erlang distribution – Weibull distribution – Normal distribution – Outline of applications of special probability distributions in engineering.

UNIT II
(RANDOM PROCESSES)

Classification of random processes – Methods of description of a random process –Special classes of random processes – Average values of random processes – Analytical representation of a random processes – Autocorrelation function and its properties – Cross correlation function and its properties – Outline of applications of random processes in engineering

UNIT III

(ERGODIC PROCESS)

Ergodicity – Mean Ergodic process – Correlation Ergodic process – Distribution Ergodic process – Power spectral density function and its properties – System in the form of convolution – Unit impulse response of the system – Outline of   applications of ergodic process in engineering.

UNIT IV

(SPECIAL RANDOM PROCESSES I)

Poisson process – Probability law for the Poisson Process – Second order probability function of a homogeneous Poisson process – Mean and autocorrelation of the Poisson process – Properties of Poisson process - Markov process – Markov chain – Chapman Kolmogorov theorem (without proof) – Classification of states of a Markov chain - Outline of applications of Poisson and Markov processes in engineering.

UNIT V

(SPECIAL RANDOM PROCESSES II)
Gaussian process – Processes depending on stationary Gaussian process: Square law detector process, Full wave linear detector process, Half wave linear detector process, Hard limiter process – Band pass process (Signal) - Narrow band Gaussian process - Quadrature representation of a WSS process - Noise in communication systems – Thermal noise – Filters – Outline of applications of Gaussian process in engineering.

Note: Questions are to be set on problem solving and not on the theoretical aspects.

PRESCRIBED TEXT BOOK:

Veerarajan. T.," Probability, Statistics and Random Processes, Third Edition, Tata McGraw-Hill Publishers, New Delhi 2008.

REFERENCES:

1. Gubner, John, Probability and random process for electrical and computer engineers, Cambridge

2. Gupta S.P, Statistical methods, Sultan Chand & Sons

3. Papoulis, Probability, Random Variables and Stochastic Processes, McGraw Hill.

APPLIED MATHEMATICS FOR INSTRUMENTATION

ENGINEERS I

(B.E. THIRD SEMESTER –ELECTRONICS AND INSTRUMENTATI ON ENGINEERING)

(For students admitted from 2012-13)

UNIT I
(INTERPOLATION AND NUMERICAL INTEGRATION)

Interpolation with equal intervals – Newton's forward interpolation formula – Newton's backward interpolation formula - Interpolation with unequal intervals: Lagrange's interpolation formula, Newton's divided difference formula - Numerical integration: Trapezoidal rule - Simpson's one-third rule - Simpson's three-eight h rule –Outline of applications of interpolation and numerical integration in engineering.

UNIT II
(LAPLACE TRANSFORMS AND APPLICATIONS)

Transforms of elementary functions : $1, t^n, e^{at}, \sin at, \cos at, \sinh at, \cosh at$ - Properties of Laplace transforms: Linearity Property, First shifting property, Change of scale property – Transforms of derivatives - Transforms of integrals - Multiplication by t^n - Division by t - Evaluation of integrals by Laplace transform - Inverse transforms: Method of partial fractions – Other methods of finding inverse - Convolution theorem (Without proof) - Unit step function – Unit Impulse function - Application to differential equations – Outline of applications of Laplace transforms in engineering.

UNIT III
(FOURIER TRANSFORMS AND APPLICATIONS)

Fourier integral theorem (without proof) - Fourier Sine and Cosine integrals – Complex form of Fourier integral - Fourier integral representation of a function - Fourier transform – Fourier sine and Cosine transforms – Properties of Fourier Transforms: Linear property, Change of scale property, Shifting property - Parseval's identity for Fourier transforms (without proof) – Application of transforms to boundary value problem s: Heat conduction, Vibrations of a string, Transmission lines.

UNIT IV
(DIFFERENCE EQUATIONS AND APPLICATIONS)

Formation of difference equations – Linear difference equations – Rules for finding the complementary function – Rules for finding the particular

integral – Simultaneous difference equations with constant coefficients – Outline of other applications of difference equations in engineering

UNIT V
(Z – TRANSFORM AND APPLICATIONS)

Standard z-transforms of 1, a^n, n^p – Linearity property – Damping rule – Shifting rules – Multiplication by n - Initial and final value theorems (without proof) – inverse z – transforms – Convolution theorem (without proof) – Convergence of z- transforms – Two sided z-transform – Evaluation of inverse z-transforms: Power series method, Partial fraction method, inversion integral method – Application to difference equations – Outline of applications of z-transform in engineering

Note: Questions are to be set on problem solving and not on the theoretical aspects.

PRESCRIBED TEXT BOOK:

Grewal B.S, Higher Engineering Mathematics, 41st Edition, Khanna Publishers, New Delhi, 2011.

REFERENCES

1. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons

2. Gerald C.F and Wheatley P.O, Applied Numerical Analysis, Addison-Wesley Publishing Company

3. Murrey R.Spiegel, Laplace Transforms, Schaum's Outlines, McGraw Hill

APPLIED MATHEMATICS FOR INSTRUMENTATION ENGINEERS II
(B.E. FOURTH SEMESTER –ELECTRONICS AND INSTRUMENTATIO AND ENGINEERING)

(For students admitted from 2012-13)

UNIT I
(FOURIER SERIES)

Euler's Formulae (Without Proof) – Condition for Fourier expansion – Functions having points of discontinuity – Change of interval – Expansions of even and odd functions -Half-Range series – Parseval's formula (without proof) – Root mean square value (without proof) – Typical waveforms (Definition Only): Square wave form, Saw toothed waveform, Modified saw toothed waveform, Triangular waveform, Half wave rectifier, Full wave rectifier - Outline of applications of Fourier series in engineering

UNIT II
(SERIES SOLUTION OF DIFFERENTIAL EQUATIONS)

Validity of series solution - Series solution when x=0 is an ordinary point - Frobenius method (Series solution when x=0 is a regular singularity) - Bessel's equation (Bessels functions of the first and second kind) - Recurrence formulae for $J_n(x)$ - Expansions for J_0 and J_1 : Value of $J_{1/2}$ - Generating function for $J_n(x)$ - Equations reducible to Bessel's equation – Orthogonality of Bessel functions – Outline of applications of Bessel's functions in engineering.

UNIT III
(NUMERICAL SOLUTION OF ORDINARY DIFFERENTIAL EQUATIONS)

Picard's method – Taylor series method - Euler's method – Modif ied Euler's method – Runge's method – Runge-Kutta method – Predictor-corrector methods: Milne's method, Adams Bashforth method – Outline of applications of numerical solutions of ordinary differential equations in engineering.

UNIT IV
(PARTIAL DIFFERENTIAL EQUATIONS)

Formation of partial differential equations – Solution of a partial differential equation – Equations solvable by direct integration – Linear equations of first order – Non linear equations of the first order – Charpit's method - Homogeneous linear equations with constant coefficients –Rules for finding complementary functions – Rules for finding particular integral – Solution of homogeneous linear equation of any order.

UNIT V
(NUMERICAL SOLUTION OF PARTIAL DIFFERENTIAL EQUATIONS)

Classification of second order equations – Finite difference approximation to derivatives – Elliptic equations: Laplace Equation, Poisson's equation – Solution of Laplace's equation – Solution of Poisson's equation – Parabolic equations: Heat equation – Solution of heat equation – Hyperbolic equations: Wave equation – Solution of wave equation – Outline of applications of numerical solution of partial differential equations in engineering.

Note: Questions are to be set on problem solving and not on the theoretical aspects.

PRESCRIBED TEXT BOOK:

Grewal B.S, Higher Engineering Mathematics, 41st Edition, Khanna Publishers, New Delhi, 2011.

REFERENCES

1. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons

2. Gerald C.F and Wheatley P.O, Applied Numerical Analysis, Addison-Wesley Publishing Company

3. Peter V.O'Neil, Advanced Engineering Mathematics, Thomson

APPLIED MATHEMATICS FOR INSTRUMENTATION ENGINEERS III

(B.E. FIFTH SEMESTER – ELECTRONICS AND INSTRUMENTATION ENGINEERING)

(For students admitted from 2012-13)

UNIT I
(PROBABILITY THEORY)

Random experiment – Mathematical, statistical and axiomatic definitions of probability – Conditional probability – Independent events - Theorem of total probability – Theorem of probability of causes: Bayes's theorem – Bernoulli's trials – De Moivre-Laplace approximation – Generalization of Bernoulli's theorem multinomial distribution – Outline of applications of probability theory in engineering.

UNIT II
(ONE DIMENSIONAL RANDOM VARIABLES)

Discrete random variable – Probability mass functions of Binomial, Poisson, Pascal and Geometric distributions - Continuous random variable – Probability density function of Uniform, Normal, Gamma, Erlang, Rayleigh, Maxwell and Laplace distributions - Cumulative distribution function – Outline of applications of one dimensional random variables in engineering.

UNIT III
(TWO DIMENSIONAL RANDOM VARIABLES)

Two dimensional random variables – Probability mass function – Joint probability density function – Cumulative distribution function – Marginal probability distribution – Conditional probability distribution – Independent random vectors – Function of random variable - Outline of applications of two dimensional random variables in engineering.

UNIT IV

(STATISTICAL AVERAGES)

Measures of central tendency – Mathematical expectation and moments – Measures of dispersion – Coefficient of variation – Skewness– Kurtosis – Pearson's shape coefficients – Expected values of a two dimensional random variables – Linear correlation – Correlation coefficient – Rank correlation coefficient – Regression – Equation of the regression line – Outline of applications of statistical averages in engineering.

UNIT V

(STATISTICAL INEQUALITIES)

Characteristic function – Moment generating function – Cumulative generating function – Bounds on probability: Tchebycheff, Bienayme's, Schwartz and Cauchy-Schwartz inequalities (without proof) – Convergence concepts and central limit theorem – Outline of applications of statistical inequalities in engineering.

Note: Questions are to be set on problem solving and not on the theoretical aspects.

PRESCRIBED TEXT BOOK:

Veerarajan. T.," Probability, Statistics and Random Processes, Third Edition, Tata McGraw-Hill Publishers, New Delhi 2008.

REFERENCES:

1. Gubner, John, Probability and random process for electrical and computer engineers, Cambridge

2. Gupta S.P, Statistical methods, Sultan Chand & Sons

3. Papoulis, Probability, Random Variables and Stochastic Processes, McGraw Hill.

OPERATION RESEARCH

(B.E. SIXTH SEMESTER – ELECTRONICS AND INSTRUMENTATION ENGINEERING)

(For students admitted from 2012-13)

UNIT I

(LINEAR PROGRAMMING AND SIMPLEX METHOD)

Mathematical formulation of the problem - Graphical solution method - Exceptional cases - General linear programming problem - Canonical and standard forms of linear programming problem - The simplex method - Computational procedure : The simplex algorithm - Artificial variable techniques : Big M method, Two phase method - problem of degeneracy.

UNIT II

(TRANSPORTATION, ASSIGNMENT AND ROUTING PROBLEMS)

Mathematical formulation of the transportation problem - Triangular basis - Loops in a transportation table - Finding initial basic feasible solution (NWC, IBM and VAM methods) - Moving towards optimality - Degeneracy in transportation problems- Transportation algorithm (MODI method) - Unbalanced transportation problems - Mathematical formulation of the assignment problem - Assignment algorithm : Hungarian assignment method - Routing problems : Travelling salesman problem.

UNIT III

(GAME THEORY AND SEQUENCING PROBLEMS)

Two person zero sum games - Maxmin Minmax principle - Games without saddle points (Mixed strategies) - Solution of 2 X 2 rectangular games - Graphical method - Dominance property - Algebraic method for m x n games - Matrix oddments method for m x n games - Problem of sequencing - Problems with n jobs and 2 machines - Problems with n jobs and k machines - Problems with 2 jobs and k machines.

UNIT IV

(INTEGER PROGRAMMING AND INVENTORY CONTROL)

Gomory's All I.P.P method - Gomory's mixed integer method - Branch and bound method - Reasons for carrying inventory - Types of inventory - Inventory decisions - Economic order quantity - Deterministic inventory

problem - EOQ problem with price breaks - Multi item deterministic problem.

UNIT V

(REPLACEMENT PROBLEMS AND PERT/CPM)

Replacement of equipment or asset that deteriorates gradually - Replacement of equipment that fails suddenly - Recruitment and promotion problem - Network and basic components - Rules of network construction - Time calculations in networks - Critical path method (CPM) - PERT - PERT calculations - Negative float and negative Slack - Advantages of network (PERT/CPM).

TEXT BOOK

1. Kanti Swarup, P.K.Gupta and Man Mohan, Operations Research, Eighth Edition, Sultan Chand & Sons, New Delhi, 1999.

REFERENCES

1. H. A.Taha, Operations Research, Sixth Edition, MacMillen.
2. Richard Bronson, Operations Research, (Schaum's Outline Series, McGraw Hill Company, 1982.
3. J .K.Sharma, Operation Research (Theory and Applications), Mac Millen Ltd., 1997.

APPLIED MATHEMATICS FOR TECHNOLOGY I
(B.TECH THIRD SEMESTER –INFORMATION TECHNOLOGY)

(For students admitted from 2012-13)

UNIT I
(INTERPOLATION AND NUMERICAL INTEGRATION)

Interpolation with equal intervals – Newton's forward interpolation formula – Newton's backward interpolation formula - Interpolation with unequal intervals: Lagrange's interpolation formula, Newton's divided difference formula - Numerical integration: Trapezoidal rule - Simpson's one-third rule - Simpson's three-eighth rule –Outline of applications of interpolation and numerical integration in engineering.

UNIT II
(NUMERICAL SOLUTION OF ORDINARY DIFFERENTIAL EQUATIONS)

Picard's method – Taylor series method - Euler's method – Modified Euler's method – Runge's method – Runge-Kutta method – Predictor-corrector methods: Milne's method, Adams Bashforth method – Outline of applications of numerical solutions of ordinary differential equations in engineering.

UNIT III
(LAPLACE TRANSFORMS AND APPLICATIONS)

Transforms of elementary functions : $1, t^n, e^{at}, \sin at, \cos at, \sinh at, \cosh at$ - Properties of Laplace transforms: Linearity Property, First shifting property, Change of scale property – Transforms of derivatives - Transforms of integrals - Multiplication by t^n - Division by t - Evaluation of integrals by Laplace transform - Inverse transforms: Method of partial fractions – Other methods of finding inverse - Convolution theorem (Without proof) - Unit step function – Unit Impulse function- Application to differential equations – Outline of applications of Laplace transforms in engineering.

UNIT IV
(FOURIER TRANSFORMS AND APPLICATIONS)

Fourier integral theorem (without proof) - Fourier Sine and Cosine integrals – Complex form of Fourier integral - Fourier integral representation of a function - Fourier transform – Fourier sine and Cosine transforms – Properties of Fourier Transforms: Linear property, Change of scale property, Shifting property - Parseval's identity for Fourier transforms (without proof) – Application of transforms to boundary value problem s: Heat conduction, Vibrations of a string, Transmission lines.

UNIT V
(Z – TRANSFORM AND APPLICATIONS)

Standard z-transforms of 1, a^n, n^p – Linearity property – Damping rule – Shifting rules – Multiplication by n - Initial and final value theorems (without proof) – inverse z – transforms – Convolution theorem (without proof) – Convergence of z- transforms – Two sided z-transform – Evaluation of inverse z-transforms: Power series method, Partial fraction method, inversion integral method – Application to difference equations – Outline of applications of z-transform in engineering

Note: Questions are to be set on problem solving and not on the theoretical aspects.

PRESCRIBED TEXT BOOK:

Grewal B.S, Higher Engineering Mathematics, 41st Edition, Khanna Publishers, New Delhi, 2011.

REFERENCES

1. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons

2. Gerald C.F and Wheatley P.O, Applied Numerical Analysis, Addison- Wesley Publishing Company

3. Murrey R.Spiegel, Laplace Transforms, Schaum's Outlines, McGraw Hill

APPLIED MATHEMATICS TECHNOLOGY II
(B.TECH FOURTH   SEMESTER –IV

(For students admitted from 2012-13)

UNIT I

(RELATIONS AND DIGRAPHS)

Product sets and partitions – Relations and digraphs – Paths in relations and digraphs – Properties of relations – Equivalence relations – Computer representation of relations and digraphs – Operations on relations – Transitive closure and Warshall's algorithm – Outline of applications of digraphs in information technology.

UNIT II

(ORDER RELATIONS AND STRUCTURES)
Partially ordered sets – Extremal elements of partial ordered sets – Lattices – Finite Boolean algebras – Functions of Boolean algebras – Circuit de signs – Outline of applications of Boolean algebras in information technology.

UNIT III
(TREES)
Trees – Labelled trees – Tree searching – Undirected trees – Minimal spanning trees – Outline of applications of trees in information technology.

UNIT IV

(TOPICS IN GRAPH THEORY)
Graphs – Euler paths and circuits – Hamiltonian paths and circuits – Transport networks – Matching problems – Coloring problems – Outline of applications of graph theory in information technology.

UNIT V

(LANGUAGES AND FINITE STATE MACHINES)
Semi groups (Definition only) – Product and quotients and semi groups (Definition only) - Languages **–** Representations of special grammars and languages – Finite state machines – Semi groups, machines and languages – Machines and regular languages – Simplification of machines – Outline of applications of finite state machines in information technology.

Note: Questions are to be set on problem solving and not on the theoretical aspects.

PRESCRIBED TEXT BOOK
Kolman B., Busby R.C. and Ross S., Discrete Mathematical Structures for Computer Science, Fifth Edition, Prentice Hall of India, New Delhi, 2006.

REFERENCES

1. Kenneth H. Rosen, Discrete Mathematics and its Applications, Tata McGraw Hill

2. Susanna S. Epp, Discrete Mathematics with applications, Brookes/Cole Publishing Company

3. J.P.Trembley, R.Monahor, Discrete Mathematical Structures with Applications to Computer Science, Tata McGraw Hill, New Delhi

APPLIED MATHEMATICS FOR TECHNOLOGY III

(B.TECH FIFTH SEMESTER –INFORMATION TECHNOLOGY)

(For students admitted from 2012-13)

UNIT I

(COLLECTION AND ANALYSIS OF DATA)

Classification and tabulation of data - Frequency tables - Graphical representation - Measures of central tendency : Averages, mean, median, mode, Geometric and harmonic means - Measures of dispersion : Range, quartile deviation, Mean deviation, Standard deviation - Relative distribution - Moments - Skewness - Kurtosis - Linear correlation - Coefficient of correlation - Grouped data : calculation of correlation coefficient - Rank correlation - Linear regression - Regression lines.

UNIT II
(PROBABILITY THEORY)

Random experiment – Mathematical, statistical and axiomatic definitions of probability – Conditional probability – Independent events - Theorem of total probability – Theorem of probability of causes: Bayes's theorem – Bernoulli's trials – De Moivre-Laplace approximation – Generalization of Bernoulli's theorem multinomial distribution – Outline of applications of probability theory in engineering.

UNIT – III
(THEORETICAL DISTRIBUTIONS)

Binomial distribution: Properties and constants of Binomial distribution – Fitting a Binomial distribution - The multinomial distribution – Negative Binomial distribution – Poisson distribution: Properties and constants of Poisson distribution – Fitting a Poisson distribution – Hyper-geometric distribution – Normal distribution: Properties and constants of Normal distribution – Fitting a normal curve – Outline of applications of theoretical distributions in engineering

UNIT IV

(ANALYSIS OF TIME SERIES)

Measurement of trend: Freehand method, Semi-average method, Moving average method, Method of least squares – Measuring trends by logarithms – Measurement of seasonal variations: Method of simple averages, Ratio-to-trend method, Ration-to-moving average method, Link relative method – Measurement of cyclic variations: Residual method, Reference cycle analysis method, Direct method, Harmonic analysis method – Measurement of irregular variations – Outline of applications of analysis of time series in engineering.

UNIT V

(DESIGN OF EXPERIMENTS)
Parameters and statistics – Sampling distribution – Tests of hypothesis and tests of significance – Critical region and level of significance – Errors in testing of hypothesis – One tailed and two tailed tests – Procedure for testing of hypothesis – Design of experiments – Completely randomized design: Analysis of variance for one factor of classification – Randomized block design: Analysis of variance for two factors of classification – Latin square design: Analysis of variance for three factors of classification – Outline of applications of design of experiments in engineering.

Note: Questions are to be set on problem solving and not on the theoretical aspects.

PRESCRIBED TEXT BOOK

Gupta S.P, Statistical Methods, 28th Edition, Sultan Chand and Sons., New Delhi, 1997.

REFERENCES:

1. Montgomery Douglas C. and. Runger George C, Applied Statistics and Probability for Engineers, John Wiley & Sons, Inc,

2. Richard Isaac, The Pleasures of Probability, Springer Verlag, 1995.

3. Spiegel Murry R., Stephens Larry J. Statistics, (Schaum's Outline Series), McGraw Hill Company.

APPLIED MATHEMATICS FOR COMPUTERS - I

(For students admitted from 2012-13)

PREREQUISITE:

Any person can learn this Paper but before that the candidate can know the formula's of Differentiation and Integration.

AIM:

To get knowledge about differential equations, Probability Theory, Distributions and Testing of Hypothesis.

OBJECTIVES:

1. To introduce the basic concepts of one dimensional and two dimensional Random Variables.
2. To provide information about Estimation theory, Correlation, Regression and Testing of hypothesis.
3. To enable the students to use the concepts of multivariate normal distribution and principle components analysis.

OUTCOME:
After completion of the course the students are expected to be able to:
 The student will able to acquire the basic concepts of Probability and Statistical techniques for solving mathematical problems which will be useful in solving Engineering Problems.

UNIT – I

(INTERPOLATION AND NUMERICAL INTEGRATION)
Interpolation with equal intervals – Newton's forward interpolation formula - Newton's backward interpolation formula - – Interpolation with unequal intervals: Lagrange's interpolation formula, Newton's divided difference formula – Numerical integration: Trapezoidal rule- Simpson's one-third rule – Simpson's three-eighth rule – Outline of applications of interpolation & Numerical integration in engineering.

UNIT – II

(NUMERICAL SOLUTION OF ORDINARY DIFFERENTIAL EQUATIONS)

Picard's method – Taylor's series method – Euler's method – Modified Euler's method – Runge's method – Runge-Kutta method – Predictor-corrector method :Milne's method, Adam's Bashforth method - Outline of

applications of numerical solution of ordinary differential equations in Engineering.

UNIT – III

(PROBABILITY THEORY)

Random experiment – Mathematical, statistical and axiomatic definitions of probability – Conditional probability – Independent events - Theorem of total probability – Theorem of probability of causes: Bayes's theorem – Bernoulli's trials – De Moivre-Laplace approximation – Generalization of Bernoulli's theorem multinomial distribution – Outline of applications of probability theory in engineering.

UNIT – IV
 (THEORETICAL DISTRIBUTIONS)
Binomial distribution: Properties and constants of Binomial distribution – Fitting a Binomial distribution - The multinomial distribution – Negative Binomial distribution – Poisson distribution: Properties and constants of Poisson distribution – Fitting a Poisson distribution – Hyper-geometric distribution – Normal distribution: Properties and constants of Normal distribution – Fitting a normal curve – Outline of applications of theoretical distributions in engineering

UNIT – V
(TESTING OF HYPOTHESIS)
Tests of Hypothesis- Sampling distribution-Estimation and testing of hypothesis-Tests of hypothesis and tests of significance- Critical region and level of significance- Errors in testing of hypothesis- One-tailed and Two-tailed tests-Critical values – procedure of testing of hypothesis-Tests of significance for large samples–Tests of significance for small samples-Student's t-Distribution-Snedecor's F-distribution-Chi-square distribution-Chi-square test of Goodness of fit.

TEXT BOOK
1. Grewal B.S, Higher Engineering Mathematics, 41st Edition, Khanna Publishers, New Delhi, 2011.
2. Veerarajan. T., Probability, Statistics and Random Processes, Third Edition, Tata McGraw-Hill Publishers, New Delhi 2008.

REFERENCE BOOKS
1. Erwin Kreyszig, Advanced Engineering Mathematics , 10th Edition, John Wiley & Sons, 2010
2. Gerald C.F and Wheatley P.O, Applied Numerical Analysis, 7th Edition , Pearson Education India, 2007
3. Gupta S.P, Statistical Methods, 28th Edition, Sultan Chand &Sons., New Delhi, 1997.

APPLIED DISCRETE MATHEMATICS

(For Computer Science and Engineering students admitted from 2012-13)

PRE-REQUISITE:

Understanding of Math (in general Sets, Boolean Algebra, Graphs, State Machines, ideas of Algorithms)

AIM:

Introduce the students to the foundational aspects of combinatorial mathematics via a selection of topics like graphs, relations, trees, state machine.

OBJECTIVES:

1. To introduce a number of discrete mathematical structures found to be serving as tools in the development of theoretical computer science.
2. To focus on how discrete structures actually helped computer engineers to solve problems occurred in the development of programming languages.
3. To know about the importance of discrete structures towards simulation of a problem to computer science & engineering.

OUTCOME:

After completion of the course the students are expected to be able to

1. Have knowledge on various discrete structures.

2. Define the key concepts of graph theory and use graph structures to represent data sets and relations on them.

3. Deal with problems which may arrive in computer science & engineering.

4. Prepare for entrance examinations involving placement opportunities.

UNIT – I (RELATIONS AND DIGRAPHS)

Product sets and partitions – Relations and digraphs – Paths in relations and digraphs – Properties of relations – Equivalence relations – Computer representation of relations and digraphs – Operations on relations – Transitive closure and Warshall's algorithm – Outline of applications of digraphs in information technology.

UNIT – II

(ORDER RELATIONS AND STRUCTURES)

Partially ordered sets – External elements of partial ordered sets – Lattices – Finite Boolean algebras – Functions of Boolean algebras – Circuit designs – Outline of applications of Boolean algebras in information technology.

UNIT – III
(TREES)
Trees – Labelled trees – Tree searching – Undirected trees – Minimal spanning trees – Outline of applications of trees in information technology.

UNIT – III
(TOPICS IN GRAPH THEORY)
Graphs – Euler paths and circuits – Hamiltonian paths and circuits – Transport networks – Matching problems – Coloring problems – Outline of applications of graph theory in information technology.

UNIT – V
(LANGUAGES AND FINITE STATE MACHINES)
Semi groups (Definition only) – Product and quotients and semi groups (Definition only) - Languages – Representations of special grammars and languages – Finite state machines – Semi groups, machines and languages – Machines and regular languages – Simplification of machines– Outline of applications of finite state machines in information technology.

Note: Questions are to be set on problem solving and not on the theoretical aspects.

TEXT BOOK:

1.   Kolman B., Busby R.C. and Ross S., Discrete Mathematical Structures for Computer Science, Fifth Edition, Prentice Hall of India, New Delhi, 2006.

REFERENCE BOOKS:

1. Kenneth H. Rosen, Discrete Mathematics and its Applications, 7th Edition, Tata McGraw Hill,2011

2. Susanna S. Epp, Discrete Mathematics with Applications, 4th Edition , Brookes/Cole Publishing Company,2010

3. J.P.Trembley, R.Monahor, Discrete Mathematical Structures with Applications to Computer Science, Tata McGraw Hill, New Delhi

MATHEMATICAL LOGIC AND COMBINATORICS

(For students admitted from 2015)

PRE-REQUISITE:

The person who can learn this Subject before that the candidate can know the basic Knowledge of normal forms (Conjunctive & Disjunctive).

AIM:

To get more Knowledge about Normal forms, Combinations, Permutations, Binomial coefficients and Recurrence Relations.

OBJECTIVES:

1. To review sets, relations, functions, and other foundations

2. To understand propositional and predicate logics and their applications

3. To understand formal models of computations and Permutations.

4. To review the rules of Conjunctive normal forms and Disjunctive normal form.

OUTCOME:

After successfully completing this course a student should be able to

1. To explain sets, relations, functions.

2. To conduct proofs using normal forms and Duality Law.

3. To apply counting, permutations, combinations, and recurrence relations

4. To explain logic programming and functional programming principles

UNIT – I

Mathematical logic- Connectives-Negation-Conjunction-Disjunction-Statement formulas and truth tables-Conditional and Biconditional-Well formed formulas-Tautologies-Equivalence of formulas-Duality law-Tautological implications-Formulas with distinct truth tables-Functionally complete set of connectives.

UNIT – II

Normal forms-Disjunctive normal forms-Conjunctive normal forms-Principle of disjunctive normal forms-Principle of conjunctive normal forms-The theory of inference for statement calculus-validity using truth tables-Rules of inference-Consistency of premises and indirect method of proof.

UNIT – III

Basics of counting-Sum rule-Product rule-Combinations and Permutations-Enumerating combinations and permutations with repetitions-Enumerating permutations with constrained repetitions.

UNIT – IV

Binomial coefficients-Problems on multinomial theorem- Principle of inclusion and exclusion-Generating function models-Calculating coefficients of generating functions.

UNIT – V

Recurrence relations- The Fibonacci relation-properties of Fibonacci numbers-Solving recurrence relations by substitutions and generating functions-Methods of characteristic roots-Solutions of In homogenous recurrence relations-methods of undetermined coefficients.

TEXT BOOKS

1. Discrete Mathematical Structures with Applications to Computer Science-J.P.Tremblay and R. Manohar-McGraw-Hill International Editon ,1987(Units-I & Unit-II)

2. Discrete Mathematics for Computer Scientists & Mathematicians-JeoL.Mott, Abraham Kandel-Theodore P.Baker-Second Edition,Eastern Economy Edition(PHI),1986(Unit-III, Unit-V and Unit-V)

REFERENCES

1. Fundamentals of Discrete Mathematical Structures, K.R. Chowdhary,Third Edition, PHI Learning,2015

AUTOMATA THEORY

(For students admitted from 2012-13)

PRE-REQUISITE:

Basic knowledge of Mathematics, Set theory, Mathematical induction principles.

AIM:

To develop mathematical foundation to help in courses on compiler designer, digital circuits and software programming

OBJECTIVES:

The objective of the course is to impart
knowledge on Automata Theory

OUTCOME:

After completion of the subject the students are expected to be able to

1. Design of digital circuits.

2. Design of Lexical analyzer

3. Designing software for identifying the words, phrases and other patterns in large bodies of text.

4. To write software for processing the natural language.

5. To apply in Artificial Intelligence and knowledge engineering, in game theory and games, computer graphics, linguistics etc.,

UNIT – I FINITE AUTOMATA

An informal picture of finite automata - Deterministic finite automata – Non-deterministic finite automata – An application: Text search – Finite automata with epsilon transitions

UNIT II

REGULAR EXPRESSIONS AND LANGUAGES

Regular expressions – Finite automata and regular expressions – Applications of regular expressions: Regular expressions in UNIX, Lexical analysis, Finding patterns in a text – Algebraic laws for regular expressions

UNIT III

CONTEXT FREE GRAMMARS AND LANGUAGES

Context free grammars – Parse trees – Applications of context free grammars: Parsers, The YACC parser generator, Markup languages, XML and document type definitions – Ambiguity in grammars and languages.

UNIT IV PUSHDOWN AUTOMATA

Pushdown automaton – The languages of a Pushdown automaton – Equivalence of Pushdown automaton and Context free grammars – Deterministic pushdown automata.

UNIT V
INTRODUCTION TO TURING MACHINES

Problems that computers cannot solve – The Turing machine – Programming techniques for Turing machines – Extensions to the basic Turing machine – Restricted Turing machines – Turing machines and computers

Note: The second edition of the prescribed text book differs drastically in treatment (Application oriented) from the first edition (Theory oriented). Hence the treatment of the second edition is to be followed. Questions are to be set on problem solving and not on the theoretical aspects.

TEXT BOOK

1.   Hopcroft E.John, Motwani Rajeev, Ullman D. Jeffrey, Introduction to Automata theory, Languages and Computation, Second Edition, Pearson Education 2001

REFERENCE BOOKS

1. Anderson, A.James, Automata theory with Modern Applications, Cambridge University Press, 2006

2. Carlos Martín-Vide, Victor Mitrana, Grammars and Automata for String Processing,Taylor & Francis, CRC Press, 2004

3. Linz Peter, An Introduction To Formal Languages And Automata, Jones & Bartlett Publishers, 2011

RESOURCE MANAGEMENT TECHNIQUES

(For computer science engineering students admitted from 2012-13)

PRE-REQUISITE:

Understanding of Programming, Sequencing, Graphs, State Machines, Algorithms

AIM:

Introduce the students to the foundational aspects of Mathematical Programming in Resource management techniques.

OBJECTIVES:

1. To introduce the Mathematical formulation of the problem to be serving as tools in the development of theoretical computer science.

2. To focus on Transportation and assignment model in computer engineers to solve problems occurred in the development of programming languages.

3. To know about the importance of Game theory in computer science & engineering.

4. To know the methods to solve replacement and sequencing problems in computer engineers.

5. To Solve problems in Resource allocation Scheduling.

OUTCOME:

After completion of the course the students are expected to be able to,

1. Have the knowledge of the Mathematical formulation of the problem which is a tools in the development of theoretical computer science.

2. Solve the problems on Transportation and assignment model in computer engineers.

3. Have the knowledge of Game theory in computer science & engineering.

4. Solve replacement and sequencing problems in computer engineers.

5. Solve problems in Resource allocation Scheduling.

UNIT – I

LINEAR PROGRAMMING AND SIMPLEX METHOD

Mathematical formulation of the problem - Graphical solution method - Exceptional cases - General linear programming problem - Canonical and standard forms of linear programming problem - The simplex method - Computational procedure : The simplex algorithm - Artificial variable techniques : Big M method - problem of degeneracy.

UNIT – II

TRANSPORTATION, ASSIGNMENT AND ROUTING PROBLEMS

Mathematical formulation of the transportation problem - Triangular basis - Loops in a transportation table - Finding initial basic feasible solution (NWC, LCM and VAM methods) - Moving towards optimality - Degeneracy in transportation problems- Transportation algorithm (MODI method) - Unbalanced transportation problems - Assignment algorithm : Hungarian assignment method - Routing problems : Travelling salesman problem.

UNIT – III GAME

THEORY

Two person zero sum games - Maximin Minimax principle - Games without saddle points (Mixed strategies) - Solution of 2 X 2 rectangular games - Graphical method - Dominance property - Algebraic method for m x n games - Matrix oddments method for m x n games.

UNIT – IV

REPLACEMENT AND SEQUENCING PROBLEMS

Replacement of equipment or asset that deteriorates gradually - Replacement of equipment that fails suddenly - Recruitment and promotion problem - Problem of sequencing - Problems with n jobs and 2 machines - Problems with n jobs and k machines - Problems 2 jobs and k machines.

UNIT – V NETWORK MODELS
Network and basic components- Rules of network constructions- Time calculations in networks- Critical path method(CPM)-PERT- PERT calculations- Negative float and negative slack- Advantages of network(PERT/CPM) -Project Cost - Time Cost Optimization Algorithm – Linear Programming formulation - Precedence planning -Updating - Resource allocation Scheduling.

PRESCRIBED BOOK

1. Kanti Swarup, P.K.Gupta and Man Mohan, Operations Research, Eighth Edition, Sultan Chand & Sons, New Delhi, 1999.

REFERENCE BOOKS

1. H.A.Taha, Operations Research, Eighth Edition, Pearson Education India, 2008

2. Richard Bronson, Operations Research, (Schaum's Outline Series), Second Edition McGraw Hill Company, 2003.

3. S.Hillier and J.Liebermann, Operations Research, Sixth Edition, Mc Graw Hill Company, 1995.

4. J.K.Sharma, Operation Research (Theory and Applications), First Edition, Mac Millen Ltd., 1997.

5. Barry Render, Ralph M. Stair, Allynan Bacon, Quantitative Analysis for Management, Fifth Edition, Boston, 1994.

MATHEMATICAL FOUNDATION TO COMPUTER SCIENCE
[Common for B.Sc.(Computer Science), B.C.A.]

OBJECTIVES

· To study basic Discrete mathematics required for computer science
· To learn the concepts of matrices, set theory and graph theory.
· To learn mathematical logic and relations.

OUTCOMES

· Understand the basic discrete mathematics principles.
· Understand the basics of matrices, set theory and graph theory.
· Understand Mathematical logic and relations.

SYLLABUS

UNIT I: Matrices: – Introduction – Determination – Inverse of a matrix – Rank of a Matrix - Eigen value Problems

UNIT II: Set theory:-Introduction-Set & its Elements-Set Description-Types of sets-Venn-Euler Diagrams- Set operations & Laws of set theory-Fundamental products-partitions of sets, minsets- Algebra of sets and Duality-Inclusion and Exclusion principle

UNIT III: Mathematical logic: Introduction- prepositional calculus –Basic logical operations- Tautologies-Contradiction-Argument-Method of proof- Predicate calculus.

UNIT IV : Relations: Binary Relations – Set operation on relations-Types of Relations – Partial order relation – Equivalence relation – Composition of relations – Functions – Types of functions – Invertible functions – Composition of functions.

UNIT V: Graph Theory: Basic terminology – paths, cycle & Connectivity – Sub graphs -Types of graphs – Representation of graphs in computer memory - Trees – Properties of trees –Binary trees – traversing Binary trees – Computer Representation of general trees.

TEXT BOOKS
1. Engineering Mathematics Volume II – Dr M.K. Venkataraman – NPC (Unit I)

2. Kenneth H. Rosen, Discrete Mathematics and its Applications, 6th Edition, Tata McGrawHill, New Delhi. (2007).

REFERENCE BOOKS
1. Discrete Mathematics Structures with Applications to computer science - J. P Tremblay R Manohar – McGraw Hill International Edition.

2. Discrete Mathematics – Dr M. K. Venkataraman, DrN.Sridharan, N. Chandarasekaran – The National publishing Company Chennai.

COMPUTER ASSOCIATED NUMERICAL METHODS

[Common for B.Sc.(Computer Science), B.C.A.]

OBJECTIVES
- To study the fundamentals of numerical methods.
- To understand the concept of solving simultaneous Algebraic Equations, Interpolation, numerical differentiation and integration.
- To understand the concept numerical solutions of differential equations.

OUTCOMES

After completion of the course the students acquire
· Knowledge of fundamentals of numerical methods.
· Learn to solve simultaneous Algebraic Equations, problems of Interpolation, numerical differentiation and integration.
· Learn to solve differential equations numerically.

SYLLABUS

UNIT I: ITERATIVE METHODS-Introduction - Beginning an iterative method - The method of successive bisection - The method of False position - Newton Raphson Iterative method - Secant method - The Method of successive approximation .

UNIT II: SOLUTION OF SIMULTANEOUS ALGEBRAIC EQUATIONS-Introduction – Direct methods of solution – Gauss elimination method , Gauss – Jordan method , Crout's method – Iterative methods of solution – Jacobi's method , Gauss – Seidal method – Solution of non-linear simultaneous equations – Newton–Raphson method – Determination of eigen values by iteration.

UNIT III: INTERPOLATION, NUMERICAL DIFFERENTIATION AND INTEGRATION-Finite differences – Newton's interpolation formulae – Interpolation with unequal intervals – Lagrange's formula ; Newton's divided difference formula – Inverse interpolation – Numerical differentiation – Maxima and Minima of Tabulated functions - Numerical integration – Trapezoidal rule; Simpson's $1/3^{rd}$ rule ; Simpson's $3/8^{th}$ rule.

UNIT IV: NUMERICAL SOLUTION OF ORDINARY DIFFERENTIAL EQUATIONS-Introduction– Picard's method – Taylor's series method – Euler's method – Modified Euler's method – Runge's method – Runge-Kutta method – Predictor-corrector method ;Milne's method.

UNIT V: NUMERICAL SOLUTION OF PARTIAL DIFFERENTIAL EQUATIONS-Introduction – Classification of second order equations – Finite difference approximation to derivatives – Elliptic equations – Solution of Laplace's equation – Solution of Poisson's equation– Parabolic equations – Solution of heat equation – Hyperbolic equations – Solution of wave equation.

TEXT BOOKS:

1. V.Rajaraman, Computer Oriented Numerical Methods, Prentice Hall of India   Pvt. Ltd.,
2. B.S.Grewal, Higher Engineering Mathematics, Khanna Publishers, New Delhi

REFERENCE BOOKS

1. Ward Chenny, David Kincaid, Numerical Mathematics and Computing, Brookes and Cole Publishing Company

2. C. Xavier, C Language and Numerical Methods, New Age International Publishers

M.E(CSE)

ADVANCED OPERATIONS RESEARCH

UNIT I
(TRANSPORTATION, ASSIGNMENT AND ROUTING PROBLEMS)

Transportation problem - Loops in a transportation table - Finding initial basic feasible solution(NWC, LCM and VAM methods)-Moving towards optimality-Degeneracy in transportation problems-Transportation algorithm (MODI method) - Unbalanced transportation problems –Assignment algorithm: Hungarian assignment method - Routing problems: Travelling salesman problem.

UNIT II
(NETWORK MODELS)

Introduction –Rules for construction a project network-Network computations-Floats—Network techniques-PERT and CPM.

UNIT III
(SEQUENCING PROBLEMS)

Problem of sequencing - Problems with n jobs and 2 machines - Problems with n jobs and k machines - Problems 2 jobs and k machines.

UNIT-IV
(DECISION THEORY)

Introduction-Formulation of the problem-Influence Diagram-Decision making under uncertainty-Decision making under Risk-Expected payoff calculations with perfect information.

UNIT V
(SIMULATION)

Introduction- Monte-Carlo simulation-Generation of Random Numbers-Simulation applied to Queueing problems- Simulation applied to some other types of problems.

L=50,T=10
Remark: Each Unit has to be covered in 12 hours (each of 50 minutes duration). Questions may be set to test the problem solving ability of the students in the above topics.

PRESCRIBED BOOK

Kanti Swarup, P.K.Gupta and Man Mohan, Operations Research, Eighth Edition, Sultan Chand & Sons, New Delhi, 1999.

REFERENCES

1. H.A.Taha, Operations Research, Sixth Edition, Mac Millen Ltd.,

2. Richard Bronson, Operations Research, (Schaum's Outline Series, McGraw Hill Company, 1982.

3. S.Hillier and J.Liebermann, Operations Research, Sixth Edition, Mc Graw Hill Company, 1995.

4. J.K.Sharma, Operation Research (Theory and Applications), Mac Millen Ltd., 1997.

M.E(EEE- POWER ELECTRONICS AND DEVICE)
SEMESTER I

EM1T1 - APPLIED MATHEMATICS FOR ELECTRICAL ENGINEERING

UNIT I MATRIX THEORY

QR decomposition – Eigen values using shifted QR algorithm- Singular Value Decomposition - Pseudo inverse- Least Square approximations

UNIT II CALCULUS OF VARIATIONS

Concept of Functionals - Euler"s equation – functional dependent on first and higher order derivatives – Functionals on several dependent variables – iso-perimetric problems - Variational problems with moving boundaries

UNIT III ONE DIMENSIONAL RANDOM VARIABLES

Random variables – Probability function – moments – moment generating functions and their properties – Binomial, Poisson, Geometric, Uniform, Exponential, Gamma and Normal distributions – function of a Random Variable.

UNIT IV LINEAR PROGRAMMING

Simplex Algorithm - Two Phase and Big M techniques – Duality theory - Dual Simplex method.

UNIT V QUEUEING MODELS

Poisson Process – Markovian queues – Single and Multi Server Models – Little"s formula – Machine Interference Model – Steady State analysis – Self Service queue.

TEXT / REFERENCE BOOKS
1. Richard Bronson, Schaum"s Outlines of Theory and Problems of Matrix Operations, McGraw-Hill, 1988.
2. Venkataraman M K, Higher Engineering Mathematics, National Pub. Co, 1992.
3. Elsgolts, L., Differential Equations and Calculus of Variations. Mir, 1977.
4. Sneddon,I.N., Elements of Partial differential equations, Dover Publications, 2006.
5. Sankara Rao, K., Introduction to partial differential equations. Prentice – Hall of India, 1995
6. Taha H A, "Operations research - An introduction, McMilan Publishing co, 1982.

M.E (Mech)

ED4101- ADVANCED NUMERICAL METHODS

OBJECTIVE:

To impart knowledge on numerical methods that will come in handy to solve numerically the problems that arise in engineering and technology. This will also serve as a precursor for future research.

OUTCOME:

It helps the students to get familiarized with the numerical methods which are necessary to solve numerically the problems that arise in engineering.

UNIT I ALGEBRAIC EQUATIONS   (9+3)
Systems of linear equations: Gauss Elimination method, pivoting techniques, Thomas algorithm for tridiagonal system – Jacobi, Gauss Seidel, SOR iteration methods - Systems of nonlinear equations: Fixed point iterations, Newton Method, Eigenvalue problems: power method, inverse power method, Faddeev – Leverrier Method.

UNIT II   ORDINARY DIFFERENTIAL EQUATIONS   (9+3)
Runge Kutta Methods for system of IVPs, numerical stability, Adams-Bashforth multistep method, solution of stiff ODEs, shooting method, BVP: Finite difference method, orthogonal collocation method, orthogonal collocation with finite element method, Galerkin finite element method.

**UNIT III   FINITE DIFFERENCE METHOD FOR TIME DEPENDENT
PARTIAL DIFFERENTIAL EQUATION   (9+3)**
Parabolic equations: explicit and implicit finite difference methods, weighted average approximation - Dirichlet and Neumann conditions – Two dimensional parabolic equations – ADI method; First order hyperbolic equations – method of characteristics, different explicit and implicit methods; numerical stability analysis, method of lines – Wave equation: Explicit scheme-Stability of above schemes.

**UNIT IV   FINITE DIFFERENCE METHODS FOR E LLIPTIC EQUATIONS
                                                                                              (9+3)**
 Laplace and Poisson's equations in a rectangular region: Five point finite difference schemes, Leibmann's iterative methods, Dirichlet and Neumann conditions – Laplace equation in polar coordinates: finite difference schemes – approximation of derivatives near a curved boundary while using a square mesh.

UNIT V   FINITE ELEMENT METHOD   **(9+3)**

Partial differential equations – Finite element method - orthogonal collocation method, orthogonal collocation with finite element method, Galerkin finite element method.

L:45 +T: 15 TOTAL: 60 PERIODS

REFERENCES

1. Saumyen Guha and Rajesh Srivastava, "Numerical methods for Engineering and Science", Oxford Higher Education, New Delhi, 2010.
2. Gupta S.K., "Numerical Methods for Engineers", New Age Publishers, 1995.
3. Burden, R.L., and Faires, J.D., "Numerical Analysis – Theory and Applications", Cengage Learning, India Edition, New Delhi, 2009
4. Jain M. K., Iyengar S. R., Kanchi M. B., Jain , "Computational Methods for Partial
5. Differential Equations", New Age Publishers, 1993.
6. Morton K.W. and Mayers D.F., "Numerical solution of partial differential
7. equations", Cambridge University press, Cambridge, 2002.

Aim: The course aims at providing necessary mathematical background to tackle real life optimization problems.

Objective:

1. To familiarize the student with functions of several variables.

2. To enable students to analyse various types of optimization techniques which are useful in finding the optimum solution to the problems arising in various domains.

3. To study fundamental principles of genetic algorithm (GA) used to find approximate solutions to optimization and search problems.

4. To provide in-depth understanding of queuing theory which provides models for a number of situations that arises in real life.

Outcome of the Course: At the end of the course, the students would:

1. Have a well – founded knowledge of linear programming and nonlinear programming which can describe real life phenomena.

2. Be exposed to basic characteristic features of a queuing system and acquire skills in analyzing queuing models.

Module I - Linear Programming

Introduction – formulation of the problem – graphical method – canonical form and standard forms of L.P.P – simplex method – artificial variable techniques - Big-M method – two phase simplex method. Duality principle – dual simplex method. Transportation model and algorithm, assignment model and Hungarian technique of solution, unbalanced assignment models, maximization case in transportation and assignment method. Problem solving using CPLEX

Module II - Non Linear Programming & Integer programming

Non Linear Programming: Unconstrained optimization techniques, Direct search methods, Descent methods, constrained optimization. Formulation of Integer Programming problems, Gomory's cutting plane methods, Branch and Bound Techniques. Problem solving using CPLEX

Module III - Dynamic Programming & Genetic Algorithm

Characteristics of Dynamic Programming, Bellman's principle of optimality, Concepts of dynamic programming, tabular method of solution. Introduction to Genetic Algorithm (GA), working principle, coding of variables, fitness function. GA operators; Similarities and differences between GA and traditional methods;

Unconstrained and constrained optimization using GAs. Problem solving using CPLEX/MATLAB

Module IV - Queuing Models

Poisson Process – Markovian queues – Single and Multi Server Models – Little's formula – Machine Interference Model – Steady State analysis – Self Service queue. Problem solving using MATLAB

Text Books:

1. Taha, H.A., "Operations Research: An Introduction", Pearson Education, New Delhi, 2012.

2. M. Mitchell, "An Introduction to Genetic Algorithms", PHI, 1998.

References:

1. D. Gross and C.M. Harris, "Fundamentals of Queuing Theory", Wiley Student edition, 2004.

2. S.S. Rao, "Engineering Optimization: Theory and practice", New Age International, New Delhi, 2000.

3. Trivedi K.S., "Probability and Statistics with Reliability, Queuing and Computer Applications", Prentice Hall, New Delhi, 2003.

4. A.E. Eiben and J.E. Smith, "Introduction to Evolutionary Computing", Springer-Verlag, 2007.

5. P. Mazumdar and E. Rudnick, "Genetic Algorithms for VLSI Design, Layout and Test Automation", Pearson, 2007.

6. K. Deb, "Optimization for Engineering Design – Algorithms and Examples", PHI, 2012.

Part Time Courses

SUB: MATHEMATICS I

UNIT I

(EIGEN VALUES, EIGEN VECTORS)

Linear Transformations - Orthogonal transformations – Linear dependence of vectors - Eigenvalues and Eigenvectors – Properties of Eigenvalues – Cayley Hamilton theorem (without proof) – Reduction to diagonal form – Similarity matrices – Powers of a matrix - Reduction of quadratic form to canonical form – Nature of a quadratic form – Hermitian, Skew Hermitian and Unitary matrices

UNIT II
(LAPLACE TRANSFORMS)

Transforms of elementary functions : $1, t^n, e^{at}, \sin at, \cos at, \sinh at, \cosh at$ - Properties of Laplace transforms: Linearity Property, First shifting property, Change of scale property – Transforms of derivatives - Transforms of integrals - Multiplication by t^n - Division by t, Evaluation of integrals by Laplace transform - Inverse transforms: Method of partial fractions– Other methods of finding inverse - Convolution theorem (Without proof) - Unit step function – Unit Impulse Function - Application to differential equations

UNIT III
(FOURIER SERIES)

Euler's Formulae (Without Proof) – Condition for Fourier expansion – Functions having points of discontinuity – Change of interval – Expansions of even and odd functions - Half-Range series – Parseval's formula (without proof) – Root mean square value (without proof) – Typical waveforms (Definition Only): Square wave form, Saw toothed waveform, Modified saw toothed waveform, Triangular waveform, Half wave rectifier, Full wave rectifier

UNIT IV
(FOURIER TRANSFORMS)

Fourier integral theorem (without proof) - Fourier Sine and Cosine integrals – Complex form of Fourier integral - Fourier integral representation of a function - Fourier transform – Fourier sine and Cosine transforms – Properties of Fourier Transforms: Linear property, Change of scale property, Shifting property - Parseval's identity for Fourier transforms (without proof)

UNIT V

(VECTOR CALCULUS)

Differentiation of vectors - Curves in plane - Velocity and acceleration - Scalar and vector point functions - Del applied to scalar point functions : Gradient - Del applied to vector point functions : Divergence and curl - Physical interpretation of divergence and curl – Del applied twice to point functions - Del applied to products of point functions - Integration of vectors - Line integral - Surface integral - Green's theorem in the plane (without proof) - Stoke's theorem (without proof) - Volume integral - Gauss divergence theorem (without proof) - Irrotational fields

PRESCRIBED TEXT BOOK:

Grewal B.S, Higher Engineering Mathematics, 41st Edition, Khanna Publishers, New Delhi, 2011.

REFERENCES

1. Alan Jeffrey, Advanced Engineering Mathematics, Academic Press
2. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons

EEE- II SEMESTER

SUB: NUMERICAL METHODS & STATISTICS

UNIT I

(NUMERICAL SOLUTION OF ALGEBRAIC, TRANSCENDENTAL AND SIMULTANEOUS EQUATIONS)

Solution of algebraic and transcendental equations - Bisection method – Method of false position (Regula-Falsi Method) - Newton-Raphson Iterative method - Solution of linear simultaneous equations - Direct methods of solution: Gauss elimination method , Gauss – Jordan method – Iterative methods of solution : Jacobi's method , Gauss – Seidel method

UNIT II
(INTERPOLATION AND NUMERICAL INTEGRATION)

Interpolation with equal intervals – Newton's forward interpolation formula – Newton's backward interpolation formula - Interpolation with unequal intervals: Lagrange's interpolation formula, Newton's divided difference formula - Numerical integration: Trapezoidal rule - Simpson's one-third rule - Simpson's three-eighth rule

UNIT III
(NUMERICAL SOLUTION OF ORDINARY DIFFERENTIAL EQUATIONS)

Picard's method – Taylor series method - Euler's method – Modified Euler's method – Runge's method – Runge-Kutta method – Predictor-corrector methods: Milne's method, Adams Bashforth method

UNIT IV
(NUMERICAL SOLUTION OF PARTIAL DIFFERENTIAL EQUATIONS)

Classification of second order equations – Finite difference approximation to derivatives –Elliptic equations: Laplace Equation, Poisson's equation – Solution of Laplace's equation –Solution of Poisson's equation – Parabolic equations: Heat equation – Solution of heat equation– Hyperbolic equations: Wave equation – Solution of wave equation

UNIT V

(STATISTICAL AVERAGES)

Measures of central tendency – Mathematical expectation and moments – Measures of dispersion– Coefficient of variation – Skewness – Kurtosis – Pearson's shape coefficients – Expected values of a two dimensional random variables – Linear correlation – Correlation coefficient – Rank correlation coefficient – Regression – Equation of the regression line

PRESCRIBED TEXT BOOKS

1. B.S.Grewal, Higher Engineering Mathematics, 40th Edition, Khanna Publishers, New Delhi, 2007.

2. S.P. Gupta, Statistical Methods, 28th Edition, Sultan Chand and Sons., New Delhi, 1997.

REFERENCES

1. Ward Chenny, David Kincaid, Numerical Mathematics and Computing, Fourth Edition Brookes and Cole Publishing Company, 1999.

2. Gerald C.F and Wheatley P.O, Applied Numerical Analysis, Addison-Wesley Publishing Company

MATHEMATICS I

(B.E. FIRST SEMESTER – PT- MECHANICAL ENGINEERING)

(For students admitted from 2012-13)

UNIT I

(NUMERICAL SOLUTION OF ALGEBRAIC, TRANSCENDENTAL AND SIMULTANEOUS EQUATIONS)

Solution of algebraic and transcendental equations - Bisection method – Method of false position (Regula-Falsi Method) - Newton-Raphson Iterative method - Solution of linear simultaneous equations - Direct methods of solution: Gauss elimination method , Gauss – Jordan method – Iterative methods of solution : Jacobi's method , Gauss – Seidel method

UNIT II

(EIGEN VALUES, EIGEN VECTORS)

Linear Transformations - Orthogonal transformations – Linear dependence of vectors - Eigenvalues and Eigenvectors – Properties of Eigenvalues – Cayley Hamilton theorem (without proof) – Reduction to diagonal form – Similarity matrices – Powers of a matrix - Reduction of quadratic form to canonical form – Nature of a quadratic form – Hermitian, Skew Hermitian and Unitary matrices

UNIT III

(MULTIPLE INTEGRALS AND THEIR APPLICATIONS)

Double integrals - Change of order of integration - Double integrals in polar coordinates - Areas enclosed by plane curves - Triple integrals – Volume as double integrals - Volume as triple integral – Change of variables in double and Triple integrals – Area of a curved surface Beta function - Gamma function - Relation between Beta and Gamma functions

UNIT IV
(LINEAR DIFFERENTIAL EQUATIONS)

Operator D – Rules for finding complementary function – Inverse operator – Rules f or finding particular Integral – Working procedure to solve the equation - Method of variation of parameters - Method of undetermined coefficients – Equations reducible to linear equations with constant coefficients: Cauchy's homogeneous linear equation , Legendre's linear equation - Linear dependence of solutions - Simultaneous linear equations with constant coefficients

UNIT V

(VECTOR CALCULUS)

Differentiation of vectors - Curves in plane - Velocity and acceleration - Scalar and vector point functions - Del applied to scalar point functions: Gradient - Del applied to vector point functions : Divergence and curl - Physical interpretation of divergence and curl – Del applied twice to point functions - Del applied to products of point functions - Integration of vectors - Line integral - Surface integral - Green's theorem in the plane (without proof) - Stoke's theorem (without proof) - Volume integral - Gauss divergence theorem (without proof) - Irrotational fields

PRESCRIBED TEXT BOOK:

Grewal B.S, Higher Engineering Mathematics, 41st Edition, Khanna Publishers, New Delhi, 2011.

REFERENCES

1. Alan Jeffrey, Advanced Engineering Mathematics, Academic Press
2. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons
3. Gerald C.F and Wheatley P.O, Applied Numerical Analysis, Addison-Wesley Publishing Company

MATHEMATICS II

(B.E. SECOND SEMESTER –PT- MECHANICAL ENGINEERING)

(For students admitted from 2012-13)

UNIT I
(INTERPOLATION AND NUMERICAL INTEGRATION)

Interpolation with equal intervals – Newton's forward interpolation formula – Newton's backward interpolation formula - Interpolation with unequal intervals: Lagrange's interpolation formula, Newton's divided difference formula - Numerical integration: Trapezoidal rule - Simpson's one-third rule - Simpson's three-eighth rule

UNIT II
(LAPLACE TRANSFORMS)

Transforms of elementary functions : 1, t^n, e^{at}, $\sin at$, $\cos at$, $\sinh at$, $\cosh at$ - Properties of Laplace transforms: Linearity Property, First shifting property, Change of scale property – Transforms of derivatives - Transforms of integrals - Multiplication by t^n - Division by t, Evaluation of integrals by Laplace transform - Inverse transforms: Method of partial fractions– Other methods of finding inverse - Convolution theorem (Without proof) - Unit step function – Unit Impulse Function - Application to differential equations

UNIT III
(NUMERICAL SOLUTION OF ORDINARY DIFFERENTIAL EQUATIONS)

Picard's method – Taylor series method - Euler's method – Modified Euler's method – Runge's method – Runge-Kutta method – Predictor-corrector methods: Milne's method, Adams Bashforth method

UNIT IV
(DIFFERENCE EQUATIONS)

Formation of difference equations – Linear difference equations – Rule s for finding the complementary function – Rules for finding the particular integral – Simultaneous difference equations with constant coefficients

UNIT V
(Z – TRANSFORM)

Standard z-transforms of 1, a^n, n^p – Linearity property – Damping rule – Shifting rules – Multiplication by n - Initial and final value theorems (without proof) – inverse z –transforms – Convolution theorem (without proof) – Convergence of z-transforms – Two sided z-transform – Evaluation of inverse z-

transforms: Power series method, Partial fraction method, inversion integral method – Application to difference equations

PRESCRIBED TEXT BOOK:

Grewal B.S, Higher Engineering Mathematics, 41st Edition, Khanna Publishers, New Delhi, 2011.

REFERENCES

1. Alan Jeffrey, Advanced Engineering Mathematics, Academic Press
2. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons
3. Gerald C.F and Wheatley P.O, Applied Numerical Analysis, Addison-Wesley Publishing Company

MATHEMATICS III

(B.E. THIRD SEMESTER – PT-MECHANICAL ENGINEERING)

(For students admitted from 2012-13)

UNIT I
(APPLICATIONS OF LINEAR DIFFERENTIAL EQUATIONS)

Simple harmonic motion – Simple pendulum – Gain or loss of oscillations – Oscillations of a spring: Free oscillations, Damped oscillations, Forced oscillations (without damping), Forced oscillations (with damping) – Oscillatory electrical circuit – Electro-Mechanical analogy – Deflection of beams – Whirling of shafts

UNIT II
(PARTIAL DIFFERENTIAL EQUATIONS)

Formation of partial differential equations – Solution of a partial differential equation – Equations solvable by direct integration – Linear equations of first order – Non linear equations of the first order – Charpit's method - Homogeneous linear equations with constant coefficients – Rules for finding complementary functions – Rules for finding particular integral – Solution of homogeneous linear equation of any order.

UNIT III
(NUMERICAL SOLUTION OF PARTIAL DIFFERENTIAL EQUATIONS)

Classification of second order equations – Finite difference approximation to derivatives –Elliptic equations: Laplace Equation, Poisson's equation – Solution of Laplace's equation –Solution of Poisson's equation – Parabolic equations: Heat equation – Solution of heat equation– Hyperbolic equations: Wave equation – Solution of wave equation

UNIT IV
(APPLICATIONS OF PARTIAL DIFFERENTIAL EQUATIONS)

Method of separation of variables – Vibration of a stretched string: Wave equation – Solution of Wave equation - D'Alembert's solution of wave equation – One dimensional heat flow – Solution of heat equation – Two dimensional heat flow – Solution of Laplace equation: temperature distribution in long plates, Temperature distribution in finite plates.

UNIT V
(COMPLEX INTEGRATION)

Integration of complex functions – Cauchy's theorem (without proof) – Cauc hy's integral formula (without proof) –Taylor's series (without proof)– Laurent's series (without proof) – Zeros and Singularities of an analytic function – Residues – Residue theorem (without proof) –Calculation of residues – Evaluation of real definite integrals: Integration around the unit circle, Integration around a small semi circle, Integration around rectangular contours, Indenting the contours having poles on the real axis

PRESCRIBED TEXT BOOK

Grewal B.S, Higher Engineering Mathematics, 41st Edition, Khanna Publishers, New Delhi, 2011.

REFERENCES

1. Brown J.W, Churchil R.V, Complex Variables and Applications, McGraw Hill
2. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons
3. Gerald C.F and Wheatley P.O, Applied Numerical Analysis, Addison-Wesley Publishing Company

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MATHEMATICS IV

(B.E. FOURTH SEMESTER –PT- MECHANICAL ENGINEERING)

(For students admitted from 2012-13)

UNIT I
(FOURIER SERIES)

Euler's Formulae (Without Proof) – Condition for Fourier expansion – Functions having points of discontinuity – Change of interval – Expansions of even and odd functions - Half-Range series – Parseval's formula (without proof) – Root mean square value (without proof) – Typical waveforms (Definition Only): Square wave form, Saw toothed waveform, Modified saw toothed waveform, Triangular waveform, Half wave rectifier, Full wave rectifier

UNIT II
(CALCULUS OF VARIATIONS)

Functionals – Euler's Equation - Solutions of Euler's equation – Geodesic s – Isoperimetric problems – Several dependant variables – Functionals involving higher or der derivatives – Approximate solution of boundary value problems: Rayleigh-Ritz method.

UNIT III

(COLLECTION AND ANALYSIS OF DATA)

Classification and tabulation of data - Frequency tables - Graphical representation - Measures of central tendency : Averages, mean, median, mode, Geometric and harmonic means - Measures of dispersion : Range, quartile deviation, Mean deviation, Standard deviation - Relative distribution - Moments - Skewness - Kurtosis - Linear correlation - Coefficient of correlation - Grouped data : calculation of correlation coefficient - Rank correlation - Linear regression - Regression lines.

UNIT IV

(ANALYSIS OF TIME SERIES)

Measurement of trend: Freehand method, Semi-average method, Moving average method, Method of least squares – Measuring trends by logarithms – Measurement of seasonal variations: Method of simple averages, Ratio-to-trend method, Ration-to-moving average method, Link relative method – Measurement of cyclic variations: Residual me thod, Reference cycle analysis method, Direct method, Harmonic analysis method – Measurement of irregular variations

UNIT V

(DESIGN OF EXPERIMENTS)

Parameters and statistics – Sampling distribution – Tests of hypothesis and tests of significance –Critical region and level of significance – Errors in testing of hypothesis – One tailed and two tailed tests – Procedure for testing of hypothesis – Design of experiments – Completely randomized design: Analysis of variance for one factor of classification – Randomized block design: Analysis of variance for two factors of classification – Latin square design: Analysis of variance for three factors of classification

PRESCRIBED TEXT BOOKS

1. Grewal B.S, Higher Engineering Mathematics, 41st Edition, Khanna Publishers, New Delhi, 2011.

2. Gupta S.P, Statistical Methods, 31st Edition, Sultan Chand and Sons., New Delhi, 2002.

REFERENCES

1. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons
2. Forsyth, Calculus of variations, Cambridge.
3. Snedecor George W. Cocharan William G, Statistical Methods, Affiliated East West Press

Choice Based Credit System for U.G and P.G (Mathematics) Programme

Credits

Each course is normally assigned one credit per lecture / tutorial per week and one credit for two periods or part thereof for laboratory or practical per week. Each semester curriculum shall normally have a blend of theory and practical course.

Duration of the Programme

A student is normally expected to complete M.Sc., (Mathematics) Programme in two years but in any case not more than seven years from the time of admission.

Registration for Courses

A newly admitted student will automatically be registered for the entire course prescribed for the first year without any option.

Every other student should submit a completed registration form indicating the list of course intended to be credited during the next semester. This registration will be done a week before the last working day of the current semester. Late registration with the approval of the department along recommendation of the head of the department along with a late fee will be done up to the last working day. Registration for the project work shall be done only for the final semester.

Assessment

The break – up of assessment and examination marks for the theory subjects is as follows:

First Assessment	: 15 Marks
Final Assessment	: 15 Marks
Assignment/Attendance	: 10 Marks
Examination	: 60 Marks

The break – up of assessment and examination marks for the Practical subjects is as follows:

> First Assessment   : 15 Marks
>
> Final Assessment   : 15 Marks
>
> Maintenance of Record Book : 10 Marks
>
> Examination   : 60 Marks

The project work will be assessed for 80 marks by the committee, consisting of the guide and a minimum of two members nominated by the head of the department.

One of the committee members will be nominated as the chairman by the head of the department. The head of the department may himself be a member or the chairman. 120 marks are allotted for the project work and viva voice examination at the end of the semester.

Student Counsellor

To help the students in planning the course of study and for general advice on the academic programme, the head of the department will attach a certain number of students to a member of faculty who shall function as student counsellor for those students throughout their period of study, Such student counsellor shall advice the student, preliminary approval for the courses to be taken by the students during each semester and obtain the final approval of the head of the department.

Class Committee

For all the branches of study during the first year, a common class committee will be constituted by the dean of the faculty from among the various teachers teaching the same common subject to different classes during the first year, the dean shall appoint one of them as course coordinator.

All heads of the departments, among whom one may be nominated as chairman by the dean. The Dean may opt to be a member or the chairman.

For each of the higher semester, separate class committees will be constituted by the head of the department. The composition of the class committees from first to eighth semesters will be follows.

Course co-coordinators are appointed by the head of the department from among the staff members teaching the course.

A project co- ordinator (in the eighth semester committee only) who shall be appointed by the head of the department from among the project supervisors.

All the student counsellors of the class and the head of the department (if not already a member) or any staff member nominated by the head of the department may opt to be special invitees.

The meeting will be held within a week after the completion the first assessment to review the performance and for follow – up action.

The second meeting will be held within a week after the final assessment is completed to review the performance and for the follow – up action.

The third meeting will be held after all the assessments are completed for all the courses, and at least one week before on the commencement of the examinations. During the meeting assessment in a maximum, of 40 marks will be finalized for every student and tabulated and submitted to the head of the department for approval and transmission to the controller of examinations.

Withdrawal from a Course

A student can withdraw from a course at any time before a date fixed by the head of the department prior to the final assessment, with the approval of the dean of the faculty on the recommendation of the head of the department.

Temporary Break of Study

A student can take a one – time temporary break of study covering the current year/ semester and /or the next semester with the approval of the head of the department, not later than after completion of the mid – semester test. However, the student must complete the entire programme within the maximum period of years.

Substitute Arrangement

A student, who has missed, for genuine reasons accepted by the head of the department, one or more of assessments of a course other than the examination, may take a substitute

Assessment for any one of the missed assessments. The substitute assessment must be completed before the date of the fourth meeting of the respective class committees.

A student who wishes to have a substitute assessment for a missed assessment must apply to the head of the department within a week from the date of the missed assessment.

Attendance Requirements

To be eligible to appear for the examination in a particular course, a student must get minimum of 80% in the course. However, if the attendance is 70% or above but less than 80% in any course, the authorities can permit the student to appear for the examination in the course on payment of the prescribed condition fees.

A student who withdraws from or does not meet the minimum attendance requirement in course must re-register for and repeat the course.

Passing and Declaration of Examination Results

All assessments of all the courses on absolute marks basis will be considered and passing by the results passing board in accordance with the rules of the university. Thereafter, the controller of examinations shall convert marks for each course to the corresponding letter grade as follows to compute the

grade point average and cumulative grade point average, and prepare the grade cards.

90-100 Marks	: S Grade
80-89 Marks	: A Grade
70-79 Marks	: B Grade
60-69 Marks	: C Grade
55-59 Marks	: D Grade
50-54 Marks	: E Grade
Less than 50 Marks	: F Grade
Insufficient Attendance	: I Grade
Withdrawn from Course	: W Grade

A student who obtains less than 24 marks out of 60 in the examination or is absent for the examination will be awarded grade „F ".

A student who earns a grade of S, A, B, C, D, or E for a course is declared to have successfully completed that course and earned credits for that course. Such a course cannot repeat by the student.

A student who obtains letter grade F in a course has to reappear for the examinations in that course.

A student who obtains letter grade I or W in a course has to   re -register for and repeat the course.

The following grade points are associated with each letter grade for and repeat the point average and cumulative grade point average.

S - 10; A - 09; B - 08; C - 07; D - 06; E - 05; F - 0.

Course with grades I and W is not considered for calculation of grade point average or cumulative grade point average. F grade will be considered for computing GPA and CGPA.

A student can apply for re - totalling for one or more of his examination answer papers within a week from the date of issue of the grade sheet to the students on payment of prescribed fee per paper. The application must be made to the controller of Examinations with the recommendation of the head of the department.

After results are declared, grade cards will be issued to the students. The grade cards will contain the list of courses registered during the year / semester, the grades scored and the grade point average (GPA) for the year / semester.

GPA is the sum of the products of the number of credits of a course with the grade point scored in that course, taken over all the courses for the year/ semester, divided by the sum of the number of credits for all courses taken in that year / semester. CGPA is similarly calculated considering all the courses taken from the time of admission.

After successful completion of the programme, the degree will be awarded with the following classification based on CGPA.

For First Class with Distinction the student must earn a minimum of 200 credits within four years from the time of admission, pass all the courses in the first attempt and obtain a CGPA of 8.25 or above.

For First Class the student must earn a minimum of 200 credits within five years from the time of admission and obtain a CGPA of 6.5 or above.

For Second Class the student must earn a minimum of 200 credits within seven years from the time of admission.

Electives

Apart from the various elective courses offered in the curriculum of the branch of specification, a student can choose a maximum of three electives from any specialization under the faculty during the entire period of study, with the approval of the head of the department offering the course.

Events Organized by the Department

National Workshop on MATLAB in Applied Sciences

The Department of Mathematics organized National Workshop on MATLAB in Applied Sciences (NWMAS) on 15-16, September, 2017. The inaugural function started with welcome address by Prof.Dr.K.Srinivasa Rao, Professor and Head, Department of Mathematics. The second issue of department newsletter 'Ganith Vaartha' was released by honourable Registrar, Prof.Dr.G.Srinivasu and delivered a Presidential address. Prof.Dr.S.Balaji, Dean, Faculty of Science and Prof. Dr. T. Venugopal, felicitated the gathering.

The first session "Getting started with MATLAB" was handled by Prof. Dr.K.Srinivasa Rao. The second session was followed by Dr. A. Gayathri, Asst. Prof. of Mathematics, about arrays and matrix algebra. The third session"2 Dimensional and 3 Dimensional plotting" was handed over to Dr. A.Dhanalakshmi, Asst. Prof. of Mathematics. In the next session Prof.Dr.K.Srinivasa Rao, explained the one dimensional and two dimensional interpolation.

On the second day first session "Worksheet and Handling of M files in MATLAB" was delivered by Prof.Dr.K.Srinivasa Rao. The next session was followed by Mr.P.Nagarajan, Asst. Prof. of Mathematics. He explained how to solve first, second and higher order ordinary differential equations using ODE solvers. Next, Prof.Dr.K.Srinivasa Rao, presented "Solving Non-Linear & System of non-linear Equations using MATLAB and data analysis using curve fitting tool box. More than 80 participants from Maharashtra, Andhra Pradesh and Tamil Nadu were benefited by this workshop and a good feedback is received by the committee.
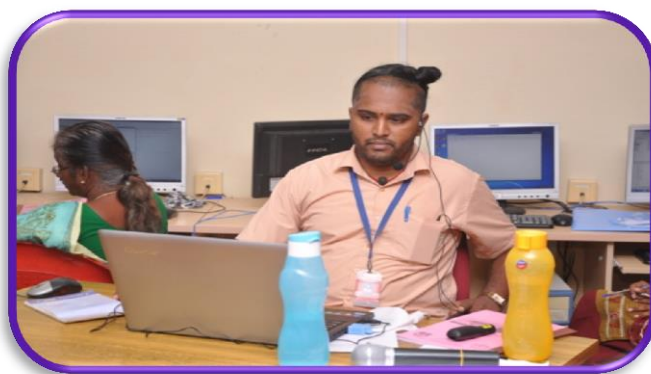
Quality Enrichment Program-III

Quality Enrichment Programme III (QEP-III) was organized by the Department of Mathematics on 27th of October 2017. Lectures were delivered to enrich the young minds of students in the basics of Mathematics as detailed below.

Session I : Introduction to Graph Theory by Mrs.N.Saradha, Asst.Prof of Mathematics, SCSVMV.

Session II: Numerical Error Analysis by Mrs. R. Mageswari, Asst.Prof of Mathematics, SCSVMV.

Session III: Parikh Matrices of Words and their Algebraic Properties by Prof. Dr.G. Gnanaraj Thomas, Professor of Mathematics(Retd), Madras Christian College, Chennai.

Session IV: Fundamental in First Order Differential Equations by Dr. E.Geetha, Asst. Prof of Mathematics, SCSVMV.

Nearly 90 students were benefitted by this program.

International Conference on Pure and Applied Mathematics

The Department of Mathematics organized the International Conference on Pure and Applied Mathematics (ICPAM-2018) during 19th and 20th of February 2018. The programme was started with registration on 19.02.2018. 135 participants were registered. The inaugural function started with lightening of Kuthu Vilakku. Prof. Dr. Ismail Naci Cangul, Uludag University, Bursa, Turkey, Prof. Dr. Vichian Laohakosol, Kasetsart University, Bangkok, Thailand, Prof. Dr. J. K. Verma, IIt-Bombay, Prof. Dr. P. Srinivasa Rao, IIT(ISM)-Dhanbad, Mr. Srinivasa Raghava, Member, All India Ramanujan Maths club, Prof. Dr. A. Jayalakshmi, (Retd.) Professor, SCSVMV, Prof. Dr. Bivudutta Mishra, BITS, Hyderabad, Prof. Dr. Jaya Subba Reddy, Sri Venkateswara University, Tirupati are the Chief guests for the function. In this function Prof. Dr. K. Srinivasa Rao, Convenor welcomed the gathering, Mrs. D. Vijayalakshmi said about the conference, Prof. Dr. Vishnu Pothy, Vice Chancellor, SCSVMV gave the presidential address, Prof. Dr. G. Srinivasu , Registrar, SCSVMV gave the inaugural address. As a continuation of this, felicitation address was done by Prof. Dr. T. Venugopal, COE, Director(Research & Publications) SCSVMV. The dignitaries released the conference proceedings. Finally, Dr. E. Geetha proposed the vote of thanks.

The invited talk session was began by Prof. Dr. Ismail Naci Cangul. He delivered the talk on "Applications of a New Invariant for Graphs". Prof. Dr. J. K. Verma inspired by his talk on "Counting Roots of Polynomials using Newton Polytopes". The topic "Numerics of Fluids: Challenges & Strategies" was explained by Prof. Dr. P. Srinivasa Rao. Mr. Srinivasa Raghava delivered a talk on "Millennium Problems". He also gave the idea to solve the problems to the participants. Prof. Dr. Bivudutta Mishra delivered his talk on "Study of Cosmological Models with Mathematical Techniques".

Paper presentation session was conducted as two sessions in morning and evening. 50 participants presented their papers. Dr. A. Jayalakshmi, Dr. Jayasubba Reddy, Dr. Madhusudhan Reddy, Dr. K. C. Raajasekar, Mrs. N.Saradha, Prof. Dr. Vichian & Prof. Dr. Bivudutta Mishra chaired the sessions.

The second day programme was started with the recapitulation of the first day programme. Prof. Dr. K.P.V. Ramana Kumar, Dean, Management studies presided over the function. Prof. Dr. S. Sreenath, S. V. University, Tirupathi, Prof. Dr. S. Udayabaskaran, Vel Tech University, Chennai, Mr. Srinivasa Raghava, Member, All India Ramanujan Maths club, Prof. Dr. A. Jayalakshmi, (Retd.) Professor, SCSVMV, Prof. Dr. Jaya Subba Reddy, Sri Venkateswara University and Dr. Vichian Laohakosol, Kasetsart University, Bangkok were the delegates for this function.

Dr. A. Jayalakshmi gave the first invited talk on that day on "The Study of a Semigroup through its Factorizable Elements Form a Band". Extended that Prof. Dr. Vichian Laohakosol delivered a talk on "Analyzing the Positivity of Sixth-Order Linear Recurrence Sequences".

Prof. Dr. S. Sreenath delivered his talk on " Fluid Dynamics". Prof. Dr. C. Muthucumaraswamy gave the key-note address on "Hall Effect Unsteady Flow Past an Isothermal Vertical plate in a Rotating Fluid with Variable Mass Diffusion in the Presence of Chemical Reaction of First Order".

Prof. Dr. Jaya Subba Reddy gave talk on "Symmetric Bi-Derivations in Prime and Semi prime Rings". Dr. S. Udayabaskaran continued on the topic " Branching Processes and their Applications".

Totally 4 paper presentation sessions were conducted. 50 participants presented their papers. Prof. Dr. P. Srinivasa Rao, Prof. Dr. Muthucumaraswamy, Prof. Dr. S. Udayabaskaran and Prof. Dr. T. Venugopal chaired these sessions.

The Conference came to an end with the valedictory function. Prof. Dr. S. Balaji, Dean, Faculty of science distributed the certificates to the participants. Dr. A. Dhanalakshmi read the Conference report and Dr. A. Gayathri delivered the vote of thanks.

Winter Refresher Course in Mathematics

Winter Refresher Course in Mathematics was held during February 1 - 3, 2018. The programme started with a welcome address by Prof. Dr K. Srinivasa Rao, Convener of the Programme, Professor and Head, Department of Mathematics. Prof. Dr S. Balaji, Dean, Faculty of Science and Prof. Dr T. Venugopal, Controller of Examinations and Director, Research & Publications delivered the felicitation address. Dr. R. Malathi and Mr. V.K. Radhakrishnan, organizing secretaries of the programme introduced the chief guests of the day.

The program comprised of lectures on Abstract Algebra by Prof. Dr K. C. Rajasekar, Assistant Professor of Mathematics, Presidency College, Chennai; Real Analysis by Prof. Dr V. Thangaraj, Retired Professor and Director of Mathematics, RIASM, University of Madras, Chennai; Graph Theory by Prof. Dr R. Sampath Kumar, Professor and Head, Department of Mathematics, Annamalai University, Chidambaram; Probability & Random Processes by Prof. Dr S. Udayabaskaran, Professor of Mathematics, Vel Tech University, Chennai; Statistics by Prof. Dr T. Venugopal, Professor of Mathematics, Controller of Examinations, Director, Research & Publications, SCSVMV; Linear Algebra by Prof. Dr K. Srinivasa Rao, Professor and Head, Department of Mathematics, SCSVMV and How to prepare for NET, GATE, M.Sc, PhD Entrance Examinations by Prof. Dr Mahendra K. Gupta. This programme was mainly organised for creating interest among the students in the field of Abstract and Applied Mathematics targeting UG final year and PG first and second-year students and about 100 students participated in the programme and benefitted from the lecture.

World Mathematics Day - Helix-18

(An Intercollegiate Mathematics Meet)

The world Mathematics Day was held on 23rd March, 2018. The programme started with a welcome address by Prof. Dr K. Srinivasa Rao, Convener of the Programme, Professor and Head, Department of Mathematics. Prof. Dr. S. Balaji, Dean, Faculty of Science and Prof. Dr T. Venugopal, Controller of Examinations and Director, Research & Publications delivered felicitation address. Dr J.Sengamalaselvi , organizing secretary of the programme introduced the chief guest Dr. C. Vijayalakshmi, Professor of the Mathematics, VIT, Chennai who delivered the lecture on the Power of Mathematics. The List of the Events are, Power point presentation, LOGO Match, Words worth what comes next? Doodles, Quiz, Android, Correlate. Faculties from various departments played a role as a Judge for the above Events. This programme is mainly organised for creating interest among the students in the field of Mathematics targeting various Arts and Science colleges and Engineering students. Nearly 400 students participated in this programme.

Invited Lecture

The Department of Mathematics successfully organized the invited lecture "Cryptography" on 31.07.2017. Dr.K.Srinivasa Rao, Head, Professor of Mathematics, honored the chief guest, Mrs. N.Saradha, Assistant professor of Mathematics introduced chief guest. Dr.S.Pasunkili Pandian, Head Associate Professor, Aditanar College, Tiruchendur delivered a lecture which includes cryptography, Mystical Number 7, Golden Ratio, Phi with interesting and suitable examples. A total of 64 students actively participated in the program.

Department Activities

➢ Educational Tour

Place of visit: Vainu Bappu Observatory , Kavalur

Date: 31/08/2017

      With the blessings of our Achariyas, an educational tour was successfully programmed and returned with good output to visit Vainu Bappu Observatory at Kavalur on 31/08/2017. The trip was planned to motivate the students for their higher studies and trigger their minds towards research. The journey was started by 6.45 a.m from the university with 59 students and 5 staff members. In the onward journey, one hour was spent at Amirthi falls and the students enjoyed well. Next in Kavalur, the purpose and the functioning of observatory was sketched out clearly by one staff representative of that observatory. He explained about their research work as well as how they operate the biggest telescope through the system. Also, questions raised by the students related to the recruitment process for getting a job in that field and the basic qualifications required are well explained by that staff. All accompanied staff members were cooperated well with the coordinator and the trip was ended smoothly by 11.30.p.m.

- Mr.P.Nagarajan defended his thesis entitled "Contributions to the Study on Some Bulk Queue with Unreliable Server with Vacations" at Annamalai University on 29th of December 2017.

- Mrs N.Saradha defended her thesis entitled as Studies in Graph theory with Special Reference to Equivalence Sets at SCSVMV, Kanchipuram, on 02.04.2018.

- Mrs.K.Pramila defended her thesis entitled as Ranking the Alternatives with Risk Analysis and Confidence Levels in Fuzzy Multi Criteria Decision Making Problems (FMCDM) at SCSVMV, Kanchipuram, on 18.04.2018.

- Mrs. D.Vijayalakshmi defended her thesis entitled as Application of Graph Theoretical Methods in Protein Analyses at SCSVMV, Kanchipuram, on 23.04.2018.

- Mrs.R.Mageswari defended her thesis entitled as Study of Protein Characteristics Using Graph Theoretical Techniques and Contact Maps at SCSVMV, Kanchipuram, on 23.04.2018.

- Mrs.K.Bharathi defended her thesis entitled as Evolutionary Algorithm in Multi Objective Optimization at VIT, Chennai, on 20th of June 2018.

- Five doctoral committee meetings of external candidates were conducted during the month of July 2017.

- Three doctoral committee meetings of external candidates were conducted during the months of January-June 2018.

➢ **Industrial Visit**

31 students from B.Sc & M.Sc -Mathematics. visited High Field Tea factory at Coonoor on 07.04.18 and 08.04.18. The faculty members Dr.P.Nagarajan, Mr.V.K.Radhakrishnan, Mrs.B.Amudha, and Ms.R.Kalaiarasi accompanied the students.

Result Analysis

ODD SEMESTER (2017 – 2018)

S.No.	Department	Year/Sem	Subject	Pass %
1.	Mathematics	I M.Sc.,/I	Abstract Algebra	100%
2.		I M.Sc.,/I	Real Analysis	82%
3.		I M.Sc.,/I	Operation Research	100%
4.		I M.Sc.,/I	Operation Research-Lab	100%
5.		I M.Sc.,/I	Ancient Mathematics	100%
6.		II M.Sc.,/III	Applied Mathematics	100%
7.		II M.Sc.,/III	Applied Mathematics-Lab	100%
8.		II M.Sc.,/III	Discrete Mathematics	100%
9.		II M.Sc.,/III	Business Mathematics	100%
10.		II M.Sc.,/III	Business Mathematics-Lab	100%
11.		II M.Sc.,/III	Linear Algebra	100%
12.		II M.Sc.,/III	Quantitative Aptitude	100%
13.		I B.Sc.,/I	Calculus	89%
14.		I B.Sc.,/I	Analytical Geometry & Trigonometry	84%
15.		I B.Sc.,/I	Allied Statistics-I	58%
16.		II B.Sc.,/III	Differential Equations and its Applications	83%
17.		II B.Sc.,/III	Numerical Methods	90%
18.		II B.Sc.,/III	Quantitative Aptitude	100%
19.		III B.Sc.,/V	Abstract Algebra	100%
20.		III B.Sc.,/V	Statics	81%
21.		III B.Sc.,/V	Sequence & Series	87%
22.		III B.Sc./V	Complex Analysis	100%
23.		III B.Sc./V	Data Interpretation	100%
24.	CSE	IV A/VII	Resource Management Technique	95%

S.No.	Department	Year/Sem	Subject	Pass %
25.	CSE	IV B/VII	Resource Management Technique	97%
26.		III- /V	Automata Theory	75%
27.		II A/III	Applied Mathematics for Computer Engineers-I	71%
28.		II B/III	Applied Mathematics for Computer Engineers-I	77%
29.		II C/III	Applied Mathematics for Computer Engineers-I	67%
30.		II D/III	Applied Mathematics for Computer Engineers-I	86%
31.		II A/III	Applied Discrete Mathematics	98%
32.		II B/III	Applied Discrete Mathematics	85%
33.		II C/III	Applied Discrete Mathematics	94%
34.		II D/III	Applied Discrete Mathematics	93%
35.		I A/I	Basic Mathematics for Engineers I	75%
36.		I B/I	Basic Mathematics for Engineers I	85%
37.		I C/I	Basic Mathematics for Engineers I	69%
38.		I D/I	Basic Mathematics for Engineers I	80%
39.	CSE& IT	I E/I	Basic Mathematics for Engineers I	78%
40.	IT	II/III	Applied Mathematics for Technology – I	40%
41.	MECH	IV A/VII	Operations Research	93%
42.		IV B/VII	Operations Research	87%
43.		III-A/V	Applied Mathematics for Mechanical Engineers – III	77%
44.		II A/III	Applied Mathematics for Mechanical Engineers – I	47%
45.		II B/III	Applied Mathematics for Mechanical Engineers – I	81%
46.		I A/I	Basic Mathematics for Engineers I	82%
47.		I B/I	Basic Mathematics for Engineers I	73%

S.No.	Department	Year/Sem	Subject	Pass %
48.	MECH	I C/I	Basic Mathematics for Engineers I	79%
49.	ECE	II A/III	Applied Mathematics for Electronics Engineers-I	53%
50.		II B/III	Applied Mathematics for Electronics Engineers-I	61%
51.		I A/I	Basic Mathematics for Engineers I	87%
52.		I B/I	Basic Mathematics for Engineers I	97%
53.		I C/I	Basic Mathematics for Engineers I	92%
54.		I D/I	Basic Mathematics for Engineers I	84%
55.	EEE	III/V	Applied Mathematics for Electrical Engineers-III	62%
56.		II/III	Applied Mathematics for Electrical Engineers-I	50%
57.	EEE/EIE/ MECHT	I/I	Basic Mathematics for Engineers I	76%
58.	CIVIL	III/V	Applied Mathematics for Civil Engineers – III	64%
59.		II/III	Applied Mathematics for Civil Engineers – I	77%
60.		I/I	Basic Mathematics for Engineers I	71%
61.	EIE	III/V	Applied Mathematics for Instrumentation Engineers-III	100%
62.		II/III	Applied Mathematics for Instrumentation Engineers-I	50%
63.	MECHT	III/V	Mathematics-V	100%
64.		II/III	Mathematics-III	66%
65.	M.E(CSE)	I/I	Advanced Operations Research	100%

S.No.	Department	Year/Sem	Subject	Pass %
66.	M.Tech(EDT) (ECE)	I	Applied Maths for Manufacturing and Design	100%
67.	M.E(EEE)	I/I	Advanced Applied Mathematics	100%
68.	M.E-Design (MECH)	I/I	Advanced Numerical Methods	100%
69.	B.C.A	I/I	Mathematical Foundations of Computer Science	84%
70.	B.Sc.,(CS)	I/I	hematical Foundations of Computer Science	77%
71.	Physics	I M.Sc.,/I	Mathematical Physics	95%
72.		III B.Sc.,/I	Mathematical Physics	92%
73.		I B.Sc.,/I	Allied Mathematics	65%
74.	Chemistry	II B.Sc.,/III	Allied Mathematics	100%

Even Semester (2017-2018)

S.No.	Department	Year/Sem	Subject	Pass %
1.	Mathematics	M.Phil.,	Probability theory & Stochastic Process	100%
2.		M.Phil.,	Advanced Applied Mathematics	100%
3.		M.Phil.,	Research Methodology	100%
4.		II M.Sc.,/IV	Applied Graph Theory	100%
5.		II M.Sc.,/IV	DE and Special Functions	100%
6.		I M.Sc.,/II	Managerial Decision Making	100%
7.		I M.Sc.,/II	Complex Analysis	89%
8.		I M.Sc.,/II	Numerical Methods	100%
9.		I M.Sc.,/II	Topology	88%
10.		I M.Sc.,/II	Operations Research Lab	100%
11.		I M.Sc.,/II	Value Education	100%
12.		III B.Sc/VI	Real Analysis	100%
13.		III B.Sc./VI	Discrete Mathematics and Automata Theory	100%
14.		III B.Sc./VI	Dynamics	100%
15.		III B.Sc./VI	Linear Algebra	100%
16.		III B.Sc./VI	Operations Research	100%
17.		II B.Sc.,/IV	PDE and Transform Techniques	100%
18.		II B.Sc.,/IV	Graph Theory	93%
19.		I B.Sc.,/II	Vector Calculus & Fourier Series	77%
20.		I B.Sc.,/II	Lab – Basics of MATLAB	100%
21.		I B.Sc.,/II	Allied Statistics-II	97%
22.		I B.Sc.,/II	Classical Algebra	84%
23.	CSE	IIA/IV	Logics and Combinatorics	88%
24.		IIB/IV	Logics and Combinatorics	98%
25.		IIC/IV	Logics and Combinatorics	98%
26.		IID/IV	Logics and Combinatorics	90%

S.No.	Department	Year/Sem	Subject	Pass %
27.	CSE	I A/II	Basic Mathematics for Engineers II	82%
28.		I B/II	Basic Mathematics for Engineers II5	79%
29.		I C/II	Basic Mathematics for Engineers II	84%
30.		I D/II	Basic Mathematics for Engineers II	87%
31.	CSE&IT	I E/II	Basic Mathematics for Engineers II	88%
32.	IT	II/IV	Applied Mathematics for Technology -II	50%
33.	MECH	IIA/IV	Applied Mathematics for Mechanical Engineers – II	60%
34.		IIB/IV	Applied Mathematics for Mechanical Engineers – II	74%
35.		I A/II	Basic Mathematics for Engineers II	76%
36.		I B/II	Basic Mathematics for Engineers II	78%
37.		I C/II	Basic Mathematics for Engineers II	71%
38.	ECE	III – A/VI	Applied Random Processes	78%
39.		IIA/IV	Applied Mathematics for Electronics Engineers-II	83%
40.		IIB/IV	Applied Mathematics for Electronics Engineers-II	76%
41.		IIC/IV	Applied Mathematics for Electronics Engineers-II	61%
42.		I A/II	Basic Mathematics for Engineers II	92%
43.		I B/II	Basic Mathematics for Engineers II	75%
44.		I C/II	Basic Mathematics for Engineers II	98%
45.		I D/II	Basic Mathematics for Engineers II	94%

S.No.	Dept	Year/Sem	Subject	Pass %
46.	EEE	II/IV	Applied Mathematics for Electrical Engineers-II	95%
47.	EEE/EIE/ MECHT	I/II	Basic Mathematics for Engineers II	75%
48.	CIVIL	II/IV	Applied Mathematics for Civil Engineers – II	81%
49.		I/II	Basic Mathematics for Engineers I	79%
50.	EIE/ MECHT	III/VI	Applied Mathematics for Instrumentation Engineers-IV	85%
51.	EIE	II/IV	Applied Mathematics for Instrumentation Engineers-II	100%
52.	MECHT	II/IV	Mathematics-IV	62%
53.	BCA	I/II	Computer Associated Numerical Methods	77%
54.	B.Sc., (CS)	I/II	Computer Associated Numerical Methods	84%
55.	MCA	II/IV	Operations Research	84%
56.	Chemistry	II B.Sc.,/III	Allied Mathematics	73%
57.	Physics	I B.Sc.,/I	Allied Mathematics-II	66%

Additional Responsibilities

Dr.T.Venugopal

- ❖ Director of Research and Publications
- ❖ Member, Board of Management
- ❖ Member, Planning and Monitoring Board
- ❖ Member, Board of Studies in Mathematics
- ❖ Member, Academic Council
- ❖ Coordinator, Research Board
- ❖ Coordinator, Research Promotion Team
- ❖ Chairman, Students' Cabinet Advisory Committee
- ❖ Member, Internal Planning Committee
- ❖ Chairman, Teaching Staff Grievance Redressal committee

Dr. K. Srinivasa Rao

- ❖ Nodal Officer, UGC/AISHE
- ❖ Chairman-Statistics and Information Cell
- ❖ Worked as Assistant Chief Warden during 2014-2015
- ❖ Co-coordinator - National Institute Ranking Framework (NIRF-2017 & NIRF- 2018)
- ❖ Acted as Chief Superintendent, University Theory Examinations, March-June, 2017
- ❖ Co-ordinator - Curricular Aspects, Task Force Committee (TFC) in order to prepare of Self Study Report (SSR) for re-appraisal to NAAC.
- ❖ Member of Anti- Ragging Squad during 2014-2017
- ❖ Member of Students' Cabinet Advisory Committee from 2015 to till date
- ❖ Member of Students Counseling System from 2016 to till date
- ❖ Member- Board of Studies, Department of Mathematics, SCSVMV

Dr.N.Saradha

- ❖ Member of Board of Studies
- ❖ Convener of Time Table Committee
- ❖ Co-ordinator, IQAC, 2017-18
- ❖ TNPSC Exam -Chief examiner (2017)
- ❖ Department Cultural co-ordinator
- ❖ National Workshop on MATLAB in Applied Sciences – Organizing Secretary
- ❖ UGC- Hopitality Committee- co ordinator
- ❖ Anti Ragging Committee-Member

Dr.R.Malathi

- ❖ Deputy Warden , Girls Hostels, SCSVMV from 12.06.2018.
- ❖ Answer script Evaluator for PG/UG, Sankara Arts and Science college on May 2018.
- ❖ Reception committee - UGC visit 2018.
- ❖ Answer script Evaluator for PG/UG, Sankara Arts and Science college on December 2017.
- ❖ Acted as a Exam cell member for University examinations Nov/Dec 2017, conducted by Physics dept.
- ❖ Co-ordinator & Time table in-charge for I B.Sc Mathematics(II sem), Dec 2017 to April 2018.
- ❖ Stage & Reception committee, Fine arts &Humanities Programme, November 13-15, 2017.
- ❖ Member, Internal Complaint Committee(ICC)
- ❖ Co-ordinator, IQAC, 2017-18
- ❖ Co-ordinator of Department Activity : 2017-18
- ❖ Organizing Secretary of Winter Refresher Course.
- ❖ Acted as Judge for "Logo Match" competition for WMD-Helix'18 on 23.03.2018.

Dr.D.Vijayalakshmi

- ❖ BOS Member 2017-2018.
- ❖ Organizing Secretary for ICPAM 2018
- ❖ Committee member for Winter Refresher course – 2018.
- ❖ Committee member for National workshop on MATLAB in Applied Sciences in 2017.
- ❖ Acted as an organizer as well as judge in Helix – 2018.

Dr.E.Geetha

- ❖ Acted as a Department Library in Charge from August 2016 – August 2018.
- ❖ BOS Member 2017-2018.
- ❖ Organizing Secretary for ICPAM 2018
- ❖ Class In – Charge for I M.Sc Mathematics admitted from 2017 – 2018.
- ❖ Acted as an organizer as well as judge for the event Quiz in Helix – 2018.
- ❖ Committee member for National workshop on MATLAB in Applied Sciences in 2017.
- ❖ Committee member for Winter Refresher course – 2018.

Dr.R.Mageswari

- ❖ Member - BOM - Sri Sankara Bagavathi Arts&Science College, Kommadikottai, since July 2007.
- ❖ Women Cell – Member – 2014-2017.
- ❖ NSS Programme Officer since September 2017.
- ❖ Member in the centre for Development of Teaching and Learning since November 2017.
- ❖ Committee member for National workshop on MATLAB in Applied Sciences in 2017.
- ❖ Committee member for Winter Refresher course – 2018.
- ❖ Committee member of ICPAM-2018

Dr.P.Nagarajan

- ❖ Editor of Department News letter –Ganith Vaardha
- ❖ Internal examiner for M.Phil Viva Examination at Department of Mathematics, SCSVMV university held on 31-08-17.
- ❖ Department computer lab preparation in charge.
- ❖ NSS coordinator
- ❖ World mathematics day event organizer 'what comes next.'
- ❖ Committee member for National workshop on MATLAB in Applied Sciences in 2017.
- ❖ Committee member for Winter Refresher course – 2018.
- ❖ Committee member of ICPAM-2018

Dr.P.Balaji

- ❖ Committee member for National workshop on MATLAB in Applied Sciences in 2017.
- ❖ Committee member for Winter Refresher course – 2018.
- ❖ Committee member of ICPAM-2018

Dr.S.Vijayabarathi

- ❖ Class In – Charge for I B.Sc., Mathematics admitted from 2017 – 2018
- ❖ Editor of Department News letter –Ganith Vaardha
- ❖ Committee Member-   National Workshop on MATLAB in Applied Sciences
- ❖ Hospitality committee member- Convocation 2017.
- ❖ Committee member of ICPAM-2018
- ❖ Internal Examiner of M.Phil Viva Examination held on April 2018.
- ❖ Question Paper Setter of Sathyabama University- 2017
- ❖ Mentoring students.
- ❖ Committee member for Winter Refresher course – 2018.

Dr.K.Pramila

❖ Editor of Department News letter –Ganith Vaardha
❖ Committee Member-   National Workshop on MATLAB in Applied Sciences
❖ Hospitality committee member- Convocation 2017.
❖ Committee member of ICPAM-2018
❖ Internal Examiner of M.Phil Viva Examination held on April 2018.
❖ Mentoring students.
❖ Question Paper Setter of Sathyabama University- 2017.
❖ In-Charge- Minutes of department meetings-2017-18
❖ Committee member for Winter Refresher course – 2018.

Dr.J.Sengamalaselvi

❖ Co-ordinator of workshop women threats-2017
❖ Mentor
❖ Prepared Academic performance profile-IQAC
❖ Member - women cell from 2014 onwards
❖ Committee Member-   National Workshop on MATLAB in Applied Sciences
❖ Women's awareness program on 23.02.2017-school visit Internal Examiner of M.Phil Viva Examination held on April 2018.

Dr.V.K.Radhakrishnan

❖ Internal Exam Cell Coordinator
❖ National Workshop on MATLAB – Organising Committee Member
❖ ICPAM – Organising Committee Member
❖ Winter Refresher Course on Pure and Applied Mathematics – Organizing Secretary
❖ UGC Visit -Hospitality Committee member
❖ IQAC Sub-Committee Member
❖ Sri Muthusamy Dikshithar Music Festival – Organising Committee Member

Dr.A.Dhanalakshmi

- ❖ Department Placement Co-ordinator.
- ❖ B.Sc., Statistics Curriculum design and Framing syllabus.
- ❖ Admission committee - B.Sc.,M.Sc., M.Phil.,(Mathematics)
- ❖ Department Profile Preparation (16-17).
- ❖ Committee member - Silver Jubilee year.
- ❖ Reception Committee Member – Winter Refresher course
- ❖ Certificate Committee Member – World Mathematics Day (Helix-18)
- ❖ Organizing Secretary - International Conference on Pure and applied Mathematics.

Dr.K.Bharathi

- ❖ Committee Member-   National Workshop on MATLAB in Applied Sciences
- ❖ Committee member of ICPAM-2018
- ❖ Committee member for Winter Refresher course – 2018.
- ❖ Organizer for 'Quality Enrichment Programme – III (QEP 2017)' organized by the Department of Mathematics, SCSVMV University on 27-10-17.
- ❖ Acted as Event Organizer of Logo Matching in Helix 2018 - World Mathematics Day , conducted by Department of Mathematics, SCSVMV on 23-03-18.

Dr.T.N.Kavitha

- ❖ Hospitality Committee Member for ICPAM 2018
- ❖ Member - Reception Committee in Helix 2018
- ❖ In charge of log book submission
- ❖ Placement cell coordinator
- ❖ Department admission committee member

- ❖ Organizing secretary – National workshop on Matlab in Applied sciences
- ❖ Hospitality committee – Winter Refresher course
- ❖ WMD- event organizer and judge
- ❖ Mentoring students.
- ❖ Assisted the NSS programme officer in the special camp
- ❖ Given a orientation class to I year students of ECE A section

Dr. A. Gayathri

- ❖ Mentoring Students.
- ❖ Member, VIP Hospitality Committee, SCSVMV 20th Convocation, 2017.
- ❖ Website co-ordinator, Dept. of Mathematics, 2017-18.
- ❖ Member, TIF,UGC nodal 2016 & 2017
- ❖ Member, Anti-ragging Committee – 2017
- ❖ Time-table Co-ordinator, evarsity, Department of Mathematics – 2017.
- ❖ e- varsity incharge.
- ❖ Students Farewell committee coordinator-2017
- ❖ Organizing Secretary - International Conference on Pure and applied Mathematics.

Mrs.B.Amudha

- ❖ Committee Member- National Workshop on MATLAB in Applied Sciences
- ❖ Committee member of ICPAM-2018
- ❖ Committee member for Winter Refresher course – 2018.

Mr.K.Saravanan

- ❖ Committee Member- National Workshop on MATLAB in Applied Sciences
- ❖ Committee member of ICPAM-2018
- ❖ Committee member for Winter Refresher course – 2018.

Ms.R.Kalaiarasi

- ❖ Committee Member- National Workshop on MATLAB in Applied Sciences
- ❖ Committee member of ICPAM-2018
- ❖ Committee member for Winter Refresher course – 2018.

Mrs. A.Shakila

- ❖ Committee Member- National Workshop on MATLAB in Applied Sciences
- ❖ Committee member of ICPAM-2018
- ❖ Committee member for Winter Refresher course – 2018.
- ❖ Internal Exam cell member-2017-18

Department of Mathematics
Research Colloquium
(August 2017 to April 2018)

The following list is the colloquium lectures given by staff members of department of Mathematics as per the details given in the table below.

| S.No	Date	Name of the Faculty	Topic
1.	04.08.2017	Dr.R.Malathi	Extension of Factorial Concept to Negative Numbers.
2.	11.08.2017	Dr.S.Vijayabharathi	Rhotrix Matrices
3.	18.08.2017	Mrs.K.Pramila	Solving LPP Using MATLAB
4.	01.09.2017	Dr.T.N.Kavitha	Weiner Detour Matrix of Graphs
5.	08.09.2017	Dr.K.Srinivasa Rao	Computing the Interpolating polynomial in MATLAB using Vandermonde Matrix
6.	22.09.2017	Mrs.R.Mageswari	AASA Algorithm
7.	13.10.2017	Mrs.N.Saradha	Blast Domination Number of a Graph
8.	20.10.2017	Mrs.D.Vijayalakshmi	DD Matrix with Least Positive Eigen Value and Protein Similarity
9.	03.11.2017	Dr.E.Geetha	Consequences of thermal radiation on an unsteady nano fluid titanium dioxide flow past over a vertical plate.
10.	10.11.2017	Dr.P.Nagarajan	Underlying Mathematics behind the Angry Bird Video Games
11.	17.11.2017	Mr.P.Balaji	Marked graph of Automated Manufacturing Cell with Three Machines Three Robots and two part types and its conversion into Digraph.
11.	29.12.2017	Dr.J.Sengamala Selvi	Real Application of CPM & PERT Using Grin 40 Software
12.	06.01.2018	Mr.V.K.Radhakrishnan	Weighted Node Optimization.
13.	12.01.2018	Dr.K.Srinivasa Rao	On Hosoya Polynomial & Wiener Index
14.	03.03.2018	Dr.A.Dhanalakshmi	Graph Polynomials in Chemistry
15.	16.03.2018	Mrs.K.Bharathi	Multi Objective Transportation Problem Using ADDON Algorithm
16.	06.04.2018	Dr.A.Gayathri	Introducing Python

Awards / Recognition Received by Faculty Members

- Dr.K.Srinivasa Rao received best teacher award for the year 2016-17 on Teacher's Day Celebration 2017.
- Dr.R.Malathi got appreciation award on Teacher's Day Celebration 2017 for scoring above 300 in PBAS 2016-17.
- Dr.J.Sengamalaselvi, Mr.V.K.Radhakrishnan, Dr.T.N.Kavitha got appreciation awards on Teacher's Day Celebration 2017 for scoring above 300 in PBAS 2016-17.
- Dr.A.Dhanalakshmi has qualified in Tamilnadu State Eligibility Test for Assistant Professor held on 23rd of April 2017.

OUTREACH ACTIVITIES 2017-18

➢ Dr. J. Sengamalaselvi acted as expert in the National level panel discussion on " Curriculum   Frame workshop-2017" organized by State Council of Educational Research and Training, Tamilnadu at Anna University, Chennai on 20.07.2017 to 22.07.2017.
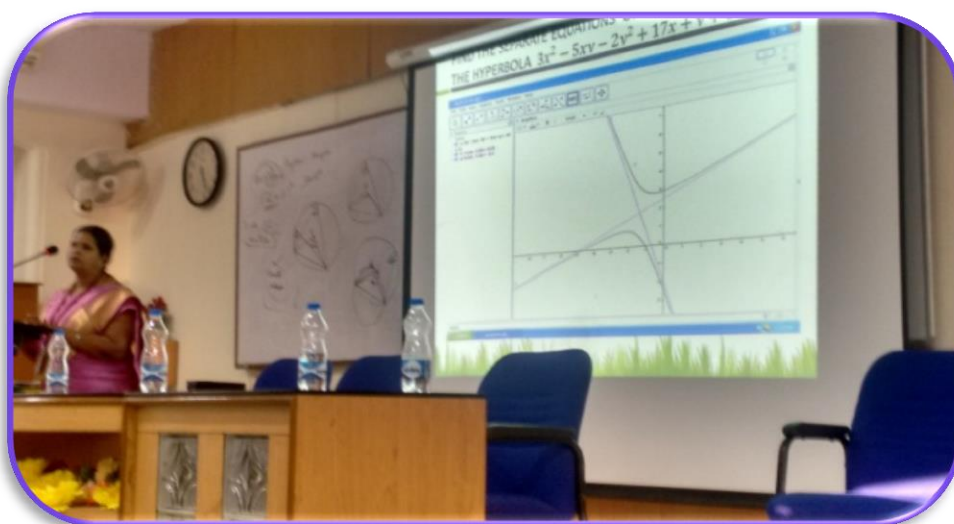
- Mrs.R.Mageswari acted as Chief Guest in inauguration of Mathematics Association at SSB Arts & Science College, Kommadikottai and delivered a lecture on the topic "Automaton" on 24/08/2017.

- Dr.K.Srinivasa Rao delivered a invited talk on "Boolean Algebra of Pre A*-Algebra" in the International Conference on Advances in Mathematics and Computing Science at V.V.Vanniaperumal College for Women, Virudhunagar, Tamil Nadu during 14-16 of December, 2017.

- R.Mageswari, P.Nagarajan organised the Dengue Awareness Programme at Arignar Anna Arangam, Kanchipuram on 02.11.2017.

- Dr. K.Srinivasa Rao, delivered a talk on Mathematical Applications at the Department of Mathematics, S.S.K.V. College of Arts and Science for Women, Kizhambi, Kanchipuram, Tamilnadu on 8th January, 2018.

- Dr. J.Sengamalaselvi, Dr. T.N.Kavitha, Asst. Prof. of Mathematics, acted as the Resource persons in the National workshop on Math with open source software organized by the Department of Mathematics, Kanchi Shri Krishna Arts and Science College, Kilambi, Kanchipuram on 01.02.2018.

- Dr.K.Srinivasa Rao, Professor & Head, Department of Mathematics, has delivered an invited talk on Hosoya Polynomial and Wiener Index of Concatenated Octachains at International Conference in Mathematics, Computers & Physical Sciences-2018, organized by International Multidisciplinary Research Foundation, Chandigarh, Chandigarh Academic Chapter, India, during 22-24 February, 2018.

- Mrs.D.Vijayalakshmi, Asst. Prof. of Mathematics acted as a Resource Person cum Chief Guest in the one day seminar program MATRIX - 2018 organized by the Department of Mathematics, Annai Teresa Arts and Science College, Mangalam, Thirukazhukundram, Kanchipuram on 27.02.2018.

- Mrs.D.Vijayalakshmi, Dr.A.Dhanalakshmi, Mrs. K.Bharathi Asst.Prof.of Mathematics acted as Resource Persons to motivate the students and to enhance their marks in mathematics and to encourage them to face

the examinations in Government High School, Musaravakkam, Kanchipuram on 9th March 2018.

- Dr.K. Srinivasa Rao, delivered an Invited talk on MATLAB at the Department of Mathematics, Sri Venkateswara University, Tirupati on the eve of Pi Day Celebrations on 14th March 2018.

- Dr. J.Sengamalaselvi, Asst. Prof. of Mathematics, delivered an invited lecture on Geometry and graph representation of Higher Secondary Mathematics education through visual math on 14.03.2018 at the Government High School, Vaiyavoor, Kanchipuram.

- Dr.R.Malathi, Dr. J.Sengamalaselvi and Dr.T.N.Kavitha, Asst. Prof. of Mathematics, acted as the Resource Persons in the National workshop on Math with open source software in the Wisdom Women's Arts and Science College, Anakkavoor, Cheyyar on 28.03.2018.

- ➢ Dr. K.Srinivasa Rao, delivered Guest Lecture on Complex Analysis at the Department of Mathematics, Adhi College of Engineering and Technology, Sankarapuram, Puliambakkam Post, Tamilnadu on 20th April, 2018.

- ➢ Dr. K. Srinivasa Rao, delivered a lecture on MATLAB and Its Applications at the Department of Mathematics, Kasetsart University, Bangkok, Thailand on 23rd May 2018.
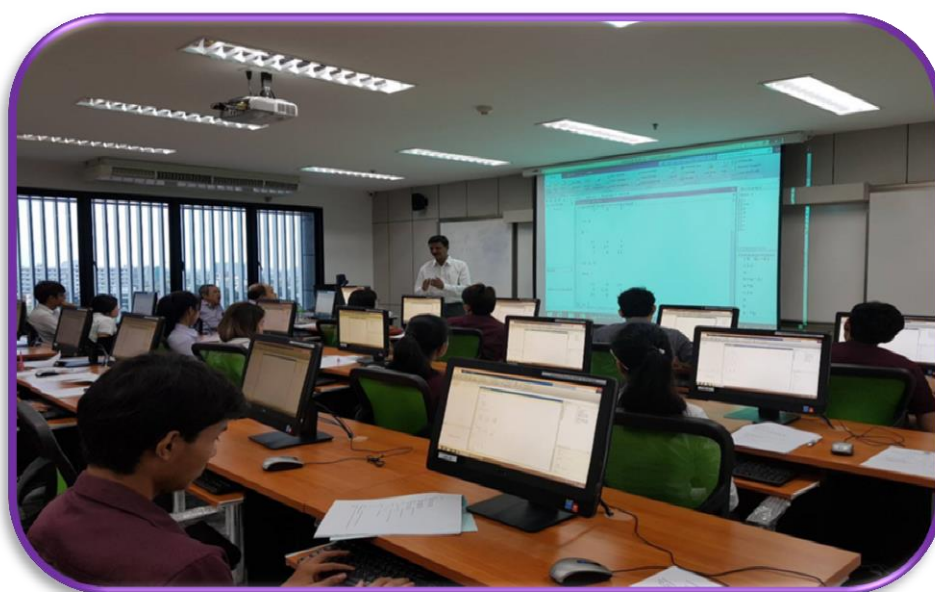
Dr.P.Nagarajan and Mrs.R.Mageswari organized NSS Programmes.

- ➢ NSS special camp programme at Vaiyavoor Government Hr. Sec. School from 08/03/2018 to 14/03/2018.NSS volunteers interacted with the village people.

Extension Activities

- Mrs. N.Saradha Assistant Professor of Mathematics has chaired the paper presentation session at International Conference on Pure and Applied Mathematics, organized by the Department of Mathematics, SCSVMV, during 19-20 February, 2018.

- Dr.K.Srinivasa Rao, Professor & Head, Department of Mathematics, has Chaired the Paper Presentation session at International Conference in Mathematics, Computers & Physical Sciences-2018, organized by International Multidisciplinary Research Foundation, Chandigarh, Chandigarh Academic Chapter, India, during 22-24 February, 2018.

- Dr. J.Sengamalaselvi, Asst. Prof. of Mathematics, acted as a Chair Person in the National Conference on Recent Advances in Mathematics(NCRAM-18) in the St.Peter's University of Higher Education and Research Institute, Avadi on 25.05.2018.
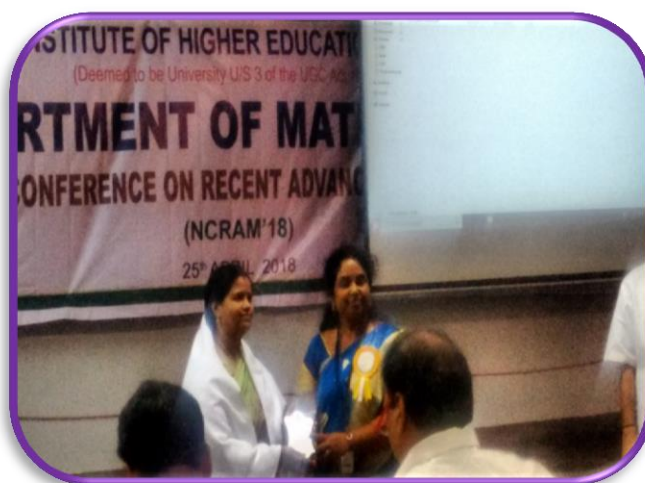
BOOK PUBLICATIONS

1. Vijayabarathi.S Analytical Geometry 2D& 3D published by SCSVMV Press, ISBN:978-93-87088-20-7, edition-1, vol-1.

2. T.N.Kavitha A Text Book of classical Algebra published by SCSVMV Press, ISBN:978-93-87088-15-3, 2017, edition-1, vol-1.

Department of Mathematics

M.Phil (Full Time) Guide Allotment List (2017 – 2018)

S.No.	Name of the Student	Name of the Guide
1.	P.J.Anjali	Dr. N.Sarada
2.	M.Anushalini	Dr. E.Geetha
3.	T.Manikandan	Dr. K.Srinivasa Rao
4.	V.Meena	Dr. R.Mageswari
5.	P.Ragavi	Dr. D.Vijayalakshmi
6.	A.R.Shoba	Dr. R.Malathi