

MATHEMATICS

We went through the proposed syllabus of M.A/M.Sc programme in Mathematics, based on CBCS scheme to be effective from 2018-2019, placed before us. On the pages of scheme of examination typographical error were found and corrected accordingly. In Paper I (MAT CC-01), Unit 2 has been added and the corresponding syllabus is attached at the proper place. In Paper II (MAT CC-02) typographical error ^{has been} ~~is~~ detected and corrected accordingly. In Paper IX (MAT-CC-09), the syllabus is found to be very lengthy and accordingly some portions have been underlined which are to be deleted. These deleted portions have been collected and added to the list of electives under the head Advanced Topology, Banach Algebras, Commutative Algebra and Programming in C have been added to the list of electives alongwith their corresponding syllabus.

Borasad
12.6.18

P. Linka
12.6.18

Srinika
12.6.18

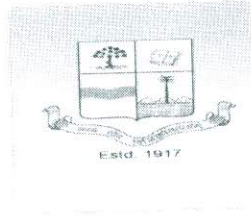
A fresh typed copy alongwith the signatures and the necessary corrections are submitted herewith

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Srinika
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PATNA UNIVERSITY



COURSE OF STUDY
M.A/M.Sc, MATHEMATICS
SEMESTER- I, II, III & IV
CHOICE BASED CREDIT SYSTEM (CBCS)
(To be effective from 2018-2019)

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12/6/18

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Singha
12-6-18

M.A. /M.Sc. Mathematics

SCHEME OF EXAMINATION

Passing of Examination and Promotion Rule

The Post Graduate Course in Mathematics shall be of two academic sessions comprising of FOUR SEMESTERS. Each academic session shall consist of two Semesters – I & III from July to December and Semester - II & IV from January to June.

Each theory paper irrespective of their nature and credits shall be of 100 marks out of which the performance of a student in each paper will be assessed on the basis of Continuous Internal Assessment (CIA) of 30 marks and the End Semester Examination (ESE) consisting of 70 marks.

The components of CIA shall be

(a) Two Mid Semester Written Tests of one hour duration each	15 Marks
(b) Seminar/quiz	5 Marks
(c) Assignment	5 Marks
(d) Punctuality & Conduct	5 Marks

Total	30 Marks
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1. There shall be no supplementary examination in any of the Semester Course (I, II, III & IV).
2. A student who has appeared at the CIA and attended the required minimum percentage (75%) of the attendance in theory shall be permitted to appear in the End Semester Examination (ESE).
3. To be declared passed in ESE in any subject, a students must secure at least 45% marks in each paper separately.

A student has to secure minimum 45% marks in CIA of any paper. In case, a student fails to secure minimum 50% marks in CIA of any paper, he/she will be declared fail in that paper. Students shall have to reappear in that paper and in CIA examination also in the same semester of next academic session.

If students fail to secure minimum 50% marks in CIA of any paper his result will be declared as fail in that paper. Students shall have to reappear in that paper in the same semester of next academic session.

A promoted candidate, if he has passed in CIA but fails in theory paper/papers, he/she shall retain his/her CIA award and will reappear in the theory paper only of the semester whenever available. However, if a candidate is declared fail in any End Semester Examination, shall retain nothing and will have to redo the course work of failed semester again and he has to appear again in CIA as-well-as in theory paper.

4. If a candidate passes in at least two paper in his/her First, Second and third End Semester Examination, he/she shall be promoted to next higher semester. But he/she will have to clear their backlog papers in the next end semester examination of that semester whenever it is

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available. Even if a student is promoted to fourth semester his final result will only be declared when he/she has cleared all their backlog papers.

5. Final result of M.Sc. will be published only after he/she has cleared all the 16 paper securing minimum qualifying marks.
6. Student shall be awarded Grade Point (GP) at the end of each semester examination and Cumulative Grade Point (CGP) at the end of final End Semester Examination in 10 point scoring system.

Declaration of Result

The following grading system shall be used by teacher/ Examination department

Letter Grade	Percentage Range	Number of Letter Grade	Description of Grade
O	90-100	10	Outstanding
A++	80-89	9	Excellent
A+	70-79	8	Very Good
A	60-69	7	Good
B+	50-59	6	Average
B	45-49	5	Pass
F	Less than 45	Less than 5	Fail

A student shall be declared to have passed and promoted to the next semester when he/she earns B or above grade in the semester examination covering continuous evaluation, mid term and end term examination.

Grant
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R. Lanta
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George
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Syllabus of M.A/M.Sc. (Mathematics) Semester I

PAPER I (MAT CC 01)

Abstract Algebra

Abstract Algebra

Prerequisites: Introduction to Group, Elementary Properties of Group, Finite Group,

and subgroup, Cyclic Group, Permutation Group, Properties of Permutations, rings, integral Domains, Characteristic of rings.

Unit 1: Homomorphism; Group actions, Sylow theorems, Normal and subnormal series composition series of a group, Jordan- Holder Theorem, Solvable groups, commutator subgroup of a group, Nilpotent groups

Unit 2: Ring homomorphism, isomorphism, quotient rings, ideals, Kernel of ring homomorphism, principal ideal ring and domain, prime and maximal ideal, Euclidean domain.

Unit 3 : Extension fields , algebraic and transcendental extension, splitting field of Polynomial, separable and inseparable extension, normal extension, constructible real numbers.

Unit 4 : Cyclic Modules, simple Modules, semi-simple Modules, Schur's Lemma, Free Modules.

Unit 5: Solution of equations by radicals, insolvability of equations of degree 5 by radicals.

References :

1. I. N. Herstein :- Topics in Algebra.
2. M. Artin :- Algebra
3. L. S. Luthar & I. B. S. Passi :- Algebra Vols I & II Narosa Publication House
4. D. S. Dummit and R. M. Foote :- Abstract Algebra
5. N. S. Gopalakrishnan :- University Algebra

Handwritten signatures and dates:
12/6/18 12.6.18 12.6.18

