

**SEMESTER - II****CPS 2b – Part II - PEDAGOGY OF MATHEMETICS****Credits: 4****Internal: 40 marks****Hours/Week: Theory-4hrs & Practical- 4hrs****External: 60 marks****Total: 100 marks****Course Learning Outcomes:****At the end of the course, the student-teachers will be able to**

- outline the importance of co- scholastic activities in Mathematics;
- implement the process of evaluation in the classroom;
- design year plans, unit plans and lesson plans in Mathematics;
- predict the professional growth and commitment of the Mathematics teacher;
- specify the importance of classroom climate and classroom management;
- review the organization of a school plant;
- prepare and maintain records effectively;
- identify and analyze the diverse needs of learners in Mathematics;
- prepare teaching and learning materials in Mathematics;
- score the students through Continuous and Comprehensive Evaluation to analyze the results; and
- compile question bank in Mathematics to aid student performance.

**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 Trip 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 Home Assignment.

### **Unit IV: Teacher Professionalism 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 professionalism. Qualities and Skills of Mathematics teacher – 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.

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