

B.Ed. Two Year Programme

P.2.7: Chemistry

Maximum Marks: 100

Course Objective

This course is aimed at developing the insights, competencies and skills among the pupil-teachers to effectively transact the Chemistry curriculum and evolve as a reflective practitioner, capable of translating theoretical perspectives into pedagogical practices.

Unit I Pedagogical Underpinning

- Place of Chemistry in school curriculum
- The concept of Pedagogical Content Knowledge (PCK) and its implications for Chemistry teaching.
- Aims of teaching Chemistry at the senior secondary level with linkages to upper-primary and secondary level.
- Objectives of teaching Chemistry with special reference to the development of thinking and process skills

Unit II Classroom processes

- Pedagogical planning: considerations in relation to content (curriculum and concepts) and learners (with specific reference to socio-cultural and developmental context of the learner including special needs).
- A repertoire of teaching-learning processes: Inquiry based approach, inductive and deductive approach, experimentation, demonstration, discussion, investigatory projects, individually paced programmes, group work, peer learning, observation-based survey, problem solving, guided independent study, seminar presentation, action research
- Developing unit plans, lesson plans and Remedial/Enrichment plans using combinations of various processes.
- Planning for conduct of activities, experiments and laboratory work in Chemistry with a critique of the current practices

Practicum:

1. *Planning and discussion of lessons for the school experience programme.*
2. *Developing remedial or enrichment programmes.*
3. *Conduct of activities/Experiments.*

Unit III Teaching- Learning Resources

- Criteria for selecting/designing Teaching-Learning Resources : content based, learner based and context based.
- Textbook, reference books, encyclopaedia, newspaper and alike
- Improvisations and Science Kits
- Instructional aides, computer aided instruction, multi-media packages, interactive software, websites, Open Education Resources (OER) etc.
- Planning of extended experiences, science quiz, science fair, science corner/resource room, science club, excursion and related SUPW activities.

Practicum: Developing Teaching-Learning resources

Unit IV Organization of the Chemistry Laboratory

- Layout and design of the Chemistry laboratory.
- Storage of apparatus, consumable and non-consumable items/materials
- Maintenance of laboratory records.
- Making arrangements for the conduct of experiments.

Practicum: Laboratory work- management of laboratory, activities and project work.

Unit V Assessment

- Nature of learning and assessment, analysis and critique of the present pattern of examinations.
- Design and analysis of
 - Formative assessment tasks
 - Summative Assessment
- Assessment of laboratory work and project work
- Assessment through creative expression-drawing, posters, drama, poetry, etc as part of formative assessment for continuous assessment of thinking and process skills
- Developing learner profiles and portfolios; participatory and peer assessment.

Practicum: Preparation of a detailed Assessment Report of learners' continuous and comprehensive assessment.