B.Ed OPTIONAL COURSE
COMPUTER SCIENCE - I

OBJECTIVES

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

- acquire knowledge on historical evolution of computer and its hardware, software components.
- acquaint with the aims and objectives of teaching computer science in secondary and higher secondary schools and help them to plan learning activities according to those objectives.
- acquire skills relating to planning lessons and presenting them effectively.
- familiarize with the various methods that can be employed for the teaching of computer science.
- understand the principles of curriculum construction.
- develop skill in constructing tests.

UNIT I  Hardware and Software of Computers


UNIT II Objectives of Teaching Computer Science

Aims and objectives of teaching Computer Science – Blooms taxonomy of Educational objectives – computer science teaching at different levels : primary, secondary, and higher secondary levels.

UNIT III Micro Teaching

Micro teaching – origin, need, procedure, cycle of operation and uses - Communication skills with reference to Micro teaching: Verbal and non-verbal communication- principles and steps in micro teaching - teaching of relevant skills; Skill of Introduction, explaining, demonstration, stimulus variation, reinforcement, questioning, blackboard writing, - need for link lesson in micro teaching programme.
UNIT IV Lesson and Unit Planning

Lesson Planning: Importance of lesson plans, writing instructional objectives and planning for specific behavioural changes.

Unit planning: Preparation and use of unit plan

UNIT V Instructional Methods

Individualized instruction — programmed instruction — Computer Assisted Instruction (CAI), steps for developing CAI, modes of CAI, benefits of CAI, limitations of CAI, role of teacher in CAI — Computer Managed Instruction.


UNIT VI Instructional Aids

Importance of teaching aids — classification — projected and non-projected aids — criteria for selection of appropriate teaching aids — mass media and its advantages.

UNIT VII Curriculum in Computer Science

Principles of curriculum development — criteria of selection of content — principles of organizing the selected content — critical evaluation of Tamilnadu higher secondary computer science curriculum.

UNIT VIII Evaluation in Computer Science

The concept of evaluation — objective based evaluation — tools and techniques in evaluation — evaluation for achievement, diagnosis and prediction — Criterion and Norm referenced tests — construction of different types of test — Principles of test construction and administration of an achievement test — Blue print — Characteristic of a good test — Item analysis — Computer Aided Evaluation — On line examination.

Statistical measures: Measures of central tendency: mean, median, mode — measures of variability: range, standard deviation, average deviation, quartile deviation — rank correlation.
UNIT IX Text Books


UNIT X Assignment and Review


PRACTICALS:

- Practice of a minimum of three skills on micro teaching
- Preparation of Lesson plan and Unit plan
- Preparation of teaching aids
- Preparation of Programmed Instruction
- Linear Programming (Minimum of 20 frames)
- Multimedia Presentation (Minimum of 20 slides)
- Preparation of transparencies
- Construction of an achievement test
- Critical analysis of content course of standard IX to XII syllabus.
- Identification and cataloguing of three websites relating to the prescribed school curriculum
- Comparative evaluation of any two web pages bearing on the same unit in the school curriculum

SUGGESTED REFERENCE BOOKS:


