



DEPARTMENT OF MATHEMATICS
CMS COLLEGE KOTTAYAM (AUTONOMOUS)

Computational Science

Value Added Course for the academic year 2019-20

Course Outcome:

- UNDERSTAND THE MATLAB/MATHEMATICA DESKTOP, COMMAND WINDOW AND THE GRAPH WINDOW
- BE ABLE TO DO SIMPLE AND COMPLEX CALCULATION USING MATLAB/MATHEMATICA
- BE ABLE TO CARRY OUT NUMERICAL COMPUTATIONS AND ANALYSES
- UNDERSTAND THE MATHEMATICAL CONCEPTS UPON WHICH NUMERICAL METHODS RELY
- ENSURE YOU ENVIRONMENT CAN COMPETENTLY USE THE MATLAB/MATHEMATICA PROGRAMMING
- UNDERSTAND THE TOOLS THAT ARE ESSENTIAL IN SOLVING MATHEMATICAL PROBLEMS

VALUE ADDED COURSES - ATEENDANCE SHEET

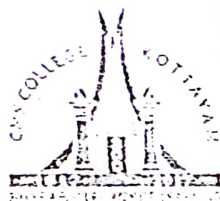
Name of the Department: Mathematics

Name of the Course : Computational Science

Academic Year : 2019-20

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Dr. Ambily P. Mathew



DEPARTMENT OF MATHEMATICS
CMS COLLEGE KOTTAYAM

(AUTONOMOUS)

Affiliated to Mahatma Gandhi University,

HAAC is accredited at A Grade

UGC is recognised as a College with Potential for Excellence

Conferred with Special Heritage Status

Website: www.cmskottayam.ac.in

ADD-ON COURSE ON : **COMPUTATIONAL SCIENCE**

MAIN TOPICS

MATLAB : The MATLAB Environment, Matrices and Operators, Functions, Programmer's Toolbox, Plotting and Image Processing

Online certification : MATLAB and Octave for Beginners by EPFL

Mathematica : Launching Mathematica, Functions and Their Graphs, Algebra, Calculus, Sequences and Series Matrices

Online certification : Mathematica Student Certification Program by Wolfram

R Programming : Introduction to R Programming, installing and running R and it's associated packages, basics of R Programming, Data types in R, syntax, looping and control statements in R, Some packages in R-matlib, ggplot, etc., Sample programs and conclusion.

Online certification: Data Science: R Basics Provided by Harvard University (HarvardX)

Python programming : Introduction to Python, installing and running Python and associated packages, Basics of Python programming, Python data types, syntax, looping and control statements, Some important packages-numpy, matplotlib, math, random, etc., Sample programs and conclusion

Online certification: Python Basics for Data Science Provided by IBM

LAST DATE FOR REGISTRATION :

RESOURCE PERSONS :

T.M JACOB

ASSOCIATE PROFESSOR

NIRMALA COLLEGE

MUVATTUPUZHA

Dr. NIDHI. P .RAMESH

GUEST FACULTY

NIRMALA COLLEGE

MUVATTUPUZHA

ADD ON COURSE:2 FUNCTIONAL MATHEMATICS

OBJECTIVES

By the end of the course, the learner should be able to

- 1. develop a positive attitude towards learning Mathematics and perform mathematical operations and manipulations with confidence, speed and accuracy.*
- 2. think and reason precisely, logically and critically in any given situation and develop investigative skills in Mathematics.*
- 3. acquires the skills to identify, concretise, symbolise and use mathematical relationships in everyday life.*
- 4. comprehend, analyse, synthesise, evaluate, and make generalizations so as to solve mathematical problems.*
- 5. Collect, organize, represent, analyse, interpret data and make conclusions and predictions from its results.*
- 6. apply mathematical knowledge and skills to familiar and unfamiliar situations.*

CONTENT

chapter	COURSE DESCRIPTION	HOURS
1	Logical Reasoning	2
2	Simplification	3
3	Profit & Loss	2
4	Simple Interest	2
5	Compound Interest	3
6	Work & Time	3
7	Time & Distance	2
8	Blood Relations	1
9	Coding Decoding	1
10	Sequences	2
11	Area and perimeter of polygons	2
12	Permutations and combinations	2

Report of the Add on Course on
‘Computational Science’

A course on ‘Computational Mathematics ‘ was conducted by the Department of Mathematics, CMS College Kottayam during the academic Year 2019-2020. The financial assistance for the programme was given under the DBT Star College Scheme. The coordinator of the programme was Dr. Varghese C. Joshua, Head of the Department of Mathematics, CMS College, Kottayam. The course covers the topics in Computational softwares, R, Mathematica, Matlab and Python. The course was conducted by Dr. Jacob T.M, Associate Professor, Department of Mathematics, Nirmala College Muvattupuzha and Dr. Nidhi P. Ramesh, Assistant Professor, Department of Mathematics, Nirmala College, Muvattupuzha. In addition to the direct contact classes, Google classroom and Moodle Platforms were used for the conduct of the programme. 41 Students were enrolled for the course. A total of 18 hours direct contact classes were conducted during the three days, 08-09-2019, 23-11-2019 and 21-02-2020. Google classroom named as ‘Mathematical Softwares for Learning Mathematics’ and a moodle site ‘cms.gnomio.com’ is used for sharing study materials, conducting online tests, Assignments etc. 21 students has successfully completed the course.

30-03-2021

Kottayam



Dr. Ambily P Mathew

HEAD OF THE DEPARTMENT
DEPARTMENT OF MATHEMATICS
C.M.S. COLLEGE, KOTTAYAM

