SEMESTER - IV

CPS 2d – Part IV - PEDAGOGY OF MATHEMATICS

Credits: 2 **Internal: 20 marks**

Hours/Week: Theory-2hrs & Practical-3hrs **External: 30 marks**

Total: 50 marks

Course Learning Outcomes:

At the end of the course, the student-teachers will be able to

- discriminate learner-controlled instruction, collaborative and co- operative learning ;
- design the Mathematics Curriculum at the school level;
- associate the relationship of Mathematics with other subjects and the community;
- prepare a report on the organization of co-scholastic activities;
- construct modules in Mathematics;
- analyse and draw inference on various websites related to Mathematics;
- prepare a report on the maintenance of records and registers in schools;
- write a report on the environment context of their co-operative schools; and
- include field trips for enrichment of the teaching-learning process.

Unit I: Teacher Controlled Instruction, Learner Controlled Instruction, Group Controlled Instruction

Teacher Controlled Instruction (TCI): Meaning and Nature, various methods (lecture, team-teaching, demonstration, teacher based activities), strengths and weaknesses of each method, process / procedure for organizing effective lecture and demonstration, assessment of lecture and demonstration, role of teacher's in TCI. Learner Controlled Instruction (LCI): Meaning and Nature, self-learning, methods of self-learning (self-instructional print material, Keller's Plan, Programmed Instruction and Computer Assisted Instruction), organization and assessment of LCI, teacher's role in LCI. Group Controlled Instruction (GCI): Meaning and Nature, various methods (small group interaction, co-operative learning approach, role play, field trips, tutorial, project work), organization of GCI, problems in organizing GCI.

Unit II: School Mathematics Curriculum

Meaning of Curriculum - Principles of Curriculum construction in Mathematics - Development of a curriculum in Mathematics - Formulation of Objectives, Selection and Organization of Contents or Topics, Suggesting Appropriate Learning Experiences, Suggesting Suitable Methods and Techniques for Evaluation - Recommendations of Kothari Commission and National Curriculum Framework for bringing improvement in Mathematics.

Unit III: Linkage of Mathematics with community life

Rethinking Mathematics - Link with everyday life, Nature, Mathematics and other subjects and its own branches; Mathematics and Astronomy, Astrology - Mathematics and Art - Mathematics and Music, Vedic Mathematics - Basic Operations.

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