

SEMESTER - II

CPS 2b – Part II - PEDAGOGY OF MATHEMATICS

Credits: 4

Internal: 40 marks

Hours/Week: Theory-4hrs Practical- 4hrs

External: 60 marks

Total: 100 marks

Objectives

At the end of the course the student teachers will be able to:

- explain the importance of non- scholastic activities in Mathematics;
- implement the process of evaluation;
- acquire competence in teaching mathematics and structuring lesson plan;
- excel the professional growth and commitment of mathematics teacher;
- recognize the importance of classroom climate and acquire the skill of managing classroom effectively;
- explore the skill and competencies to maintain records.

Unit I: Co - Scholastic Activities

Activities in Mathematics: Mathematics Quiz, Mathematics Club activities, Mathematics Exhibition, Planning and Organizing Mathematics laboratory activities, Mathematics outside the classroom organization of field trips and its importance. Organization of Mathematics Olympiad- Appreciation of Aesthetic Structure of Mathematics -Order , Pattern and Sequence.

Unit II: Evaluation of Mathematics Learning

Assessment of Mathematics Learning – Developing blue-print for designing question paper, item construction, marking schemes, question - wise analysis, framing of questions based on concepts and sub-concepts so as to encourage critical thinking, promote logical reasoning and to discourage mechanical manipulation of rote learning, framing of open ended questions providing the scope to learning to give responses in their own words, framing of conceptual questions from simple questions.

Unit III: Planning for Teaching-Learning Mathematics

Macro teaching - Lesson Plan, Unit Plan, Year plan - Herbartian steps - Format of a typical lesson plan – G.I.O's & S.I.O's - Teaching aids - Motivation, Presentation, Application, Recapitulation and Assignment

Unit IV: Teacher Professionalization and Teacher Commitment

Committed teachers, passionate teachers: Dimension of passion associated with teacher commitment and engagement: Teacher commitment as a passion teacher – teacher commitment as a unit of time outside the contact hours with students- teacher commitment as a focus on the individual needs of students. Teacher commitment as a responsibility to impart knowledge, attitudes, values and beliefs- teacher commitment as maintaining ‘ Professional knowledge’- teacher commitment as engagement with school and community- importance of teacher commitment for quality enhancement – Ways and means of enhancing teacher commitment for teaching professionalization. Qualities and skills of Mathematics teachers – General qualities, Personal qualities and Specific qualities.

Unit V: Classroom Climate and Classroom Management

Significance of classroom climate – Teacher dominated, laissez-faire and democratic pattern - Effective classroom management for quality learning: Teacher as facilitators / managers of classroom learning - Components of Classroom Environment: Learning situation, Space and Time, Motivation and Discipline Management of learning situations : Management of group and Individualized learning- Management of space and time : Seating arrangement and Time allocation- Management of Motivation and Discipline.

Unit VI: School Plant

School building and design of the school – Maintenance of the school plant : Playground, Library, Records and Registers.

Suggested references:

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- ❖ Sharma, R.A. (2008). *Technological Foundations of Education*. Meerut: R.Lall Books Depot.
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