

# BACHELOR OF EDUCATION ( B.Ed)

Semester –II

(For the examination to held in the year 2016, 2017 & 2018)

Course no. 203 (Theory)	Total Marks : 100	Maximum Marks External : 60
Title: Educational Technology and ICT	Duration of Exam : 3hrs	Maximum Marks Internal : 40 Credits 4

Objectives:

To enable the pupil teacher to:

- 1. understand the nature and scope of educational technology and also about the various forms of technology*
- 2. know the systems approach in Education and its components*
- 3. familiar with the steps involved in the construction of programmed learning*
- 4. describe the concept of ICT in education and appreciate the scope of ICT for improving the personal productivity and professional competencies*
- 5. acquaint with different approaches of ICT integration in education*

Course contents

## Unit I

### Introduction to Educational Technology

Educational Technology: concept, Need, scope and Forms of educational technology (Teaching technology, Instructional technology and behaviour technology) 2) Approaches of educational technology: Hardware and software, Multimedia and Mass media approach 3) Relationship of the term teaching with other similar concepts such as conditioning, instruction, training and indoctrination

Unit II

### Systems Approach in Education

1) Systems Approach to Education and its Components: Task Analysis, Content Analysis, Context Analysis and Evaluation Strategies 2) Programmed Learning – Concept, origin, basic structure of Linear (Extrinsic) and Branching (Intrinsic) styles of programming, Various steps involved in construction of programmes 3) Bloom's Taxonomy approach in Educational Technology to integrate teaching – learning process

## **Unit III**

### **ICT in Education**

- 1) Information & Communication Technology: Concept, Need and Scope
- 2) Paradigm shift in Education due to ICT content, with special reference to Curriculum, Role of Teacher, Methods of Teaching, Classroom Environment, Evaluation procedure, Educational management
- 3) Challenges in Integrating ICT in School Education

## **Unit-IV**

ICT supported teaching- learning strategies

- 1) Project Based Learning (PBL)
- 2) Co-operative & Collaborative Learning
- 3) Computer assisted learning (CAL)& Computer Managed Learning( CML)

### **Sessional work:**

□ Developing Programme Learning Material □ Organise seminar/ debates on ICT supported teaching learning strategies □ Presentation on Systems approach to education □ Prepare a chart on different approaches of educational technology ( Multi media and mass media)

### **Note for Paper Setters**

The Question paper consists of 9 questions having Q no 1 as Compulsory having four parts spread over the entire Syllabus, with a weightage of 12 marks .The rest of Question paper is divided into four Units and the students are to attend four Questions from these units with the internal choice. The essay type Question carries 12 marks each. Unit IV having the sessional work/field work( section) could also be a part of the theory paper.

Internship/field work Unit IV having the components/activities of the internship are to be developed in the form of the Reflective Journal. All the activities under the internship are to be evaluated for credits and hence all the activities are to be showcased by the trainee and are to be fully recorded with the complete certification of its genuineness .

The Theory paper is to have 60 marks ( external ) . 40 Marks are for the In House activities

### **Books recommended & web resources**

1. Agarwal, J.P. (2013). Modern Educational Technology. Delhi: Black Prints. □ Chauhan, S.S. (1978).A Text-Book of Programmed Instruction. □ Mangal, S.K. & Uma Mangal (2009).
2. Mukhopadhyay, M. (2003). Educational Technology-Knowledge assessment( IInd edition). Shipra publications, New Delhi-110092 □ Sharma, R.A. (1997).

Semester –II  
(For the examination to held in the year 2016, 2017 & 2018)

**Methodology of teaching subject-I**

Course no. 205	Total Marks : 100	Maximum Marks External : 60
Title: Teaching of Physical Science	Duration of Exam : 3hrs	Maximum Marks Internal : 40 Credits 4

**Objectives:**

To enable the pupil teachers to :

- 1) Acquaint themselves with the concept of physical science.
- 2) Familiarize themselves with the concept of curriculum, text books and co- curricular activities in physical science.
- 3) Prepare a lesson plan.
- 4) Understand some important areas of physical science.

**Unit -I**

Origin and development of physical science. History of physical science. Aims and values of teaching physical science in secondary school Behavioural objectives .Meaning and importance of behavioural objectives, steps for preparing behavioural objectives for teaching of physical science.

**Unit- II**

Curriculum: Meaning, importance and principles of designing a good curriculum for physical science. Concentric, topical and integrated approaches in organising curriculum for physical science. Textbooks: Meaning importance and role of textbooks in teaching of physical science. Qualities of a good textbook of physical science. Co-curricular Activities: Meaning and importance of co-curricular activities . Steps of organising co- curricular activities.

**Unit -III**

Lesson planning: Meaning, importance and principles of writing lesson plans in teaching of physical science. Steps for preparing a lesson planning through Herbartian and RCEM approach. Preparing a lesson plan on a topic of physical science.

## **Unit IV**

Electric current –potential difference, effects of electric current ; flow of heat- conduction, convection and radiation. Force-concept, constant and non-constant forces .Friction- concept, types, advantages and disadvantages, methods of increasing and decreasing friction. Acid, bases and salts – types, properties and applications in day-to- day life; structure of matter-elements, compounds and their properties, mixtures, atomicity.

### **Sessional work:**

Analysis of a unit / chapter in a physical science text book- to identify the concepts, principles and underlying scientific theories.

### **Note for Paper Setters**

The Question paper consists of 9 questions having Q no 1 as Compulsory having four parts spread over the entire Syllabus, with a weightage of 12 marks .The rest of Question paper is divided into four Units and the students are to attend four Questions from these units with the internal choice. The essay type Question carries 12 marks each. Unit IV having the sessional work/field work( section) could also be a part of the theory paper.

Internship/field work Unit IV having the components/activities of the internship are to be developed in the form of the Reflective Journal. All the activities under the internship are to be evaluated for credits and hence all the activities are to be showcased by the trainee and are to be fully recorded with the complete certification of its genuineness .

The Theory paper is to have 60 marks ( external ) . 40 Marks are for the In House activities

### **Books recommended**

1. Gupta ,S.D. & Sharma, D.R.(2002). Teaching of science.Malhotra brothers, Jammu.
2. Kohli, V.K. (2001). How to teach science.Vivek Publishers,Ambala city.
3. NCERT. (2013) .Science. Publication Division.NCERT Campus,New Delhi
4. Sharma, R.C. (1981). Modern Science Teaching.Dhanpat Rai Publishing

Semester –III  
(For the examination to held in the year 2016, 2017 & 2018)

**Methodology of teaching subject-II**

Course no. 302	Total Marks : 100	Maximum Marks External : 60
Title: Teaching of Computer Education	Duration of Exam : 3hrs	Maximum Marks Internal : 40 Credits 4

**Objectives :**

To enable the pupil teachers to:

- 1) study and understand the resources for teaching Computer Science
- 2) study and understand the skills in teaching of the computer skills to the students teachers for programming and Networking.
- 3) study and understand the skill in organizing extended curricular activities in Computer Science
- 4) study and understand the skill in preparing special programs for gifted and slow learners develop the skill in critical analysis of the text books and question papers of secondary school Computer Science

**UNIT I**

**Elements of Computer Working /Programming**

Algorithm, flowchart, elements of ‘C’ programming with simple illustrations.;Elements of database and its applications, Introduction to cloud computing,Network of Computers: Network, Types of network, Categories of network. Working Principle – Types – LAN – Wi-Fi – Uses; E-mail – Meaning & its working. The Project Method and the Demonstration method- the elements, the merits and the demerits. Use of the methods for teaching the Elements of the Computer working .

**Unit II**

**Resources for teaching Computer Science:**

Text Books – Qualities of good computer science text book Use of text book role of text book in teaching computer science Criteria for evaluation of computer science text book. Computer Science Library – Meaning, organization and importance. Computer Science Lab – Need for planning the computer laboratory special features of computer laboratory . Essential infrastructure – laboratory management & maintenance of records. .

### **Unit III**

#### **Use of Different Activities in & Out of Lab:**

Computer Science Club-Meaning, Objectives, Organization, activities & importance; Computer Science Quiz, Computer Science Exhibition, Science Fair, Computer Visit- Meaning, Objectives-Organization & Importance; Quality Improvement: Programs for Quality improvement in teaching Computer Science; Role of Seminars, Workshops and Projects in Quality Improvement; Professional Competencies of Computer Science Teacher. Netiquettes

### **Unit IV**

#### **Evaluation Techniques in Computer Science**

Concept of unit test, construction of unit test, weight ages to the components of unit test, designing three- dimensional chart/blue print, construction of items, format of unit test Question paper, IOTAQB – meaning, development and importance; E-evaluation – meaning and procedure.

#### **Sessional work**

Preparation of branched program material consisting of twenty frames in Computer Science; Preparation of mathematics program material consisting of twenty frames in Computer Science; Multimedia presentation (Minimum of 20 slides); Preparation of a Lesson using computer Assisted Instruction (CAI).

#### **Note for Paper Setters**

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Internship/field work Unit IV having the components/activities of the internship are to be developed in the form of the Reflective Journal. All the activities under the internship are to be evaluated for credits and hence all the activities are to be showcased by the trainee and are to be fully recorded with the complete certification of its genuineness .

The Theory paper is to have 60 marks ( external ) . 40 Marks are for the In House activities

#### **Books recommended**

□ Bharioke, Deepak(2005) Fundamentals of Information Technology. □ Kochhar, S.K. (1992). Methods and techniques of teaching. New Delhi: Sterling Publishers Pvt. Ltd □ Goel H.K.

## Semester –IV

(For the examination to held in the year 2017, 2018 & 2019)

Course no. 402 (Theory)	Total Marks : 100	Maximum Marks External : 60
Optional Paper (F- Computer Education)	Duration of Exam : 3hrs	Maximum Marks Internal : 40 Credits 4

### Objectives:

To enable the pupil- teachers to:

1. study and Understand the nature and scope And the history of Computer Education develop an understanding of aims and objectives of teaching Computer Education by the use of Content
2. develop an understanding of the various methods, approaches and techniques of teaching Computer Education.
3. develop the skill to critically analyze the syllabus of secondary school Computer education curriculum

### UNIT I

#### Computer: Concept and its working

Computer Concept & History and development -Types & Parts (Hardware, Software, Memory)Procedural aspects : Start - Shut down Method of Computer, Basic Concepts of GUI and CUI ;User of Computer and Explorer - File , Folder, File-folder Handling commandsWindow Help System and uses of Help system- window Help system and uses of Help system. Importance and Uses of Computer- For teachers &For StudentsApplication of Computer- In Education - In other fields

### UNIT II

#### Different Applications in Computers

Devices of Computer- Input devices & Output devices. Operating System –function .Accessories: Notepad, Word pad , Paint, Media Player and Removable Devices – applications Concept of Icons, desktop, Task bar Uses and applications of the same on the system.

## **UNIT-III**

### **Utility of Computers for Students and Teachers**

Windows Operating System \_ characteristics. Microsoft office use and Utility of Microsoft Word & excel - Basic Concepts- Applications and use( basic features) Microsoft PowerPoint- Basic concepts –use

## **UNIT IV**

### **Use of Internet in Education**

Search Engines & Websites, Laboratory experience of browsing , Opening e Mail account, Uploading and downloading files, photos, etc. WEB 2.0 -concept

### **Note for Paper Setters**

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The Theory paper is to have 60 marks ( external ) . 40 Marks are for the In House activities

### **Books recommended**

1. Bharioke, Deepak : Fundamentals of Information Technology Comdex DOS for Dummies
2. Pustak Mahal, New Delhi (1997)
3. Nelson, Stephen, L : The Complete Reference Office, Tata McGraw Hill, New Delhi .Rajaraman, V.: Fundamentals of Computers
4. Saxena, Sanjay : A first course in computers – Vikas Books.