SIDHO-KANHO-BIRSHA UNIVERSITY, PURULIA
DEPARTMENT OF MATHEMATICS

Syllabus for Post Graduate Course in Mathematics

(Choice Based Credit System)

Effective from the Academic Session 2019-2020

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(Choice Based Credit System)

SYLLABUS OVERVIEW

P.G. course of studies in Mathematics shall be of two years duration divided into four Semesters: Semester I, II, III and IV each of six months duration and the Term End Examinations will be conducted at the end of each semester. Syllabus for P.G. course in Mathematics is hereby framed based on the following schemes and structures.

Using the guidelines of the University, Choice Based Credit System is offered. Core Courses should compulsorily be studied by all the students of the department. The major elective courses will run in Semester III and in Semester IV. For major elective courses a student would choose from a pool of courses (offered by the department divided in groups) from his/her main subject of study. In case of open elective course, a student would choose from a pool of courses from other department(s). The Outreach Programme is one kind of extension activity towards the society which will be helpful for a student in skill development and direct communication to the society. For Add-on Course students have to choose a course from a pool of courses.

Total marks are 1200 of which each semester is of 300 marks. 20% marks are allotted for Internal Assessment for each theoretical paper. There is only one practical paper which is in Semester II. In Semester III, the first two theoretical papers are general and there are also two special papers, the last but one theoretical paper is open elective paper and the last one is "Outreach Programme". In Semester IV, the first two theoretical papers are general and the next two papers are special papers, the fifth paper is the Add on Course. The project work/dissertation paper is last paper in this semester and the marks distribution for this is as follows: 20 Marks for written submission, 20 Marks for Seminar presentation and 10 Marks for Viva-Voce. Faculty members of the department will supervise the students for project work**.** In Semester III the department will offer a cluster of special papers divided into groups and the students will have to choose special papers according to the norms to be decided by the Department. The corresponding papers are to be continued as special papers in Semester IV also.

PROGRAMME OUTCOMES

Mathematics is the mother of all sciences. It is the language of expressing science. The PG course under CBCS is so designed to make the learners to master in the subject. The learners can learn almost all areas of pure and applied mathematics. A number of special papers are offered to cover the recent research areas so that the students have the chance for research. The syllabus is highly oriented to the NET/SET/GATE and other competitive examinations and the learners will be able to crack the National and International level of examinations after completion of the course. We are offering special papers which have huge industrial, business and engineering applications and also research scopes. After completion of the course the students will not only earn the PG degree but they will be able to crack several examinations like, SSC, PSC, UPSC, RAIL, NBHM, etc. A paper on C programming with practical will help the students to be the experts in programming. The Outreach Programme will help the students to understand the outreach peoples to make them understand the usage of mathematics. The Add-on-Course includes the computer applications which will be helpful to develop their skills. In the project paper the students will be given some advanced topics as their dissertation paper and they will be oriented for research activities. They will learn the type settings, presentation skill and interaction methods.

COURSE STRUCTURE

SEMESTER-I				
Code	**Course Title**	**Credit**	**Marks**	**No. of Class Hours /Week**
MMATCCT101	Modern Algebra-I	4	40+10	4
MMATCCT102	Real Analysis	4	40+10	4
MMATCCT103	Complex Analysis	4	40+10	4
MMATCCT104	Ordinary Differential Equations & Special Functions	4	40+10	4
MMATCCT105	Numerical Analysis and Computer Programming in C++	4	(24+16)+(6+4)	4
MMATCCT106	Topology	4	40+10	4

SEMESTER-II				
Code	**Course Title**	**Credit**	**Marks**	**No. of Class Hours/Week**
MMATCCT201	Modern Algebra-II	4	40+10	4
MMATCCT202	Partial Differential Equations & Integral Transforms	4	(24+16)+(6+4)	4
MMATCCT203	Classical Mechanics & Integral Equations	4	(24+16)+(6+4)	4
MMATCCT204	Differential Geometry & Calculus of Variations	4	(24+16)+(6+4)	4
MMATCCT205	Operations Research	4	40+10	4
MMATCCS206	Computer Lab: C & C++ Programming and Computational method using MATLAB	4	50	8

SEMESTER-III				
Code	**Course Title**	**Credit**	**Marks**	**No. of Class Hours /Week**
MMATCCT301	Functional Analysis	4	40+10	4
MMATCCT302	Continuum Mechanics & Elements of Dynamical System	4	(24+16)+(6+4)	4
MMATMET303	Spl. Paper 1	4	40+10	4
MMATMET304	Spl. Paper 2	4	40+10	4
MMATOET305	Statistical Methods	4	50	8
MMATOPP306	Outreach Programme	4	50	8

SEMESTER-IV				
Code	**Course Title**	**Credit**	**Marks**	**No. of Class Hours /Week**
MMATCCT401	Measure Theory	4	40+10	4
MMATCCT402	Fuzzy Mathematics & Soft Computing	4	(24+16)+(6+4)	4
MMATMET403	Spl. Paper 3	4	40+10	4
MMATMET404	Spl. Paper 4	4	40+10	4
MMATACT405	Add-on-Course: Computer Applications and Graph Theory	4	50	4
MMATMEP406	Project/Dissertation	4	50	8