

Revised on 10 August 2021

Department of Mathematics
SCHOOL OF PHYSICAL SCIENCES



CENTRAL UNIVERSITY OF KERALA
केरल केन्द्रीय विश्वविद्यालय

M.SC. PROGRAMME

CURRICULUM & SYLLABUS

VALUE ADDED COURSES

Duration of each Course: 30 hours

Course Title	Operations Research
Course Details	Basic Concept of Linear and Non Linear Programming problem, Application of linear and Nonlinear programming problem, Evaluation of critical Path, project evaluation and review techniques. Game theory and its application.
Faculty	Dr. K. A Germina
Course Title	Introduction to LaTeX and Scientific Writing
Course Details	Environment Setup for LATEX, Basic component of LATEX, formatting and layouts, figures and tables, basic mathematics, Resume & Report Writing, Thesis Writing, Paper Writing, PPT preparation.
Faculty	Dr. Gnanavel S
Course Title	<i>Basics of MATLAB for Scientific Computing</i>
Course Details	Root finding and equation solving, Solving system of equations, Eigenvalues, eigenvectors and eigen decomposition, Singular Value Decomposition, Interpolation, curve fitting and surface modeling, Numerical integration and differentiation, Working with polynomials, Solving Ordinary Differential Equations (ODEs), Solving Boundary Value Problems (BVPs), Solving Delayed Differential Equations (DDEs), Linear Programming (LP), Mixed-Integer Linear Programming (MILP), Quadratic Programming (QP), Constrained and unconstrained nonlinear optimization. Familiarity with parallel open course
Faculty	Dr. Manikandan Rangaswamy /Dr. Gnanavel S.
Course Title	Basic Calculus for Scientists and Economists

Course Details	Numbers, Functions, Sequences and Limits of Functions, Continuity, Derivative, Maxima and Minima and Taylor's expansion, Integration of Real Functions, Function of two variables, Continuity and Differentiability, Lagrange Multiplier Rule, Infinite Series and Multiple Integrals.
Faculty	Dr. Manikandan Rangaswamy
Course Title	Basics in Linear Algebra
Course Details	Euclidean vector spaces, Eigenvalues and eigenvectors,

	Orthogonal matrices, Linear transformations, Solving systems of equations with matrices, Mathematical operations with matrices, Matrix inverses and determinants, Numerical Linear Algebra.
Faculty	Dr. Shaini P
Course Title	BASIC MATHEMATICAL ANALYSIS
Course Details	<p>A quick review of sets and functions and planned to build a basic knowledge in the following:</p> <p>Mathematical induction. Finite and infinite sets. Real Numbers. The algebraic property of real numbers. Absolute value and real line. The completeness property of \mathbb{R}. Applications of supremum property. Intervals, Nested interval property and uncountability of \mathbb{R}. Sequence of real numbers. Sequence and their limits. Limit theorems. Monotone sequences. Subsequence and Bolzano – Weierstrass theorem. Cauchy criterion. Properly divergent sequences. Open and closed sets. Sums and Products. Basic Algebraic properties; Further properties, Vectors and Moduli; Complex conjugates; Exponential form; Product and powers in exponential form; Arguments of products and quotients; Roots of complex numbers; Regions in the complex plane.</p>
Faculty	Dr Ali Akbar K

Sl. No.	Timestamp	Email Address	Name of the student	Reg. Number	Name of the Department	Phone number
1	6/24/2021 9:22:55	cristeenavivek@gmail.com	CRISTEENA DEVASSIA	PPH052014	Physics	6238478941
2	6/24/2021 9:58:46	ansmariyageorge96@gmail.com	Ans Mariya George	BZY052004	Zoology	9048044936
3	6/24/2021 10:14:36	manasjyotisarma2017@gmail.com	MANAS JYOTI SARMA	BZY052019	ZOOLOGY	9365184084
4	6/24/2021 10:47:01	drjosmyjoseph@gmail.com	Dr Josmy Joseph	MMP052017	Dept. of Public Health and Community Medicine	9739084800
5	6/24/2021 10:51:26	aravindhaj99@gmail.com	Aravindh AJ	MMP052003	Department of community medicine and public health	8220817040
6	6/24/2021 10:59:50	sai.srsa@gmail.com	Sai Prasanth KRS	BZY052028	Zoology	9895527903
7	6/24/2021 16:16:57	bipinb15@gmail.com	Dr. Bipin Balakrishnan	MMP052010	Department of Public Health and Community Medicine	8547015069
8	6/24/2021 17:18:51	sahabuddina070@gmail.com	SAHABUDDIN AHMED	PCH052028	CHEMISTRY	06000182436
9	6/25/2021 22:11:07	amruthavbabu005@gmail.com	Amrutha V	PCH052004	Chemistry	7559979161

LaTex and Scientific Writing

Ser	Name	Reg. No.
1	AMBIKA BALAKRISHNAN M V	PMA051801
2	AMRUTHA C	PMA051802
3	ANBARASAN S	PMA051803
4	ANOOP V V	PMA051804
5	ANUJ KUMAR	PMA051805
6	ASWATHI ELIZABATH	PMA051807
7	ATHIRA. E.V	PMA051808
8	ATHIRA. V	PMA051809
9	BHAGYALAKSHMI M	PMA051810
10	DIBYAJYOTI DAS	PMA051812
11	DINESH RAM KEUT	PMA051813
12	GREESHMA K	PMA051815
13	HEMAND HARIKUMAR	PMA051816
14	KANAGAPRIYA M	PMA051818
15	LEIJO JOSE	PMA051819
16	MANEESHA K V	PMA051820
17	MEGHA ROSE MANOJ	PMA051821
18	MIDHUNA CHANDRAN	PMA051822
19	MUKTASHREE MAJHI	PMA051824
20	MUNEESWARAN R	PMA051825
21	NAMITHA	PMA051826
22	NIVEDHYA BALAKRISHNAN	PMA051827
23	P.THULASI GANGADHARAN	PMA051828
24	PATTANSHETTI ANKITA KEDARNATH	PMA051829
25	RANI BABY	PMA051832
26	RESHMA SUNIL	PMA051834
27	RIJITH CHACKO	PMA051835
28	SHEEBA P	PMA051836
29	SNEHA BALAKRISHNAN	PMA051837
30	SUBHASHMITA SETHY	PMA051838
31	SUBHENDU MOHANTY	PMA051839

Value added course (MAT 5057- Basics in Linear Algebra) -Dept. of Mathematics

Dr. Germina K A <germinaka@cukerala.ac.in>

Jun 23, 2021, 6:59 PM

to Faculty, HoD, Dean, DSW, ACADEMIC, Vice, Registrar, controller, privatesecretary, shainipv, Vilfred, aliakbar, gnanavel, Manikandan, Department

Dear Sir/Madam,

Department of Mathematics, Central University of Kerala is offering a value added course (MAT 5057- Basics in Linear Algebra) of 30 hours duration for the PG students.

I request you to please forward the same to the students.

Course Instructor: Dr. Shaini P Assistant Professor, Department of Mathematics, CUK

Linear algebra is your ticket to multidimensional space and is stuff you see around every day: electricity, economics etc. Study it if you are in politics, economics, computer graphics, physics, chemistry, statistics or anything quantitative

Syllabus: MAT 5057- Basics in Linear Algebra

Euclidean vector spaces, Eigenvalues and eigenvectors, Orthogonal matrices, Linear transformations, Solving systems of equations with matrices, Mathematical operations with matrices, Matrix inverses and determinants.

Value added courses will not have any credits and hence no credits will be added to your mark list. There will be continuous assessment in the course and a certificate will be provided at the end of the course.

No. of Students (Batch size): 60 (only PG students are allowed in this batch)

Course start date : 15th July 2021 (Wednesday)

Deadline for intimating your interest: 10th July 2021

Since only 60 students are allowed in a batch, first come first served principle will be followed

Those who would like to join this course are requested to intimate your interest at the following link.

<https://forms.gle/wBHmeRMszHXun1SA7>

I request you to please intimate the students for the early registration.

With best regards

K. A Germina.

(HoD, Mathematics)