TEZPUR UNIVERSITY

(A Central University Established by An Act of Parliament)

Napaam, Tezpur- 784028

DEPARTMENT OF EDUCATION

Four Year Integrated B.Sc.B.Ed. Programme

COURSE STRUCTURE AND SYLLABUS

Syllabi of the Education courses prepared on the basis of the NCFTE-2009, NCTE (Recognition Norms and Procedure) Regulation 2014

UGC Draft for Learning Outcomes-Based Curriculum Framework (LOCF), 2019
for Integrated B.Sc.B.Ed. Programme

Learning Outcomes based Curriculum

Department of Education
Tezpur University
4-Years Integrated B.Sc.B.Ed Programme

Preamble

Department of Education, Tezpur University strive to implement LOCF (Learning Outcomes based Curriculum Framework) as suggested by University Grants Commission (UGC) and proposed to be implemented by Tezpur University. The basic structure of the *4-Years Integrated B.Sc. B.Ed. Programme in Education* is designed keeping in mind the following facts:

1. The learning outcomes of each paper are designed in such a manner that these may help student teachers to clearly understand the main objectives of studying the course and to motivate them to enter teaching profession with full confidence and competencies required.

2. The Courses from Education comprising important areas like foundations of education; *pedagogy of school subject (s) mathematics, physical science, biological science; and engagement with the filed/practicums and school based experiences through school internship* are well organised among eight (8) semesters keeping in view the credit load in each semester as well as some psychological principles.

3. The main objective is to prepare the quality teachers in *science, and mathematics* for *secondary stage of education* by imbibing appropriate professional values.

1. Introduction

The 4-Years Integrated B.Sc. B.Ed. Programme in Education consists of 8 semesters comprising 66 credits out of 180 for whole programme. *The course(s) of education part has been designed to equip the student teachers with knowledge, competencies, and sound background in perspectives of education, pedagogical knowledge, how to incorporate this knowledge in to specific content areas.* On the successful completion of the programme they may enter teaching profession or opt for higher education in their respective areas of interest. The programme aims at producing such graduates who while studying for an undergraduate degree in science or mathematics with Major in a subject of their choice would continue to study from the very beginning the courses for a *B.Ed. degree so as to integrate the learning of these two components to emerge as confident and competent teachers at the secondary level*. The provision for Major is considered important in view of the fact that many universities consider major in a subject as a criterion for eligibility for admission into a master's programme. This provision will help those students who, after completing B.Sc.B.Ed, may like to obtain a postgraduate degree.

The curriculum is designed to achieve the following objectives:

1. The student-teacher acquires the basic concepts and the thorough knowledge of the content of the subjects studied for a degree with Major in a subject of his/her choice.

2. The student-teacher makes smooth transition from the acquisition of the knowledge of the foundational courses in Education to more intensive and focused study of the courses of teacher education.

3. The student-teacher while developing the knowledge and understanding of the content of the undergraduate courses also gains an understanding of different aspects of teacher education including organization of learning and teaching and development of suitable strategies and procedures for ensuring intellectual, physical and social development of the learners he/she is going to teach.

Pedagogy Courses

For the Integrated B.Sc.B.Ed. Program initially three Major subjects will be taught-Mathematics, Chemistry and Physics. The Pedagogy courses introduced initially will be the following:

1. Teaching of Physical Science
2. Teaching of Mathematics/ or
   Teaching of Biological Science

Details of the Program

Integrated B.Sc. B.Ed. Program

1. Name of the Programme	Integrated B.Sc. B.Ed. Programme
2. Name of the degree	B.Sc.B.Ed. with Major in Mathematics/Chemistry/Physics (at the initial stage
3. Eligibility for admission	First division in the Higher Secondary (10 Plus Two) School Final examinations (Science).
4. Intake	50 Seats Approved by NCTE
5. Nature of the Programme	Integrated
6. Duration of the Programme	Minimum: 8 Semesters. Maximum:12 Semesters
7. Admission procedure	Admission on the basis of the Performance in the all India Entrance Examination held by the Tezpur University Entrance Examination Board in Different Parts of the Country. However, Initially, Preference may be given to the Applicants from Assam in View of the Need for More Trained Teachers in the State.
8.Mode of Transaction of the Curriculum	For Transacting the Curriculum and for providing Adequate Learning experiences, the Modes usually adopted by the University for Academic Programs are as follows: 1. Lecture-cum-discussion class of one hour duration. 2. Tutorial classes 3. Group activity 4. Guided reading in the Library to be followed by oral/written

	presentation. 5. Written assignments, writing of term papers 6. Seminars 7. Case study 8. School Internship -**20 weeks** **A. Initial School Experience/ Internship I: 4 Weeks** Visit to schools chosen for Internship to get Acquainted with the functioning of the School, learn from Observing an Experienced Practitioner. Other activities will include Visit to Community and Reporting on Survey Conducted on Adult Education, Right to Education Act, Health and Hygiene, Girl Child' Education, Social Welfare Schemes etc. **B. School Internship II:** The Period of Internship will be **16 Weeks:** During this prolonged Period Learners will Prepare Teaching Plans, Produce Teaching Aids and Teaching Materials and Teach in the Selected School. They will maintain Records And Diaries, Reflecting on their Own Teaching etc. **9**. **Peer Teaching Practices**: Students will plan the teaching of one or two teaching points pertaining to a subject (one pedagogy course) and Practice Teaching Skills for a very short duration, to be observed by Fellow Students.
9. Mode of Assessment and Evaluation	The University has a uniform system of Continuous Assessment and follows the Relative Grading System. These will be applicable to the B.Sc.B.Ed. Programme too. The tools for Continuous Assessment and Evaluation are: Class tests (with objective type, short-answer type and essay type questions), Written assignments/ writing of term papers, guided Library work followed by oral/written presentation, practical/performance tests and Seminars. Mid Term and End-Term Examinations are there. The same mode will be adopted for the Integrated B.Sc. B.Ed. program with modifications if and when necessary with the approval of the concerned School Board and the Academic Council. The details are available in the Academic Regulations (Copy attached).

2. Qualification Descriptors for the Graduates

Knowledge & Understanding

i) The student teachers validate their understanding by analysing the premise, context that are unique to education, examine concerns related to education system.

ii) The student teachers understand the systemic reforms in achieving quality education and analyse the important role of education in ensuring sustainable development.

Skills & Techniques

- **i)** Able to integrate theoretical and practical knowledge of their respective subject in classroom practice and demonstrate practical skills in school as a site for practical learning and enhance their professional role.
- **ii)** Ability to think, acquire knowledge and skills through logical reasoning and to inculcate the habit of self- learning and transform the knowledge to students through appropriate teaching- learning pedagogy.
- **iii)** Ability to integrate and apply ICT as a teaching learning tool/ digital competency to facilitate teaching-learning process, research, and innovation.

Competence

- **i)** Exhibit acquired competencies and skills for effective classroom teaching, planning, management and evaluation of students learning process as a professional.
- **ii)** Critical awareness of professional ethics, code of conduct, social cultural values, human dignity and humanness and ability to critically engage in reflective practices.

3. Graduates Attributes

- **i)** Ability to reflect critically on perspectives of education and integrate holistically the theory and practices to facilitate active engagement of learners for knowledge creation.
- **ii)** Develop capacities for self-directed learning, ability to work in group and ability to think critically, analytically, abstract reasoning, creativity and problem solving skills.
- **iii)** Capability to understand the context of education in contemporary Indian Society, appreciating the role of context and socio-political realities about learners in facilitating learning in inclusive settings.
- **iv)** Aware about the roles and responsibilities as a competent professional teacher, critical awareness of professional ethics and an ability to critically engage in reflective practices.
- **v)** Ability to use knowledge, understanding and skills for critical assessment of a wide range of ideas and complex problems and issues relating to the chosen field of study.
- **vi)** Ability to apply disciplinary knowledge and transferable skills to new and unfamiliar contexts in order to identify and analyze the problems and to seek solutions to apply in solving real-life problems.

4. Program Outcomes

4-Years Integrated B.Sc. B.Ed.

After the completion of this programme student teachers will:

PO1: equipped with sound background in perspectives of education along with hands on experience based on field exposure and develop a rational conceptualization of pedagogical knowledge and will incorporate it into the specific content areas.

PO2: able to understand the role of school & education in ensuring sustainable development; critically analyses different theoretical perspectives on learning, learner, teaching, assessment and integrate this knowledge in to practice.

PO3: demonstrate their commitment for continuous self-improvement by engaging in professional development activities, reflective practices to improve teaching and learning that contribute to the revitalization of the teaching profession; able to integrate theoretical and practical knowledge of their respective subject(s) in classroom practice, as well as pursue to keep themselves abreast with advancements in their areas of specialization.

PO4: Acquire ICT Skills and competencies to undertake professional job as per demands and requirements of educational institutions/research centres etc. and recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of knowledge explosion and technological change.

5. Programme structure

Programme Name: Integrated B.Sc. B.Ed.
Total Credits: 180
Structure of the Curriculum

Course category		No of courses	Credits per Course	Total Credits
I.	Core courses	38	2 to 8	141
II.	Elective courses			
	Department Specific Elective (DSE)/GE	12	2 to 4	36
	Open Elective	01	03	03
	Total Credits	**51**	**2 to 8**	**180**

Course Structure for Four Year Integrated B.Sc.B.Ed. Programme
(Education Courses)

Semester	Course Code	Course Name	L-T-P	CH	CR	Remark
Semester-I	ED 105	Basics in Computer Applications	2-0-1	4	3	CORE
	ED 106	Education: An Evolutionary Perspective	2-0-1	4	3	CORE
	ED 104	Communicative English	3-0-0	3	3	AEC
	Total Credits				**9**	
Semester-II	ED 107	Education and Development	2-0-1	3	3	CORE
	NS 106 or NC001	National Service Scheme Or NCC for Youth Empowerment	0-0-2 1-0-1	4 3	2 2	SEC
	Total Credits				**5**	
Semester-III	ED 205	Environmental Education	2-0-1	4	3	CORE
	ED 202	Learner and Learning	2-0-1	4	3	CORE
	Total Credits				**6**	
Semester-IV	ED 203	Contemporary Issues in Education	2-0-1	4	3	CORE
	ED 204	Assessment and Evaluation	2-0-1	4	3	CORE
	Total Credits				**6**	
Semester-V	ED 301	Teaching Approaches and Strategies	2-0-1	4	3	CORE
	ED 302	Classroom Organization and Management	2-0-1	4	3	CORE
	Total Credits				**6**	
Semester-VI	ED 308	Pedagogy A: Physical Science-I	2-0-1	4	3	CORE
	ED 307 or ED 309	Pedagogy B: Mathematics I or Pedagogy B: Biological Science-I	2-0-1	4	3	CORE
	ED 303	School Education in North East India	2-0-0	2	2	CORE
	Total Credits				**8**	
Semester-VII	ED 408	Pedagogy A: Physical Science-II	2-0-1	4	3	CORE
	ED 407 or ED 409	Pedagogy B: Mathematics II or Pedagogy B: Biological Science-II	2-0-1	4	3	CORE
	ED 404	Initial School Experience/ School Internship-I	0-0-4	8	4	CORE
	Total Credits				**10**	
Semester-VIII	ED 405	School Internship-II	0-0-16	32	16	CORE
	Total Credits				**16**	
Total Credits for Four Years Integrated B.Sc.B.Ed.					**66**	

L: Lectures T: Tutorials P: Practicum/Practical CH: Contact Hours (all per week) CR: Credit

6. Mapping of Course with Program Outcomes (POs)

Course Code	Course Title	PO1	PO2	PO3	PO4
ED 105	Basics in Computer Applications			√	√
ED 106	Education: An Evolutionary Perspective	√	√		
ED 104	Communicative English			√	√
ED 107	Education and Development	√	√		
NS 106 Or NC001	National Service Scheme Or NCC for Youth Empowerment	√	√	√	
ED 205	Environmental Education	√	√		√
ED 202	Learner and Learning		√	√	√
ED 203	Contemporary Issues in Education	√		√	
ED 204	Assessment and Evaluation		√	√	√
ED 301	Teaching Approaches and Strategies		√		√
ED 302	Classroom Organization and Management		√		√
ED 308	Pedagogy A: Physical Science-I		√	√	√
ED307 or ED 309	Pedagogy B: Mathematics I Or Pedagogy B: Biological Science-I		√	√	
ED 303	School Education in North East India	√	√		
ED 408	Pedagogy A: Physical Science-II		√	√	√
ED 407 or ED 409	Pedagogy B: Mathematics II or Pedagogy B: Biological Science II		√	√	√
ED 404	Initial School Experience/ School Internship-I		√	√	√
ED 405	School Internship-II		√	√	√

7. Evaluation plan:

Students enrolled in this programme shall be evaluated separately in each Course through a Continuous Comprehensive Evaluation (CCE) system. The CCE system shall involve both formative and summative assessments, where students shall be evaluated through Sessional Tests (minimum 2) and Examinations (minimum 2) spanning over a Semester and finally the students shall be awarded with Grades at the end of the Semester by summing up the performances in all those Sessional Tests and Examinations.

Evaluation plan for Theory Courses:

Sessional Test/ Examination		**Course Credit ≤ 2**		**Course Credit ≥ 3**		**Semester period**
Nomenclature	Type	Marks	Duration	Marks	Duration	
Sessional Test-I	Written	20	30 min	25	45 min	Within 5th week
Mid-Semester Examination	Written	30	90 min	40	2 hours min	Within 10th week
Sessional Test-II	Written/Assignment/ Seminar etc.	20	XX	25	XX	Within 14th week
End-Semester Examination	Written	50	2 hours	60	3 hours	Within 18th week

Course coverage in a Theory Course shall preferably be as follows:

1. **Sessional Test-I:** From the beginning up to the Sessional Test-I.
2. **Mid-Semester Examination**: From the beginning up to the Mid-Semester Examination.
3. **Sessional Test-II:** From the Mid-Semester Examination up to the Sessional Test-II.
4. **End-Semester Examination:** Questions for not more than 20% of the total marks may be asked from the portion of the syllabus covered prior to the Mid-Semester Examination. The rest of the marks shall be devoted to the syllabus covered after the Mid-Semester Examination.

8. DETAILED SYLLABUS

SEMESTER I

ED 105: Basics in Computer Application L2 T 0 P 1 CH4 CR 3

Learning Outcomes of The Course: After the completion of this course, the student teacher will be able to:

1. Describe a computer system and its working.
2. Open the windows operating system and use word processing package
3. Use the word processing package in education
4. Acquire the skills of trouble shooting whenever there are problems in the working of computer.

Contents

Unit -1: Computer Hardware and Organization

a) Motherboard, Processor, RAM, Cache, Interface Cards, I/O Ports.
b) Parts of a PC.CPU, Control Unit, ALU, Instruction Set, Registers.
c) Generation of Computers, Classification of Computers

Unit–2: Types of Memory

a) Memory organization, fixed & variable word length memory,
b) Static and dynamic memory, RAM, ROM, cache memory, flash memory
c) Secondary Memory – HD, CD, DVD, Tape, and Pen-drive

Unit-3: Software and Programming and Problem Solving Aspect

a) OS, Utilities & Service programs
b) Communication s/w, DBMS, Multimedia s/w, Application s/w
c) Some common algorithms along with their flowcharts.

Unit-4: Concepts of Computer Network:

a) Introduction, Network Classification by scale and connection methods,
b) Network architecture and topology, Intranet, Extranet, Internet, TCP/IP, Basic h/w
c) Components of Network.

Unit-5: Data Base and Web Page

a) Introduction to Database and some concepts of DBMS
b) Simple concepts of Web Page designing using HTML.

Lab Classes

Working knowledge of Windows, MS-Word, MS-Excel, MS-PowerPoint, Simple web page designing using basic HTML tags

Text Books

1. P. K. Sinha and P. Sinha, “Foundations of Computing” BPB Publications.

Reference Books

1. R. G. Dromey, “How to Solve it by Computer”, Prentice Hall of India,
2. A. S. Godbole& A. Kahate, “Web Technologies”, TATA McGraw Hill,
3. E. Navathe, “Fundamentals of Database Systems”, Pearson Education.

ED 106 Education: An Evolutionary Perspective L2 T0 P1 CH4 CR3

Learning Outcomes of The Course: After the completion of this course, the student teacher will be able to:

1. Analyse the premises, contexts that are unique to education and appreciate the nature, the purpose of education, and their practical ramifications in the school context.
2. Analyse the philosophical reflections and educational thoughts of great Educational thinkers
3. Explain the nature of knowledge in Education and its contribution to status of education as a discipline and interdisciplinary in nature
4. Describe the roles of teacher, school and the community in the changing perspectives of pedagogy
5. Explain the historical development of education as a system, its evolving structures and examine the concerns, issues related to education system.

Contents

Unit -1: Concept of Education

a) Meaning of Education: Ancient to Present
b) Concepts in Education and their changing connotations: school, curriculum, teacher, learner, teaching, learning, instruction, freedom, autonomy and control in relation to the child and teacher;
c) Education as an organized, institutionalized, formal and state sponsored activity
d) Shifts in process of Education: knowledge giving, didactic and constructivist interpretations, modes of Education: distance and face-to-face (tutorial, small group, large group) and oral/aural to digital; individualized and group based

Unit–2: Aims of Education

a) Aims of education: Changing aims of Education in the context of globalization,
b) Educational aims as derived from the Constitution of India
c) Ideas of educational thinkers -Vivekananda, Gandhi, Tagore, Aurobindo, Dewey, Krishnamurthy and Paulo Friere.

Unit-3: Evolving Knowledge Base in Education

a) Nature of knowledge in education: concepts, statements, educational viewpoints,
b) Metaphors and theories; Emerging Knowledge base in education
c) Differences between information, knowledge, belief, and opinion
d) Interfaces with cognate disciplines such as physical, natural and social sciences

Unit-4: Learning Environment: The Changing Scenario

a) Changing roles of Teacher, learner's participation, knowledge emphasis, learning resources.
b) Shift in learning environments as well as pedagogy: Knowledge: focused to teacher, learner and learning environment.

Unit-5: Systems and structures in school education

a) Education as a system and structure: meaning and nature
b) Evolution of educational network over the past two centuries - 1800s to 21st century
c) Role of state-central government: need for a national system of education
d) Predominant concerns of the education system– coordination, quality assurance and Feasibility
e) Systemic reforms in education: meaning and need.
f) Demands from the secondary education system upon achieving universal elementary education

School Based Activities:

1. Students will visit the schools and observe the learning environment in relation to teacher's role, learner's participation, knowledge emphasis and learning resources.
2. Term paper/ seminar and discussions on some of the units

Text Books

1. Gara Latchanna2014.Foundation of Education. New Delhi: Neel Kamal Publications Pvt.Ltd.
2. Aggarwal, J C2008. Great Philosophers and Thinkers on Education, New Delhi: Shipra. Publications
3. Taneja V. R.Socio-Philosophical Approach to Education (Atlantic Publishers and Distributors, New Delhi, 2005).

Reference Books

1. Dewey, John. My Pedagogic Creed', in D.J. Flinders and S.J. Thorton(eds.) The Curriculum Studies Reader (Routledge: New York, 1997)
2. Dewey, John Experience and Education (Touchstone, New York,1997)
3. Kumar Krishna. Learning From Conflict (Orient Longman, New Delhi,1996)
4. Margaret, K.T. The open Classroom (Orient Longman: New Delhi, 1999)
5. Ozmon, Howard A and Craver,Samuel M Philosophical Foundations of Education (Prentice Hall, New York, 2007)
6. Prema, Clarke. Teaching & Learning: The Culture of pedagogy (Sage Publication, NewDelhi, 2001)

ED 104 Communicative English L2 T1 P0 CH3 CR3

Learning Outcomes of The Course: After the completion of this course, the student teacher will be able to:

1. Develop overall proficiency in English with a view to enabling the students to use English for communication and for study purposes;
2. Develop the student's interactive skills by developing their ability to listen to English for formal as in class lectures and informal as in face to face interactive situations with a high degree understanding, and helping them to speak English with a reasonable degree of fluency and with an acceptable pronunciation of the sounds of English;
3. Develop student's ability to read English texts-both of scientific and non-scientific nature silently with a high degree of comprehension;
4. Develop the student's skill of writing short paragraphs, formal and informal letters, curriculum vitae/resume, applications of various types, study notes, summary and appropriate words-both scientific and non-scientific.

Contents and Activities

A) Oral Communicative Activities

a) Information transfer activities: Pair and group works involving transfer of information (reading a brochure and advertisement/a notice a schedule or programme/drawing etc. and discussing these, finding a solution, arriving at a decision through speaking); extempore speech using clues, group discussion, seminar presentation etc.

b) Pair work: describing pictures, interpreting diagrams, gleaning information from different types of written materials including articles etc. and talking about them, formal seminar presentation, formal group discussion.

B) Reading

a) Reading and comprehension: global and local comprehension, drawing inferences,

b) Materials: Stories and essays (preferably a collection of comparatively short essays on scientific, interestingly written topics, biographical/autobiographical writings, short stories-adventure and scientific fiction), Reading silently in class followed by short comprehension questions, brief writing exercises, summaries in brief, personal responses (not typical question-answer type)- both oral and written. Reading material from Internet and talking and writing about them; reading scientific reports, articles collected from newspapers and magazines, Internet etc. and writing notes etc. on them.

C. Writing

a) Preparing reports, project proposals and writing reflective and argumentative essays. Writing applications of various types and for various purposes, curriculum vitae/resume, letters to the editors, letters to various agencies.
b) Writing short notes on article/reports read, summary of articles/paragraphs read, notes on lectures (talks-radio/TV/audio, video cassettes), opinions on discussions/letters, notice both

formal and informal/friendly, notes to inform others etc., interpreting pictures, advertisements, visuals (video, TV etc.) and writing briefly about them.

D. Vocabulary and Grammar

a) Using useful but unfamiliar words and phrases in conversation and in writing; Group verbs, idiomatic expressions; synonyms and antonyms
b) Structure of simple sentences; use of adverbials, longer sentences, combining sentences, Tenses, Use of passive in scientific discourse, various types of questions, direct and indirect narration.

Text Books

1. Balasubranium, T. (1981). A Textbook of Phonetics for Indian Students. New Delhi: Macmillan
2. Grellet, F. (1991). Developing Reading Skills. Cambridge: Cambridge University Press.

Reference Books

1. Sethi, J. & P. V. Dhamija. (1997). A Course in Phonetics and Spoken English. New Delhi, Prentice-Hall
2. Krishnaswamy, N. Modern English – A Book of Grammar, Usage & Composition. Macmillan India Ltd.
3. Richards, J.C. (2006). Communicative Language Teaching Today. Cambridge: Cambridge University Press

SEMESTER II

ED 107 Education and Development L2 T0 P1 CH4 CR 3

Learning Outcomes of The Course: After the completion of this course, the student teacher will be able to:

1. Explain the relationship between Education and individual, National development.
2. Examine the influences of political and policy decisions on Education and its aims,content and procedures.
3. Analyze the role of education in ensuring sustainable development.
4. Describe the financial supplication for education.

Contents

Unit-1: Education for Development

a) National Development–Meaning, Scope and Different Viewpoints
b) Education as a development indicator and related Indicators of national development,Education Commission 1964-66, NPE-1986, POA-1992.
c) Education and development of life skills: preparation of individuals for the 21st century
d) Role of education in ensuring sustainable development

Unit-2: Education and Socio-cultural Context

a) Education as an instrument of social change- influence of education on society, familyand their practices
b) Socio-cultural influences on the aims and organization of education
c) Impingement of cultural history on education

Unit-3: Education and Economic Development

a) Education for economic development- its meaning and nature
b) Education as an investment, Education as development of human resource: Education for Employability, Consumer driven educational programmes, Planning Commission, World Bank

Unit-4: Education and Globalization

a) Liberalization,
b) Privatization,
c) Internationalization and Globalization of Education

Unit -5: Emerging interface between political policies and Education

a) The National and State educational policies, Implementations of educational policies
b) State and centrally sponsored schemes of education
c) Relationship between constitutional provisions and educational policies, Right toEducation

School Based Activities:

a) Students will visit one government primary and one government secondary school to interact with teachers, students and community members to reflect on implementation of any one state/Centrally sponsored schemes/ programmes like RMSA, RTE Act 2009, Mid-Day meal,

Kasturba Gandhi Balika Vidyalaya (KGBV) etc.

b) Interact with school Heads to collect information about the progress of the schools as well as the scholarships and other inspirational motives received from various resources
c) Students will visit a local community and interact with different community members and get information to develop understanding about the significance of education in economic,socio-cultural and globalized contexts.

Text Books

1. Chandra, S.K. Education and Development (Discovery Publishing House, Delhi,2010).
2. Jayapalan, N. History of Education in India (Atlantic Publishers, New Delhi, 2008).
3. School Education in India – Present Status and Future Needs (NCERT, New Delhi,1986).

Reference Books

1. Ministry of HRD, Department of Education Learning without Burden, Report of the National Advisory Committee. Education Act. October, 2004.
2. UNDPA. Human Development Reports (New Delhi. Oxford, Oxford University Press) Education for All: The Quality Imperative. EFA Global Monitoring Report (UNESCO Paris, 2004).
3. World Bank. Reaching the Child: An Integrated Approach to Child Development (Oxford University Press, Delhi, 2004).

Course Code: NC001
Course Title: NCC for Youth Empowerment

L	T	P	CH	CR
1	0	1	3	2

LEARNING OUTCOMES OF THE COURSE:

After the completion of course the student will be able to:

1. Describe about the National Cadet Corps and National Integration
2. Describe about Disaster Management, Health and Hygiene
3. Describe about Indian Army and Infantry Weapons
4. Explain the importance of Weapons training, Field Craft and Battle Craft
5. Demonstrate Drill and Drill Commands

Content

Unit-1: National Cadet Corps and National Integration

a) Aims, Objectives & Organization of NCC
b) Duties of NCC Cadet and Incentives of a NCC Cadet
c) NCC Camps: Types & Conduct
d) National Integration: Importance & Necessity

Unit-2: Disaster Management, Health and Hygiene

a) Fire Service & Fire Fighting
b) Natural Disasters
c) Man Made Disasters
d) Hygiene, Sanitation and First aid

Unit -3: Indian Army and Infantry Weapons

a) Organization of Infantry Battalion & its weapons
b) Foot Drill (FD), Drill with Arms (AD)
c) Introduction & Characteristics of .22 rifle
d) Introduction to Map Reading, Introduction to Field Craft and Battle Craft (FC & BC)

Practicum

1. Drill practice and drill square test (DST)
2. Firing Practice with .22 mm rifle and Map Reading exercises
3. Annual Training Camp and Centrally organized special NCC camps

Textbooks:

1. NCC OTA (2015). Cadet handbook common subjects.
2. NCC OTA (2015). Cadet handbook specialized subjects.

Reference Books:

1. National Cadet Corps (2013). Specialized subject SD/SW all wings. New Delhi: DG NCC. National Cadet Corps (2013).
2. Common subject SD/SW all wings. New Delhi: DG NCC

SEMESTER THREE

ED 205 Environmental Education L2 T0 P1 CH4 CR3

Learning Outcomes of The Course: After the completion of this course, the student teacher will be able to:

1. Describe the concept, importance, scopes and aims of environmental education
2. Explain the environmental pollution, possible hazards and its courses and remedies
3. Develop a sense of responsibility towards conservation of environment, biodiversity and sustainable development
4. Exhibits reasonable understanding about the role of school and education in fostering the idea of learning to live in harmony with nature and the need to conserve the environment for sustainable development.

Contents

Unit- 1: Introduction to Environmental Education

a) Meaning of environment, concept, importance, aims and scope of Environmental Education
b) Differences between Environmental Education and Environmental Science
c) Multidisciplinary nature of Environmental Education

Unit -2: Environmental Pollution

a) Nature, causes, effects of air, water, soil, marine, noise, thermal pollution
b) Measures for checking pollution
c) Greenhouse effect and Ozone layer depletion and its effects

Unit -3: Bio-diversity and related issues

a) Meaning of Bio-diversity, Bio Diversity of Assam,
b) Wild life protection Act, Conservation of Bio Diversity,
c) Need for conservation of genetic diversity for maintaining ecological balance
d) Biosphere Reserve, National Park, Wild life Sanctuary,
e) learning to live in harmony with nature

Unit -4: Environmental Awareness through Education

a) Different programmes of Environmental Education for secondary school students
b) Environmental education for developing healthy attitude towards environmental protection

Unit- 5: Role of Teachers and Students

a) Environment Education tool for sustainable development
b) Social and educational issues of environmental conservation
c) Role of teachers and students in Environmental conservation

Practicum

1. Students will visit the nearby environmental sites or local polluted areas to observe and study from environmental awareness view point and submit the report.
2. Visit to national park and sanctuary for study of Bio Diversity and to submit their respective presentations.

Text Books

1. Krishnamacharyulu, V. and G.S.Reddy. (2004).Environmental Education: For B.Ed. Students of Indian Universities. Neelkamal Publications, New Delhi.
2. Vijayan.S. (2008). Principles of Environmental Education. Sarup & Sons, New Delhi.
3. Kumar Aravind, (2003).Environmental challenges of 21st century. PH Publishing Corporation. New Delhi

Reference Books

1. Robert B. Stevensyn. (2013).International handbook of search on Environmental Education. Rutledge publication.
2. Suresh Pauchari.(2012).Environmental Education. Pearson publication
3. Robert B.Stevenson (2012). International handbook of research on environmental education, Routledge.
4. Edgar Gonzalez-Gaudiano and Michael A. Peters. (2008). Environmental education. Sense publishers, Europe.
5. Palmer.J& Philips. N.(1990). The handbook of Environmental Education. Routledge. Newyork.

ED 202: Learner and Learning L2 T0 P1 CH4 CR3

Learning Outcomes of The Course: After the completion of this course, the student teacher will be able to:

1. Describe the basic concepts of nature of learner and develop an understanding about the influence of a psycho-social cultural context in shaping human development.
2. Explain the nature, and causes of individual differences among learners and discusses the strategies to meet the educational needs to various types of children.
3. Critically analyse the different theoretical perspectives on learning and get conversant with psychological principles and techniques to facilitate learning.
4. Identifies the various factors of learning and discuss the role of the teacher and school in addressing various factors influencing learning.
5. Explain teaching as a process of communication and be aware of paradigm shift in teaching learning.

Contents

Unit- 1: Nature of the Learner: Child and Adolescent

a) Learner as a developing individual; a psycho-social entity; stages of development
b) Developmental characteristics of a child and an adolescent: Physical, Cognitive, social, Emotional, moral and language; their interrelationships
c) Factors influencing development such as heredity, nutrition, child-rearing practices, siblings and peers

Unit -2: Understanding Differences between Learners

a) Differences between individual learners: Multiple Intelligence, Learning Style, Self-Concept, Self-Esteem, Attitude, Aptitude, Skills and Competencies, Interest, Values, Locus of Control and Personality.
b) Understanding -differently - abled learners, slow learners, gifted and exceptional learners
c) Methods of assessing individual differences: tests, observation, rating scales, self-reports
d) Catering to individual differences: grouping, individualizing instruction, guidance and
e) Counseling, bridge courses, enrichment activities and clubs

Unit -3: Understanding Learning

a) Nature of learning: learning as a process and learning as an outcome
b) Types of learning: factual, associations, conceptual, procedural, generalizations, principles and rules, attitudes, values and skills
c) A critical analysis of the relevance and applicability of various learning theories for different kinds of learning situations
d) Pedagogic principles for organizing learning: behavioristic, cognitivist, and humanistic

Unit -4: Factors Influencing Learning

a) Biological and hereditary factors influencing learning
b) Factors related to the subject matter content and learning material
c) Factors related to the method of learning
d) Factors influencing remembering and forgetting
e) Conceptual organization and Reorganization, scaffolding
f) Attention, motivation and readiness as factors influencing scholastic learning
g) Role of the teacher and school in addressing various factors influencing learning

Unit -5: Learning Communication and Experience

a) Concept, components and types of communication,
b) Classroom communication – an analysis of its facilitative and Inhibitive nature
c) Role of media in communication process, teaching as interpersonal communication,
d) Reflection on the factors of communication affecting learning and learner
e) The issue of media influences on learning – role of parents and teachers
f) Paradigms for organizing learning: teacher centric, subject centric and learner centric

School Based Activities

Students will visit school and interact with class teacher for the following tasks:

1. Critical analysis of classroom instruction in the light of the understandings developed in Units 2 & 3
2. Any one experiment on learning – division of attention, memory, transfers of learning.
3. Analysis of common behavioral problems observed in classroom, suggesting the ways to address them.
4. Administration of group intelligence test and reporting the result.
5. Analysis of classroom problems of high and low achievers and the strategies to address these problems

Textbooks

1. Aggarwal, J.C. (2009). Psychology of Learning & Development, Shipra Publication, Delhi
2. Mangal, S.K. (2007).Essentials of Educational Psychology, Prentice Hall of India, New Delhi
3. Chauhan, S. S.(2005) Advance Educational Psychology, Vikas Publishing House, New Delhi.

Suggested readings

1. Anita, Woolfolk. (2013). Educational Psychology: Active Learning Edition
2. Woolfolk, A.E. (2009) Educational Psychology (11th Edition, My Education Lab Series,(Prentice Hall, New York.
3. Matheson, David. (2004). An Introduction to the study of education (2nd edition). David Fulton Publish.
4. Dandipani, S.(2000).A Textbook of Advanced Educational Psychology. New Delhi: Anmol.

SEMESTER FOUR

ED 203 Contemporary Issues in Education L2 T0 P1 CH4 CR3

Learning Outcomes of The Course: After the completion of this course, the student teacher will be able to:

1. contextualise education in promotion of constitutional values and utilize information about human rights to formulate policies in education.
2. recognise the intersection between gender and other socio-cultural identities and develop inclusive classroom environment.
3. describe the concept and importance of yoga education and demonstrate basic asanas and pranayams for holistic development.
4. identify factors that give rise to conflict and war and suggest strategies to promote peace through education.

Contents

Unit-1: Indian constitution and Human Rights

a) Human Rights- Definition, Historical Background
b) United Nations and Universal Declaration of Human Rights
c) Right to Child Protection, Constitutional provisions
d) National Human Rights Commission, State Human Rights Commission
e) Role of Voluntary organizations and Educational Institutions
f) Constitutional provisions for Universalization of Elementary Education
g) Right to education and its implications for Universalization of Secondary Education (USE)

Unit-2: Gender Issues in Education

a) Gender Culture and Institution: Intersection of class, caste and religion,
b) Construction of Gender in Curriculum Framework since Independence: An Analysis, Gender and the hidden curriculum, Gender in Text and Context (textbooks inter-sectionality with other disciplines, classroom processes including pedagogy),
c) Meaning of Equality of Educational Opportunities, provision and outcomes; constitutional provisions for ensuring equity
d) Nature and forms of inequality including dominant and minor groups, gender
e) Inequality in schooling: public-private schools; Rural-urban-tribal schools, and differential school systems – schools for education of the challenged, idea of Common School System

Unit-3: Inclusive Education

a) Definition, concept and importance of inclusive education
b) Historical perspectives on education of children with diverse needs
c) Difference between special education, integrated education and inclusive education
d) Advantages of inclusive education for education for all children
e) International& National Initiatives
f) Current Laws and Policy Perspectives supporting IE for children with diverse needs

Unit-4: Yoga Education

a) Origin of Yoga & its brief development,
b) Yoga as a Science or Art (Yoga Philosophy and essential).
c) Meaning of Yoga, Objectives, Types, importance of yoga and yogic Asanas
d) Meditation – Objectives, types, effect on body, mind and soul,
e) Yogic therapies and modern concept of Yoga

Unit-5: Peace Education

a) Peace as a dynamic Social Reality
b) Relevance of Peace: regional, national and international contexts
c) Dangers to Social Security: terrorism, war, natural calamities and impact on quality of life
d) Peace context: conditions for promotion of peace, UNESCO's concerns on Peace and
e) Understanding, National Integration, International Understanding
f) Role of education in promotion of peace: implications for pedagogy
g) Teacher role in promoting peace

School Based Activities

1. Analysis of school textbooks from gender equality perspective.
2. Survey of students on awareness of gender equality concerns.
3. Students will visit the schools and identify the children with special needs and find out the extent to which they are benefited by the current laws and policy perspectives
4. Students will learn basic aasanas and pranayama during practical period and visit a school and give Yoga training to the students
5. Survey of students on awareness of human rights

Text Books

1. Gupta, S. Education in Emerging India (Shipra Publications, Delhi, 2008)
2. Rao, V. K. and Nayak, A.K. Secondary Education (A.P.H. Publishing Corporation, New Delhi, 2002).

Suggested Readings

1. Kumar, Arvind. Environmental challenges of the 21st century (APH Publishing Corporation, New Delhi,2003).
2. Govt. of IndiaNational Policy on Education (Min. of HRD, New Delhi, 1986)
3. Govt. of India.Programme of Action (NPE). (Min of HRD, New Delhi, 1992)
4. UNESCO.Education for All: The Quality Imperative. EFA Global Monitoring Report. (UNESCO, Paris, 2004)

Course Code: ED 204
Course Title: Assessment and Evaluation

L	T	P	CH	CR
2	0	1	4	3

Learning Outcomes of The Course: After the completion of this course, the student teacher:

1. critically analyses the recent trends and scope of assessment and evaluation.
2. examines the contextual roles of different forms of assessment in schools.
3. explores the different dimensions, procedures, tools and techniques related to assessment
4. examines the issues and concerns of assessment and evaluation practices in schools.
5. apply the statistical tools for analysis and interpretation in educational assessment process.

Contents

Unit 1: Perspectives on Assessment and Evaluation

a) Conceptual overview of assessment and Evaluation
b) Meaning, Principles and Purposes of Assessment and Evaluation
c) Forms of assessment: based on
   - purpose : prognostic, formative, diagnostic and summative,
   - nature of information gathered : qualitative, quantitative
   - nature of interpretation : norm referenced, criterion referenced

Unit -2: Tools and Techniques for Assessment and Evaluation

a) Different Types of Tests
   - Paper pencil tests, Oral tests, and Performance tests
   - Construction of an Achievement Test and Diagnostic test
b) Different Types of Tests
   - Rating scale, Check list, Anecdotal records , Socio-metric technique, Interview, Questionnaire and Inventory
   - Use of Projects, Assignments, Work sheets, Practical work, Seminars and Reports as assessment devices
c) Self-assessment and peer-assessment practices
d) Developing and maintaining a comprehensive learner profile

Unit-3: Reforms in Evaluation

a) Recent trends and practices prevailing in assessment and evaluation: online assessment, open book exam, participatory assessment, performance based assessement
b) Rubrics & Portfolios: Meaning and significance in evaluation
c) Continuous and comprehensive evaluation
d) Credit system and Grading - direct and indirect

Unit- 4: Issues, Concerns and Trends in Assessment and Evaluation

a) Issues and Problems: Marking Vs Grading, No detention policy, Objectivity Vs Subjectivity
b) Policy perspectives on examinations and evaluation: Recommendations in National Policies of Education and curriculum frameworks.
c) Impact of entrance test and public examination on teaching and learning

Unit-5: Elementary Statistics in Educational Evaluation

a) Need and importance of statistics in education
b) Classification and tabulation of data
c) Graphical representations of data
d) Measures of central tendency, Measures of variability, Measure of Relative Position: Percentiles and Percentile Ranks
e) Normal distribution - normal probability curve and its characteristics

Engagement with the Field/Practicum/Activity: The Students may undertake any one of the following activities:

1. Design a Questionnaire or Interview Schedule in a selected topic
2. Design different types of questions items and identify the reliability of the test.
3. Present the report of student: using a portfolio or rubrics

Suggested Readings and References:

Text Books

1. Sidhu, K.S. (2009).New Approaches to Measurement and Evaluation, Sterling Publishers, New Delhi
2. Lal, J.P. (2006) Educational Measurement and Evaluation. New Delhi: Anmol Publications
3. George, D. (2005) Modern Trends in Examination System. New Delhi: Commonwealth Publication

Reference Books

1. Reid, Howard M. (2013). Introduction to Statistics-Fundamental Concepts and Procedures of Data Analysis. New Delhi: SAGE Publications Pvt Ltd.
2. Gardner, John (2012). Assessment and Learning -2ndedition. New Delhi: SAGE Publications India Pvt. Ltd.
3. Pearson Series in Education (2012) Essentials of Educational Technology and Management, New Delhi, Pearson Education
4. Quinlan, Audrey M. A (2012). Complete Guide to Rubrics: Assessment Made Easy for Teachers, K. D. College, USA: Rowman Littlefield Education.

Online/Web Resources/eBooks (Links)

1. Hickey, D. & Itow, R. C. (2012). Participatory assessment for participatory teaching and learning in school contexts**.** *Designing with Teachers: Participatory Approaches to Professional Development and Education*,78-88. https://dmlhub.net/wp-content/uploads/2012/08/designing-with-teachers.pdf
2. Northern Illinois University Center for Innovative Teaching and Learning. (2012). Rubrics for assessment. *Instructional guide for university faculty and teaching assistants.* https://www.niu.edu/citl/resources/guides/instructional-guide

3. Davis, M. H., & Ponnamperuma, G. G. (2005). Portfolio assessment. *Journal of Veterinary Medical Education*, *32*(3), 279–284. https://doi.org/10.3138/jvme.32.3.279

4. Brualdi A. (2000). Implementing Performance Assessment in the Classroom. *Classroom Leadership, 3*(5) http://www.ascd.org/publications/classroom leadership/feb2000/Implementing-Performance-Assessment-in-the-Classroom.aspx

SEMESTER FIVE

ED 301: Teaching Approaches and Strategies L2 T0 P1 CH4 CR3

Learning Outcomes of The Course: After the completion of this course, the student teacher will be able to:

1. Describe the role of a teacher at different phases of Instruction.
2. Demonstrate his/her understanding of different skills and their roles in effective teaching.
3. Critically reflect on the suitability of learning resources planned in teaching-learning and design ICT integrated learning resources.
4. Apply Learning Resources for Different Pedagogies.
5. Explain Changing roles and develop competencies of a teacher in technology enhanced learning

Contents

Unit -1: Understanding Teaching

a) Teaching as a planned activity – elements of planning
b) An analysis of teacher roles and functions:
    i) pre-active phase: visualizing; decision-making on outcomes, preparing and organization;
    ii) interactive phase facilitating and managing learning;
    iii) post-active phase – assessment of learning outcomes,
c) Professionalism in teaching, professional ethics, concepts of teaching- skills, competencies and commitments.

Unit- 2: Teaching Approaches and Models of Teaching

a) Instructional Skills: Structuring, Soliciting and Reacting, Verbal and Non-verbal, Feedback and Reinforcement, Discourse, Demonstration and Modeling
b) Advance Organizer Model, Inquiry Strategy as approach to teaching thinking skills and construction of knowledge, Concept Attainment/ Concept Formation, Inductive Thinking, Problem Based Learning/Project Based Learning
c) Approaches to Organizing Learning - Approaches to Individualized Instruction: Computer Managed Instruction, Programmed Instruction, and Learning Activity:
d) Packages; Approaches to Small Group and Whole Group Instruction: Cooperative and Collaborative approaches to learning, Brain storming, Role Play and Dramatization, Group Discussion, Simulation and Games, Debate, Quiz and Seminar

Unit -3: Learning Resources for Classroom Teaching

a) Meaning, purpose, steps in development, guidelines for use, and criteria of judging quality of the following resources
b) Print Resources: resources for communicating verbal experiences - text book, work book,Case study and self-instructional material
c) Audio Resources: resources for communicating audio experiences - educational radio
d) Broadcast and audio programmes – an analysis of their formats, strengths and limitations
e) Visual Resources: Resources for communicating visual experiences
f) Non-projected visual Resources: graph, map chart, poster, models and material – nature of experiences provided by them, their making and possibilities of using them as learning resources
g) Projected Visual Resources: still visuals – slide, transparency and film-strip, moving visuals –film, video and animation

Unit-4: Learning Resources for Different Pedagogies

a) Media selection, utilization and integration into teaching and learning – learning resources for different pedagogies: a classification of learning resources based on teaching objectives.
b) Principles of self-learning
c) Ways and means of promoting self-learning: organization, merits and demerits of
d) Computer Assisted Instruction, personalized system of instruction, self-paced activity,
e) Learning activity packages, learning centers, mini courses, modular instruction, and Programmed instruction
f) Learning to learn skills – An analysis and teacher's role in promoting them.

Unit-5: Technology-Enhanced Learning Resources

a) ICT and Multimedia as technology-enhanced communication devices in teaching-learning: a comparative review of various learning resources, Flip Class
b) Interactive white board – its features and advantages
c) Computer as a learning resource for presentation, documentation, word processing, evaluation. Animation and other visual presentation options on a computer; Internet as an Information Resource; evaluating information resources on the Internet
d) Emerging Internet trends and technologies for facilitating learning
e) Designing and Developing Technology-enhanced Learning Material
f) Changing roles and competencies of a teacher in technology enhanced learning

School Based Activities:

Students will visit the school and observe the learning resources available in the school.

1. Preparation of at least three teaching-learning resources from those mentioned in Unit 2
2. Planning and preparation of an ICT integrated presentation for secondary level
3. Identification and use of an internet resource for learning at the secondary level
4. Critical analysis of an existing learning resource
5. Observe the teachers of various classes and identify the skills they adopt in their interaction with pupils.
6. Observe a teacher in action in the classroom and list down his / her various behaviors.
7. Observe the transactional mode of teachers who adopt different teaching methods**.**
8. Write down the name of a few methods that teachers generally employ for the purpose of teaching and classify them under teacher centered, pupil centered or group centered.
9. Writing instructional objectives for different content categories
10. Identifying skills incorporated in a lesson plan and judging their appropriateness and Adequacy
11. Practice of skills in a simulated situation.

Textbooks

1. Kochar, S.K. Methods and Techniques of Teaching (Sterling Publishers, New Delhi, 2009).
2. Rao, V.K. and Reddy, R.S (ed.) Teaching and Learning. Commonwealth Publishers, New Delhi, 2007.
3. Sampath K. et al Introduction to Educational Technology(Sterling Publishers, New Delhi, 2009)

Suggested readings

1. Bloom, B S., Englehart M D, Furst E J, Hill W H and Khrath wohl, D. R. Taxonomy of Educational Objective Handbook 1, Cognitive Domain, Handbook 2, Affective Domain Longman, London,1964 .
2. Jangira N K and Ajit Singh Core Teaching Skills: The Microteaching Approach. NCERT, New Delhi, 1982.
3. Kumar, K L Educational Technology. New Age International (P) Ltd Publishers, NewDelhi, 1996.

Course Code: ED 302

Course Title: Classroom Organizations and Management

L	T	P	CH	CR
2	0	1	4	3

Learning Outcomes of The Course: After the completion of this course, the student teacher will be able to:

1. Analyse the purpose of classroom management for effective teaching-learning process.
2. Describe various physical facilities required for smooth functioning of school activities.
3. Explain the role of teachers and the principal in ensuring a vibrant school climate
4. Discuss various ways of preventing problems in managing a classroom.
5. Explain various mechanisms for coordinating the functions of school.

Contents

Unit -1: Classroom Organization

a) Classroom organization– Meaning and purposes. Seating arrangements and its purposes.
b) Concept of a smart classroom. Display area and chalk board – other facilities such as OHP and Multimedia in a classroom.
c) Characteristics of School climate – conducive, learner friendly, inclusive, vibrant, Relation between school policy and school climate

Unit -2: Physical Facilities in a School

a) Physical resources in a school - physical space (building) with adequate classroom space, adequate furniture, learning resources such as labs, library, sports field, and staffrooms, rest rooms, etc.
b) Management of physical resources - Cleanliness, appropriate use of each with an intent or Schedule; Streamlining ways of using the facilities: coordination, sharing

Unit-3: School Environment- Teachers' Role

a) School as an institution with an environment of its own leadership style of the headmaster and its influence on teacher role performance
b) Visualize the requirements- procure, maintain and replenish with support of authorities,
c) Teacher self-assessment and accountability – importance of feedback,
d) Factors affecting school environment - goodwill, acceptance, belongingness, openness, orderliness, and access, both among teaches and between teachers and students, promoting self-esteem among students; Team work and transparency in functioning among teachers

Unit- 4: Classroom Management

a) Classroom management – concept, need and approaches
b) Roles of students in a classroom – leader, follower and non-participant
c) Role of a teacher in classroom management – relationship between leadership styles of a teacher and classroom discipline
d) Managing behavior problems in a classroom– Preventative, Supportive and Corrective.
e) Common - mistakes in classroom behavior management. Establishment of routines, rules and procedures
f) Punishment and its legal implications – the rights of a child
g) Time management in a classroom – allocated time versus engaged time

Unit – 5: Mechanisms for Coordinated Functioning in School

a) Planning: annual and long term; annual school calendar
b) Day to day schedules- time table, notifications, announcements, Monitoring for coordinated functioning: allotment, autonomy and accountability (internal and external)
c) Staff Meetings: forum for sharing, review and further planning,Regular, documentation of events and activities
d) Approaches to professional development of teachers in a school
e) Mechanisms that promote and hinder school-community and teacher-parent relationship

School Based Activities:

Students will visit the school and:

1. Observe the school environment and identify the problems of the students and interact with head and teachers regarding the solutions**.** Conduct an action research project on secondary school classroom problem.
2. Survey of resources available (human and material) in a school and the manner of their utilization.
3. Draw out a plan of the school building in the area and write a critical report.
4. In consultation with the principal and teachers of a school, prepare an institutional plan.
5. Observe the various activities run in the school to understand the mechanism of school. Assess the existing monitoring mechanism at secondary school and give suggestion for improvement.

Text Books

1. Krishnamacharyulu. V. (2008), School Management and system of Education. Neelkamal publications PVT. LTd.
2. Siddhu, S.K.(1987) School Organization and Administration. New Delhi: Sterling Publishers
3. Gupta, S. K. and Gupta S (1991) Educational Administration and Management (ManoramaPrakashan, Indore).

Reference Books

1. Wayne Hoy & Cecil mskel (2012) Educational Administration: Theory, Research and Practice. Mcgraw Hill Humanities. (9th edition).
2. Fred.C.Lunenburg& Allan C.Ornstein.(2011).Educational Administration: Concepts And Practices,Cengage Learning(6th Edition).
3. Marsh, C.(2000).Handbook for Beginning Teachers. Second Edition (Pearson Education, Australia.
4. Vashist, Savita(ed.).(1998). Encyclopedia of School Education and Management (Kamal Publishing House, New Delhi.
5. Chau, Ta-Ngoc. (2003): Demographic Aspects of Educational Planning. Paris: International Institute for Educational Planning.

SEMESTER SIX

ED 307 PEDAGOGY B: MATHEMATICS- I L 2 T0 P1 CH 4 CR 3

Learning Outcomes of the Course:

On the completion of this course, the student teacher would be able to:

1. acquaint with the meaning and nature of discipline mathematics
2. internalize the aims and objectives of teaching mathematics and endow with the significance of taxonomy of instructional objectives of teaching mathematics
3. inquire into the contribution of eminent mathematicians
4. gain perspective on the principles, approaches and the recent trends in mathematics curriculum structuring and the mode of transaction
5. apprehend the pedagogy of teaching mathematics and tune themselves as a innovative practitioner

Contents

Unit I: Nature and Scope of Mathematics and Objectives of teaching it

a) The concept, meaning and Nature of Mathematics

b) Place and value of Mathematics in the Modern World

c) Need and importance of Mathematics in school curriculum

Unit 2: Aims and Objectives of Teaching Mathematics

a) Aims and Objectives of teaching Mathematics at different stages

b) Taxonomy of Educational objectives –Cognitive, Affective, Psychomotor

c) Need and importance of stating instructional objectives and identifying learning outcomes in behavioural terms

.

Unit 3: History of Mathematics with special reference Indian Mathematics

a) Contribution of Indian and Western Mathematicians

b) Contribution of Arabs and Greeks to the development of mathematics

c) Correlation of mathematics with other subjects

Unit 4: Construction and Organisation Mathematics Curriculum

a) Principles governing the construction and organisation of curriculum

b) Approaches in curriculum construction- Psychological, Logical, Topical and Spiral

c) Modern Trends in curriculum construction and analysis of secondary level mathematics curriculum

Unit 5: Planning of Instruction in Mathematics

a) Lesson plan - Selecting the content for instruction (facts, concepts, generalisation, process, Sequencing of content categories), identifying the teacher points, organisation of content.

b) Choosing the appropriate methodology and teaching aids (Heuristic Method, Analytic-synthetic method, Inductive-deductive method and laboratory method)

c) Construction of different types of tests and use of appropriate evaluation tools

School Based Activities:

1. Preparation of biographic sketches of Indian Mathematicians.
2. Observe the mathematics teacher and list down the various strategies, methods, techniques and audio visual materials practiced by them to stimulate the students understanding of concepts.
3. Preparation of four lessons plans on any topics from prescribed mathematics school texts using 5E/or ICON models.
4. Preparation of an achievement test on any topic by developing blue print on prescribed text and development of test items in conformity with blue print.
5. Analyze the achievement test and identify the learning difficulties of students.

Textbooks:

1. Chambers, Paul.(2010). *Teaching Mathematics,* New Delhi: Sage South Asia Publishers.
2. Sidhu, K.S. (2006).*The Teaching of Mathematics,* New Delhi: Sterling Publishers Pvt ltd.
3. Malhotra,V. (2006). Methods of Teaching Mathematics, New Delhi: Crescent Publishing Corporation.
4. Sudhir Kumar (2000). Teaching of Mathematics, New Delhi: Anmol Publications.

Suggested Readings:

1. Clare Lee, S.,Johnston-Wilder, Robert Ward-Penny .(2012). A Practical Guide to Teaching Mathematics in the Secondary School, Routledge Publishers, London
2. Deepka,E.(2007).Designing assessment for mathematics.(2ndEd).Thousand Oaks, CA:Corwin Press.
3. Anderson, L., & Krawth Wohl, D.E. (2001). A taxonomy for learning, teaching and assessing: A revision of Bloom's taxonomy of educational objectives (Abridged). NewYork: Addison Wesley Longman, Inc.

Course Code: ED308
Course Title: Pedagogy A: Physical Sciences- I

L	T	P	CH	CR
2	0	1	4	3

Learning Outcomes of The Course: After the completion of this course, the student teacher:

1. describes the meaning, nature, scope and historical development of physical science and discuss strategies to promote scientific attitude, scientific temper among learners following the steps of scientific method.
2. formulates the aims and objectives of teaching and learning physical science.
3. design the framework of lesson plan using different teaching methods, approaches and strategies for teaching-learning of physical science.
4. develops and use various resources for teaching-learning physical science.
5. compares the perspective of science curriculum in the NCFs with prescribed school science syllabus and textbooks.

Contents

Unit -1: Nature and Scope of Physical Science

a) Nature and Scope of Physical Science, Historical and Developmental Perspectives of Science
b) Role of Science in Removing Ignorance and Superstition, Bringing Socio-Economic Changes Concern to Environment
c) Steps in Scientific Method. Developing Scientific Attitude and Scientific Temper
d) Science process skills

Unit–2: Aims & Objectives of Teaching and Learning Physical Science

a) Aims & Objectives of Teaching Physical Science at Secondary School Level.
b) Formation of General and Specific Objectives w.r.t the Taxonomy of Educational Objectives(Bloom's Taxonomy with Anderson & Krathwohl's Revision)
c) Nurturing Curiosity, Creativity and Aesthetic Sense in Physical Science
d) Development of Problem Solving Skills in Physical Science

Unit-3: Pedagogy of Physical Science

a) Criteria of selecting Appropriate Method, Approach and Strategy of Teaching-Learning Physical Science
b) Methods of Teaching-Learning Physical Science: Teacher Centred and Students Centred
c) Approaches and Strategies of teaching-Learning Physical Science: Constructivist Approach, Collaborative Learning Approach, Problem Solving Approach, Concept Mapping, Cognitive conflict, Experiential Learning Approach, Inquiry Approach, Analogy Strategy etc.
d) ICT in Science Education

Unit-4: Resources for Teaching-Learning in Physical Science

a) Identification of Learning Resources from Immediate Environment, Community resources in Teaching Learning Physical Science, Handling Hurdles in Utilisation of Resources
b) Exploring Alternatives Resources, Collection of Locally Available materials and Improvisation of Apparatus, Science Kits
c) Laboratory as a Learning resource, Planning and organization of Physical science laboratory
d) Technology: Use of Various Web Resources (ICT resources) in Physical Science Teaching

Unit-5: Physical Science Curriculum and Text Book

a) Place of Physical Science in School Curriculum
b) Issues and Concerns of Physical Science Curriculum
c) National Curriculum Frameworks of NCERT with Special Reference to Science Education, Emphasis of NCF-2005 on Transaction of Curriculum
d) Analysis of Text Books, School Syllabus and Other Printed Materials in Physical Science (State, NCERT etc.), Characteristics of a Good Text book.

Engagement with the Field/Practicum/Activity: The Students may undertake any one of the following activities:

1. Visit a school and organize a group activity to develop scientific attitude like quiz, role-play, panel discussion etc.
2. Visit a school and organize a science exhibition and poster presentation of scientific concepts.
3. Students will visit the school and identify various components in science laboratory and other related activities.
4. Preparation of low cost and no cost learning teaching aids on any topic.
5. Content analysis of any topics of sciences.
6. Design & develop at least two learning resources for physical science (one out of them has to be an ICT based learning resource).
7. Design a learning situation in Physical Science by selecting an appropriate strategy.
8. Comparing the science textbooks at Secondary Stage on the basis of different validities of Science Curriculum stipulated in NCF-2005.

Suggested Readings and References

Text Books

1. Vaidya,N. (1999). *Science Teaching for 21st Century*. Deep & Deep Publications.
2. Mohan, R. (2002). *Innovative Science Teaching for Physical Science Teachers*. Prentice Hall of India Pvt. Ltd., New Delhi.
3. Das, R.C. (2009). Science Teaching in Schools. Sterling, New Delhi
4. Gupta, S. K. (1985). Teaching of Physical Science in Secondary Schools. New Delhi.
5. NCERT (2013). Pedagogy of Science, Textbook of B.Ed., Part I&II, National Council for Educational Research and Training, New Delhi.

References

1. NCERT (2005). National Curriculum Framework for School Education. National Council of Educational Research and Training (NCERT), New Delhi.
2. NCERT (2006). Position Paper of National Focus Group on Teaching of Science. New Delhi: NCERT
3. Tobin, K.(1993). The Practice of Constructivism in Science Education. Lawrence Erlbaum Associates.
4. Tony L., Matt C., Bernie K. and Judith T.(2010).Teaching Science. New Delhi, Sage Publication India Pvt .Ltd.

Online/Web Resources/Websites/eBooks (Links):

1. International Bureau of Education The Chinese National Commission For Unesco (2000). *Science Education For Contemporary Society :Problems, Issues and Dilemmas.* Final Report Of The International Workshop On The Reform In The Teaching Of Science And Technology At Primary And Secondary Level In Asia:Comparative References To Europe. http://www.ibe.unesco.org/sites/default/files/China_FinalReport.pdf
2. National Academy of Sciences and . 2008. *Science, Evolution, and Creationism*. Washington, DC: The National Academies Press. https://doi.org/10.17226/11876.
3. McFarlane A. & Sakellariou S. (2002). The Role of ICT in Science Education, Cambridge Journal of Education, 32:2, 219-232, DOI: 10.1080/03057640220147568
4. Rocha Fernandes G.W., Rodrigues A.M., Rosa Ferreira C.A. (2019) ICT-Based Science Education: Main Digital Resources and Characterisation. In: Using ICT in Inquiry-Based Science Education. SpringerBriefs in Education. Springer, Cham. https://doi.org/10.1007/978-3-030-17895-6_1

ED 309 PEDAGOGY B: BIOLOGICAL SCIENCE - I L2 T 0 P1 CH 4 CR3

Learning Outcomes of The Course: After the completion of this course, the student teacher will be able to:

1. Critically analyse biological science as a dynamic body of knowledge.
2. Construct meaning and concept related to the changing trends in learning of biological sciences.
3. Explore the opportunity of developing scientific attitude, values and skills through learning of biological sciences.
4. Define the concept of pedagogical analysis of biological sciences and apply various strategies of teaching biological sciences.
5. Describe the importance of professional competencies, professional ethics for a biology teacher and explain the impact of technology on biological science.

Contents

Unit -1: Biological Science as a Dynamic Body of Knowledge

a) Nature of knowledge in biological sciences
b) Historical and developmental perspectives of biological sciences
c) Major scientific achievements in biological sciences
d) Inter relationship of biology and other disciplines of science and their integration

Unit -2: The Changing Emphasis in Learning Biological Sciences

a) The changing trends in goals/objectives of learning biology
b) Development of process skills in science through learning of biology
c) Construct meaning and concepts related to biology through observation and exploratory activities in the environment

Unit - 3: Construction of Knowledge and Skills in Biological Sciences

a) Constructivist approach in learning biological sciences
b) Misconceptions in biological sciences and their remedies
c) Concept mapping of themes related to biology
d) Development of scientific attitudes, positive values and identification and development of skills related to biological sciences
e) Non formal channel for learning biological science: Arrangement of science exhibition/fairs including state and national exhibition, field trips and excursions, children's science congress

Unit -4: Pedagogy in Biological Sciences

a) Pedagogical Analysis: Identification of units, themes, concepts/learning point, generalizations and issues/problems
b) Strategies of teaching biological sciences : Inquiry learning, guided discovery, inductive-deductive method, co-operative and collaborative learning

Unit -5: Professional Development of Biology Science Teacher

a) Development of professional competencies of biology teacher
b) Professional ethics of biology teachers
c) Biological science and gender issues
d) Biological science and ethical issues
e) Impact of technology on biological science

School Based Activities

Students will visit the school

1. Explore the possibilities of developing scientific attitude and skills through observation of classroom learning of biology.
2. Observe the classroom for strategies of teaching biological sciences.
3. Observe the classroom and make a report on professional competencies of biology teacher.
4. Identification of the learning difficulties in any topic and prepare remedial programmes.
5. Preparation of low cost and no cost learning teaching aids on any topic.

Textbooks:

1. Das, R.C. Science Teaching in Schools .Sterling, New Delhi. (2009).
2. Aggarwal .D.D. Modern Method of Teaching Biology, Karanpaper backs, New Delhi (2008).
3. Sharma, P.C. Modern Science Teaching, New Delhi: Dhanpat Rai Publications(2006).

Suggested Readings:

1. Sounders, H.N., (1967).The Teaching of General Science in Tropical Secondary Schools. London: Oxford University Press.
2. Thurber, W.A. and Collette, A.T. (1970).Teaching of Science in today's Secondary School. Boston: Allay and Bacon Inc.,
3. UNESCO: Modern Trends in Teaching Biological Sciences Vols III.

ED303 School Education in North East India L2 T0 P0 CH2 CR2

Learning Outcomes of The Course: After the completion of this course, the student teacher will be able to:

1. Describe the Education scenario of the North East.
2. Explain the historical developments in school education in the region
3. Identify the common problems in the school education in different states of the region
4. Discuss strategies for handling some of the problems by the teachers

Contents

Unit -1: North-East India – A Historical Perspective on Education

a) North-east India-diversity, common features, phases of education
b) Contribution of Missionaries towards Educational Development in the region
c) Brief overview of educational development
d) Imbalances of education, nature of disparity – caste/gender/urban/rural
e) Right to Education Act 2010

Unit -2: School Education of the North-East

a) Organization of Education - pre-primary, primary, secondary and higher secondary levels.
b) Enrolment, dropout, concept of universalization of education
c) Role of SSA, curriculum and teacher training;
d) Implementation of SSA, RMSA, MDM, ICT etc

Unit- 3: Planning School Education

a) Planning and administration of education at different levels -viz; state boards, central boards and NIOS.
b) Problems, innovations and changes in school education.

Unit -4: Training and Educating School Teachers

a) Brief historical development of Teacher Education in the North East India
b) Role of SCERTs in teacher education in the North East India
c) Functions of IASE, CTE, DIET etc in the North East India
d) Role of NCTE in regulating teacher education in the North East India

Unit -5: Inclusive Policy in School Education

a) Meaning, historical background of social exclusion
b) Accessibility of school education to SC, ST, Tea garden communities, minority and other marginalized sections of the society
c) Measures for ensuring inclusion in education including school education
d) School Based Activities: seminars and group discussions

Text Book

1. Education in North East India: Experience & Challenge, Edited by: Biloris Lynden and Utpal Kumar De, Pub. By: Concept Publishing Company, New Delhi, 2004.

Reference Book

1. Education and Culture in North East India, Edited by: L.K. Barua. Indian Institute of Advanced Study, Shimla, 2011.

SEMESTER SEVEN

ED 407 PEDAGOGY B: MATHEMATICS- II L2 T 0 P1 CH 4 CR3

Learning Outcomes of The Course: On the completion of the course the student teacher would be able to:

1. acquainted with meaningful pedagogical analysis of various topics in secondary school mathematics
2. appreciate the conception and significance of arithmetic and modern mathematics in daily life
3. acquire innovative strategies and techniques for successful in teaching and learning modern mathematics.
4. explore the diverse backgrounds and interests children bring to the classroom from their environment and experience to promote positive attitude towards modern mathematics concepts
5. familiarize the nature and functions of various instructional resources

Contents

Unit 1: Teaching of Arithmetic with special reference to the following topics:

a) Number system, complex number, rational and irrational numbers, number line
b) Decimal fractions, ratio, proportion, percentage, loss and profit,
c) Partnership business, discount, interest, shares, stocks and dividends, bank account and other forms of deposits.

Unit 2 : Teaching of Algebra with special reference to the following topics :

a) Exponents, algebraic expressions, square and cube formulae,
b) Factorisation, HCF, LCM, polynomials, linear equations, linear simultaneous equations, quadratic equation, graphs, logarithms,
c) Surd permutation and combination, A.P. and G.P. series.

Unit 3: Teaching of Geometry with special reference to the following topics:

a) Triangles, types of triangles theorems on angles of a triangle and on right angled triangles, congruency and similarity of triangles,
b) Circles and related theorems, theorems on concurrency locus, construction and mensuration,
c) Trigonometric ratios of identities, values of trigonometric ratios of some particular angles, heights distances.

Unit 4 : Teaching of Statistics with special reference to the following topics :

a) Collection, classification tabulation and graphical representation of data and their interpretation,
b) Measures of central tendency, Measures of variability
c) Flow chart and algorithm for solving computational problems.

Unit 5 : Learning Resources in Mathematics

a) Types and functions of different learning resources for Mathematics instructional support
b) Preparation and use of learning resources: Text books, Models, Calculators and Computers.
c) Use of the Mathematics Laboratory for enhancing learning.

School Based Activities

1. Visit the school library and list the available resources for enriching mathematics teaching.
2. Observe the mathematics laboratory and list the resources available and give suggestions to facilitate the establishment of a mathematics laboratory.
3. Prepare a lesson plan using ICT or prepare a programmed instruction material on any topic.
4. Preparation of low cost and no cost learning teaching aids on any topic.
5. Critical Evaluation of Mathematics Textbook (VI to X)
6. Analysis of unit / chapter in a mathematics text book and identify the concepts, principles, process in the underling mathematical structure.
7. Construct a diagnostic test in mathematics and diagnosing pupils learning difficulties and suggesting remedial measures.

Textbooks:

1. Tiwari.D.(2007). Encyclopaedia of Modern methods of Teaching , New Delhi: Crescent Publishing Corporation.
2. James, Anice, (2005). *Teaching of Mathematics*: Hydrabad: Neelkamal Publication Pvt. Ltd.
3. Sharma, H.S. & Mangal, U.C. (2005). *Teaching of Mathematics* Agra: Radha Prakashan Mandir.
4. Aggarwal, S.M. (2002) : A Course in Teaching of Modern Mathematics, Dhanpat Rai, New Delhi.

Suggested Readings:

1. Kincheloe, J. (2008). Critical Pedagogy (2nd Edn). New York: Peter Lang.
2. Sumner, W.L.(1938). The Teaching of Arithmetic & Elementary Mathematics. Basil Blackwell, Oxford, https://archive.org/details/dli.ernet.455/page/n5/mode/2up
3. Bender, W.N. (2005). Differentiating Math instruction strategies that work for K-8 classrooms. Thousand Oaks, CA: Corwin press.
4. Butler and Wren : (2000), The teaching of Secondary Mathematics, MC Graw Hill Book Company.

Course Code: ED408
Course Title: Pedagogy B: Physical Science- II

L	T	P	CH	CR
2	0	1	4	3

Learning Outcomes of The Course: After the completion of this course, the student teacher:

1. designs unit plan, lesson plans in physical science based on behaviourist and constructivist approaches and prepares teaching-learning aids in science.
2. identify the erroneous concepts in scientific knowledge and design dialogue strategies for communication.
3. plan & organises physical science co-curricular activities.
4. explains the need of different types of assessment strategies and discuss different tools and techniques of assessment in Physical Science.
5. describes the need & importance of professional development for physical science teachers.

Contents

Unit -1: Planning the Process of Teaching-Learning in Physical Science

a) Need of Planning Teaching-learning Experiences in Physical Science
b) Designing of Unit Plan and Lesson Plan in Physical Science & Its Significance, Lesson Planning based on Behaviourist & Constructivist Approaches
c) Preparation of Various Types of Teaching–Learning Aids/Instructional Aids in Science Teaching, Principles for Selection of Proper Teaching-Learning Aids & their use.
d) Skills of Teaching and Its significance
e) Simulated Teaching as key component of Teaching Practice Programme, Use of Simulated Teaching to develop Skills of Teaching in teacher trainees

Unit-2: Exploring Learners and Learning Process

a) Exploring Learners - generating discussion, involving learner in teaching –learning process Encouraging learner to raise questions, appreciating dialogue amongst peer group
b) Science as a Discourse of Interdisciplinary learning;
c) Communication in Science Learning
d) Erroneous Concepts of Scientific Knowledge and Remedies: learner's preconception, sources of misconception, language and misconception, effective remedies.

Unit-3: Planning & Organising Physical Science Co-Curricular Activities

a) Importance of Science Activities
b) Planning & Organization of Field Visit/Study Tours, Project Work, Science quiz, Excursion, Science Exhibition: Nurturing Creative Talent at Local Level and Exploring Linkage with District/State/ Central Agencies
c) Debate, Discussion, Drama, Poster making Visit to Various Places, Science club, Celebration of specific days, Science Fair etc.

Unit-4: Tools & Techniques of Assessment for Learning Physical Science

a) Concept of Test, Examination, Measurement, Assessment and Evaluation
b) Planning Assessment Framework in Physical Science, Learning Indicators in Physical Science
c) Assessment of Process Skills/Experimental Skills in Science Teaching.
d) Practicing Continuous and Comprehensive Evaluation/Assessment to test Regular Progress
e) Tools & Techniques of Assessment in Physical Science- Assessment of Written & Oral Work, Project Work, Laboratory Work, Filed Trips, Journal Writing, Concept mapping, Portfolio, Rubrics etc

Unit-5: Continuing Professional Development of Physical Science Teachers

a) Need for Professional Development of Physical Science Teachers
b) Role of Reflective Practices in Professional Development
c) Participation in Professional Learning Community and Collaboration with Research Institutes
d) Need for Pre-service & In-service Professional Development Programmes

Engagement with the Field/Practicum/Activity: The Students may undertake any one of the following activities:

1. Preparation of a unit plan in Physical Science.
2. Preparation of at least two lesson plans for a particular concept in Physical Science- one based on behaviourist and another on constructivist approach.
3. Develop a simulated lesson plans.
4. Construction of various type of test items/tools for assessment.
5. Debate on any one topics like- Physical Science and Sustainable development; Social and ethical issues related to Physical Science; Role of Language in Physical Science; Gender and Physical Science etc
6. Visit to any of the professional organization and prepare a report on the in-service professional development programmes that they undertake for Science teachers.
7. Visit a nearby school to interact with a few senior teachers of physical science. Seek their opinion on what major area you should focus upon during your pre-service training programme.
8. Identify the institutions and organisations that regularly organise seminars and conferences on various aspects of science and science education. Collect the information about the themes of the seminars and conferences that were organised during last five years.
9. Ask your fellow trainees to observe the practice lessons taken by you and provide their feedback. Refine your presentation in the light of their feedback.
10. Observe some practice lessons taken by your fellow students and try to give them critical feedback about their teaching-learning proceedings.

Text Books

1. Sharma, R. C. (2006). Modern Science Teaching. New Delhi: Dhanpatrai publishing company (P) Ltd.
2. Vaidya, N. (2003). Science Teaching for the 21st Century. New Delhi: Deep and Deep Publications.
3. NCERT (2013). Pedagogy of Science, Textbook of B.Ed., Part I&II, National Council for Educational Research and Training, New Delhi.
4. Mohan, R. (2002). *Innovative Science Teaching for Physical Science Teachers*. Prentice Hall of India Pvt. Ltd., New Delhi

References

1. Prasad, J. (1999). *Practical aspects in Teaching of Science*. New Delhi: Kanishka Publication.
2. NCERT (2005). National Curriculum Framework for School Education. National Council of Educational Research and Training (NCERT), New Delhi.
3. NCERT (2006). Position Paper of National Focus Group on Teaching of Science. New Delhi: NCERT.
4. Science & Children. A Peer Reviewed Journal Published by National Science Teachers Association (NSTA).
5. The Science Teacher. A Peer Reviewed Journal Published by National Science Teachers Association (NSTA).
6. NCERT (2000). Position Paper of National Focus Group on Examination Reforms. New Delhi: NCERT.
7. NCERT (2012). Source Book on Assessment for Classes VI-VIII Science
8. CBSE (2016). Revised Formative Assessment Manual for Teachers Class-IX Science

Online/Web Resources/Websites/eBooks (Links):

1. National Academies of Sciences, Engineering, and Medicine. 2015. *Science Teachers' Learning: Enhancing Opportunities, Creating Supportive Contexts*. Washington, DC: The National Academies Press. https://doi.org/10.17226/21836.
2. National Research Council. 1999. *The Assessment of Science Meets the Science of Assessment: Summary of a Workshop*. Washington, DC: The National Academies Press. https://doi.org/10.17226/9588.
3. National Research Council. 1997. *Science Teaching Reconsidered: A Handbook*. Washington, DC: The National Academies Press. https://doi.org/10.17226/5287.
4. Jensen EA and Gerber A (2020) Evidence-Based Science Communication. *Front. Commun.* 4:78. https://doi.org/10.3389/fcomm.2019.00078

ED 409 PEDAGOGY B: BIOLOGICAL SCIENCE- II L2 T0 P1 CH4 CR3

Learning Outcomes of The Course: After the completion of this course, the student teacher will be able to:

1. Design Lesson Plans for Biological Science.
2. Plan and organize several activities of biology laboratory.
3. Describe various issues and concerns of Biological Science Curriculum.
4. Use textbooks of biological science as source of living and explore other resources available from immediate environment.
5. Explain the trends and ways of assessment to evaluate creativity and expression of learner.

Contents

Unit-1: Planning for Learning in Biological Sciences

a) Writing learning objectives ,Steps and advantages of designing lessons
b) Identification of learning experiences and organizing activities in the classroom use of field experience, Laboratory and ICT
c) Designing lessons for Biology Content

Unit-2: Biological Science laboratories and Related Activities

a) Planning and organization of biology laboratory
b) Planning and management of practical activities in biology laboratory
c) Evaluation of students activities in biology laboratory
d) Planning and organization of science club activities

Unit-3: Biological Science Curriculum

a) Issues and concern of biological science curriculum
b) Various interventions for reformulation of curriculum related to biological science
c) Emphasis of NCF-2005 on transaction of curriculum: Going beyond biological science text book.

Unit-4: Text Book and Other Learning Resource

a) Characteristics of a good text book and evaluation of text book
b) Effective use of text book for elaboration of concepts, activities, reflective thinking small group work etc.
c) Identification of learning resources from immediate environment and preparation and use of learning materials, evaluation of learning resources; Science parks, national parks, museum as resources sites for learning biological sciences
d) Supplementary materials work sheets, self-learning materials use of ICT in learning biology (web sides, interactive web sides, on line learning)

Unit-5: Evaluation of Learner's Performance

a) Practicing continuous and comprehensive evaluation to test regular progress
b) Developing blue print and framing different types of questions, diagnostic testing
c) Developing performance parameter for qualitative assessment anecdotal record, portfolio etc.
d) Reporting performance of learner

School Based Activities

Students will visit the school

1. Identification and listing of various components in biological laboratory and other related activities.
2. Interaction with teachers and students for critical analysis of curriculum related to biological sciences at secondary level.
3. Explore and identify learning resources available at school for children and children with special need
4. Identification the learning difficulties in any topic and prepare remedial programmes.
5. Preparation of low cost and no cost learning teaching aids on any topic.
6. Content analysis of any topics of biological sciences.
7. Preparation of blue print on prescribed text and development of test items in conformity with blue print.

Text Books

1. Das, R.C. Science Teaching in Schools .Sterling, New Delhi. (2009).
2. Aggarwal .D.D. Modern Method of Teaching Biology, Karanpaper backs, New Delhi (2008).
3. Sharma, P.C. Modern science teaching, New Delhi: Dhanpat Rai Publications(2006).

Reference Books

1. Sounders, H.N., (1967).The Teaching of General Science in Tropical Secondary Schools. London: Oxford University Press.
2. Thurber, W.A. and Collette, A.T. (1970).Teaching of Science in today's Secondary School. Boston: Allay and Bacon Inc.,
3. UNESCO: Modern Trends in Teaching Biological Sciences Vols III.

ED 404 School Internship- I (Four Weeks) L0 T0 P4 CH8 CR4

LEARNING OUTCOMES OF THE COURSE:

After the completion of this course the student will:

1. Identify and critically examine the different components, functions and processes of school system.
2. Evaluate the existing facilities and resources of the school system.
3. Analyse the school curriculum, annual school calendar, syllabus and textbook.
4. Develop lesson plan based on innovative methods and approaches.
5. Examine the role and significance of community as learning resource.

Framework

The internship will be organized for a continuous period of four weeks in selected schools of the area. The student-teachers will be oriented on the following components of school activities.

a. Understanding and examining the school process and existing facilities.

- Collect the information from school authority and record the observations on physical facilities and social organization of the school.
- Prepare a map of school complex.

b. Examination of school morning assembly

- Evaluation of classroom environment and learning activities. Attend the school assembly and record the observations on the various activities conducted in school assembly and students involvement in it.
- Make a reflection on significance of school assembly by highlighting the values gained through the different activities.

c. Evaluation of classroom environment and learning activities.

- Examine the classroom physical environment and prepare a layout of seating arrangement of the students.
- Describe the classroom management approaches adopted in the school.
- Describe the social organisation of classroom i.e the manner in which students interact with each other and the teacher, opportunities for students to learn formally and informally in the classroom, in the school etc.

d. Evaluation of school co- curricular activities.

- Develop an understanding on the importance of co-curricular activities in child personality development.
- Describe the various co-curricular activities conducted and organised in the school by highlighting its significance.

e. Analysis of existing school library and learning resources.

- Examine the school library and make an analysis of its organizational structure and management.
- List out the learning resources available in school and its usage.

f. Examining school laboratory organization and facilities.

- Examine the school laboratory organizational structure and management.
- List out the equipment and instruments available in school laboratory.
- Prepare a layout of school laboratory.

g. Analysis of Existing School academic calendar and Time Table.

- Examine the school annual calendar and time table of any elementary class
- Make a reflection on school annual calendar and time table with respect to the principles of its construction.

h. Analysis of school curriculum

- Make an analysis of existing school curriculum by describing the innovative activities that the school undertakes for child academic progress and personality development.

i. Maintaining student profile

- Record the observation of child information related to age, gender, learning abilities, interests/hobbies, apparent learning styles, apparent cultural/ethnic/racial/backgrounds, apparent socio-economic class, etc.

j. Analysis of school syllabus and textbooks.

- Analyse the syllabus of any elementary school subject and reflect on its organization.
- Review any elementary school textbook of any based on external and internal features.

k. Preparation of Lesson Plans and Unit Plans.

- Understanding the different structure and components of lesson plan.
- Learn to develop lesson plan based on innovative methods and approaches.
- Learn to prepare unit plans on topics from elementary school subjects.

l. Observation of classroom teaching.

- Understand the classroom teaching process and different activities conducted during instruction delivery.
- Record the observation of classroom teaching of regular teachers

m. Examining the community as resource

- Developing an insight into the role and significance of community as learning resource.
- Examine the local community and analyse its beneficial use as a learning resource for school.

Evaluation

Evaluation will be internal, done by the Department teachers. Evaluation will be done on different components of pre-internship. Student teachers will submit report on each pre-internship activity.

References and Resources (Text Books Links)

Text Books

1. National Council for Teacher Education.(2016).School Internship: Framework and Guidelines.New Delhi: NCTE.
2. NCFTE. (2010). National Curriculum Framework for Teacher Education.New Delhi.

Reference Books

1. TEACHER EDUCATION, SECOND EDITION. (2019). : PHI Learning Pvt. Ltd.
2. Kochhar, S. K. (2011). School Administration and Management. India: Sterling Publishers Pvt. Limited.
3. Savage, J. (2014). Lesson Planning: Key Concepts and Skills for Teachers. United Kingdom: Taylor & Francis.

Online/Web Resources/eBooks (Links)

1. Greenberg, E. (1978). The Community as a Learning Resource. *Journal of Experiential Education*, *1*(2), 22–25. https://doi.org/10.1177/105382597800100205
2. Stadler-Altmann, Ulrike. (2015). Learning Environment: The Influence of School and Classroom Space on Education. The Routledge International Handbook of Social Psychology of the Classroom,252-262
3. https://www.researchgate.net/publication/282348767_Learning_Environment_The_Influence_of_School_and_Classroom_Space_on_Education

SEMSTER EIGHT

ED 405: School Internship II (Sixteen Weeks) L0 T0 P16 CH32 CR16

LEARNING OUTCOMES OF THE COURSE:

After the completion of this course the student will:

1. Organise different school related events and co-curricular activities.
2. Develop subject specific lesson plan and teaching learning resources based on innovative methods and approaches
3. Develop tests to measure the learning achievement and diagnose the learning difficulties in a particular subject area.
4. Carry out research work specific to child development and school functioning.
5. Explain the significance and usage of maintaining reflective journal.

Framework

The internship will be organized for a continuous period of Sixteen weeks in selected schools of the area. One week orientation programme will be organized on the following components of school activities.

a. Practicing microteaching skills

- Developing microlesson plan on each microteaching skill and practicing demonstration classes with respective pedagogy teachers.

b. Organization of school related activities.

- organizing morning assembly meeting during the internship period
- participate and organizing different co-curricular activities like –Yoga camp, Exhibitions, Group Discussion, Quiz, Awareness raising program and Debate etc.

c. Preparation of Lesson Plans

- Develop subject specific lesson plan for each pedagogy based on innovative methods and approaches
- Teaching one lesson every day from any method/subject.

d. Undertake case study on a child.

- Identify a child as case and conduct a case study on intellectual, mental, physical, social and emotional development of the child under the supervision of teacher educator.

e. Conducting achievement test

- Assessment of the performance of the students preparing blue prints and question paper of achievement test.
- Analysing the results of the achievement test.

f. Preparation of a diagnostic tests and organisation of remedial teaching.

- Design and administer diagnostic test for identification of subject -specific learning difficulties
- Oragnisation of remedial classes to overcome the learning difficulties,
- Conduct of post test to assess the effectiveness of the remedial teaching

g. Development of teaching-learning resources.

- Develop subject-specific teaching learning materials and describe its significance and usage.

h. Teaching as a substitute teacher.

- Taking arrangement classes as assigned by the school coordinator.

i. Undertake action research project on at least one problem area of schooling

- Identify one problem in school and carry out action research under the supervision of teacher educator.

j. Maintenance of a reflective diary or journal to record

- recording reflections on day-to-day school activities and own teaching.
- maintaining reports related to curricular and co-curricular activities

Evaluation

Evaluation of performance during School internship will be done on the basis of assessment by the supervisors of the Department. The distribution of marks/weightage will be determined by the Departmental Advisory Committee. The evaluation of the teaching component will be done by both internal (continuous) and external experts, the ratio of weightage of internal-external being 60:40. The grading will be done according to the principles of evaluation and grading policies adopted by the University.

References and Resources (Text Books Links)

Text Books

- National Council for Teacher Education.(2016).School Internship: Framework and Guidelines.New Delhi: NCTE.
- NCFTE. (2010). National Curriculum Framework for Teacher Education.New Delhi.

Reference Books

- TEACHER EDUCATION, SECOND EDITION. (2019). : PHI Learning Pvt. Ltd..
- Kochhar, S. K. (2011). School Administration and Management. India: Sterling Publishers Pvt. Limited.
- Savage, J. (2014). Lesson Planning: Key Concepts and Skills for Teachers. United Kingdom: Taylor & Francis.
- Sagor, R. (2000). Guiding School Improvement with Action Research: ASCD.
- Measurement, Evaluation and Assessment in Education. (2016). India: Prentice Hall India Pvt., Limited.

Online/Web Resources/eBooks (Links)

- Xygkou, A. (2009). CHILD CASE STUDY-ASSESSMENT AND INTERVENTION. 10.13140/2.1.1011.0086.
- Göker S. D. (2016). Use of Reflective Journals in Development of Teachers' Leadership and Teaching Skills. Universal Journal of Educational Research, 4(12A), 63 - 70. DOI:10.13189/ujer.2016.041309

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