

**CURRICULUM AND SYLLABI
FOR
BACHELOR OF EDUCATION(B.ED.)
2013**

**IASE
DEPARTMENT OF EDUCATION
UNIVERSITY OF KALYANI
KALYANI, NADIA
741235**

CURRICULUM AND SYLLABI
FOR
BACHELOR OF EDUCATION (B. ED.)
UNIVERSITY OF KALYANI
(To be effective from the academic session 2013 – 2014)

1.0 Scope

The University provides the Bachelor of Education (B. Ed.) Course with the aim to impart quality teacher education for the pre-service and in-service teachers of secondary and higher secondary levels. Under the broad domain of the applied discipline of Education, the B. Ed. curriculum has been framed on the basis on the recommendations of the NCFTE, 2009 and the Statutory Bodies of the University of Kalyani.

2.0 Objectives

The general objectives of the course are to enable each student-teacher to –

- understand the meaning, scope and bases of education as means of professional excellence;
- understand, analyze and appreciate the roles of a teacher in shaping Indian society;
- understand the psychology of learners and its implications in the processes of teaching and learning.
- understand the nature, purpose and philosophy of secondary (including HS) education in India in the context of contemporary related issues and problems;
- understand professional responsibilities, competencies, commitments and performances of the teacher in the Indian Context;
- acquaint with the professional skills to perform better teaching in the classrooms;
- develop professional excellence of the secondary-higher teachers.

3.0 Eligibility for Admission

A fresher candidate should have passed the Bachelor's Degree / Master's Degree of the University of Kalyani or any other university recognized by this University, with minimum 50% marks or equivalent grade and should have offered at least one school subject of secondary or higher secondary level at the first and / or second degree level(s) of study. Existing teacher of the secondary / higher secondary level may apply through proper channel as a deputed candidate. Relaxation of marks will be given to the candidates belonging to S. C. , S. T. ,P.H. and other candidates of notified categories as per Government Rules.

Admission to eligible candidates will be held according to merit and as per the selection procedure and regulations laid down by the University of Kalyani, NCTE and the Government of West Bengal.

4.0 Curriculum Transaction

4.1 Duration : The duration of the course is one academic year.

4.2 Medium of Instruction : The medium of instruction is English or Bengali.

4.3 Curriculum Transaction Hour : A minimum period of 100 teaching hours is to be provided for each papers of the course to each of the teacher-students.

5.0 Eligibility Norms for Appearing in the Examination :

To become eligible for appearing in the final examination of the course, each student-teacher should fulfill the following norms :

- 5.1 Collegiate Candidate :**
1. Should keep at least 75% attendance in the theoretical as well as in practical papers.
 2. Should complete all the practical and other related assignments including the content based practical and teaching practice and submission of practical notebook / work diary / materials / documents / lesson plans etc as per requirements of Curriculum.

5.2 Non Collegiate Candidate : Should keep at least 60% attendance in the theoretical papers as well as in practical papers and complete the 'norm-2' of the collegiate candidate.

5.3 Discollegiate Candidate : If any candidate fails to keep minimum 60% attendance in the theoretical papers or fails to fulfill the 'norm-2' of the collegiate candidate or both will be treated as discollegiate candidate and will not be allowed to appear at the final examination.

5.4 Casual Candidate : If any collegiate or non-collegiate candidate fails to appear or fails to qualify in the final examination of the current session may be allowed to sit for any of the next consecutive two years final examinations with the permission of the university authority as a casual candidate.

6.0 Evaluation :

6.1 Theoretical : The **allotted** time for written examination **shall be** 3 hours for a paper of 100 marks and that of 2 hours for a paper of 50 marks.

STRUCTURE OF B.Ed. CURRICULUM AND SYLLABI

(Effective from the academic session 2013-2014)

Duration of the course: 12 months.

Total Marks of the Course: 1400 to be distributed as follows

A) Foundations of Education (100 x 2=200)

B) Pedagogy of Knowledge (100 x 3=300)

C) Pedagogical Knowledge of School Subjects (100 x 2=200)

D) Institution and School Based Experience (300)

E) Pedagogical Practicum (300)

F1) Psychological Practical (20)

F2) ICT Skill Development (50)

G) Language Proficiency-30

Name of the Courses:

A) Foundations of Education (100 x2=200)

Course 01: Education & Development

Course 02: Contemporary Issues in Education

B) Pedagogy of Knowledge (100 x 3=300)

Course 03: Learner & Learning

Course 04: Teacher, Teaching & Evaluation

Course 05: Learning Resource & Classroom Management

C) Pedagogical Knowledge of School Subjects (100 x 2=200)

Course 06: School subject-1

Course 07: School subject-2

D) Institution and School Based Experience (300) : Course 08

D1) Simulated Teaching & Peer Assessment (25 + 25+5+5) = 60

D2) Internship in Teaching at School = 40

D3) Final Teaching (100 + 100) = 200

E) Pedagogical Practicum (300): Course 09-Course -13

E1) Pedagogical Analysis of two school subjects (method papers)

$$50(S1) \text{ C-09} + 50(S2) \text{ C-10} = 100$$

For Work Education and Art Education 50(S2) will be treated in the Practical Works.

E2) Lab based subject: Lab Practical = 100 for first method only (S1) C-11

OR

Non Lab based subject: Project = 50 C-11A +

Activity/Text Book Analysis = 50 C-11B

E3) Achievement test construction on school subject as first method (S1) = 60 C-12

E4) Preparation of TLM on School Subject as first method (S1) = 40 C-13

F1) Psychological Testing = 20 C- 14

(Testing by standardized test on any two following areas: Personality, Motivation, Interest, Attitude, Learning Style, Test Anxiety, Psycho social Stress).

F2) ICT = 30 C- 15

G. Language Proficiency = 50 C-16

Foundations of Education

(200 marks)

Course 01 : Education and Development

Course 02 : Contemporary Issues in Education

Course 01 : Education and Development

Full Marks : 100

Total No. of Learning Hours : 100

Objectives : After completing this course the student-teacher will be able to :

- understand the relationship between education, individual and national development.
- examine the influence of political and policy decisions on Education and its aims, content and procedures.
- understand and how education derives its relevance from socio-cultural contexts and critically reflect on the influence of education on quality of life.
- analyze the social context of education and its bearing upon school system.
- examine the changing emphases on education in the context of globalization, liberalization and privatization.
- understand the contribution of major educational thinkers.

Unit – 1 : Concept, Aims and Functions of Education

[20 Hours]

- i) Meaning, nature, scope and functions of education.
- ii) Aims of education – individualistic and socialistic.
- iii) Four Fundamental Pillars of Education as proposed by Delors Commission (1997), UNESCO.
- iv) Bases of education – philosophical, sociological and economical foundations of education.

Unit – 2 : Education for Development

[20 Hours]

- i) Meaning and different view point of development with respect to Sarbha Siksha Abhiyan and leading to Sarbha Shiksha Mission and Current Educational Planning.
- ii) Education for Human Resource Development : Role of UNESCO & Dakar Convention.
- iii) Education for economic development – privatization and globalization.

Unit – 3 : Curriculum Studies [10 hours]

- i) Concept, nature and types of curriculum – hidden, child centric and activity centre.
- ii) Principles of curriculum construction, evaluation of secondary and higher secondary curriculum of West Bengal.
- iii) Concept and importance of co-curricular activities.

Unit – 4 : Education for Values and Socio-cultural Context [20 hours]

- i) Education as an instrument of social change.
- ii) Education as an instrument for value development.
- iii) Role of Education in cultural perspectives in emerging Indian society.
- iv) Emerging trends in societies and their impact on education – National and International context.

Unit – 5 : Modes of Education [20 hours]

- i) Forms of education – Formal, Informal and Non-Formal.
- ii) Agencies of education – Home, Socio-cultural Organizations and Mass Media.
- iii) Education for development of life skills and preparation of individuals for the 21st century.

Unit 6 : Some Great Educators [10 hours]

- i) Indian educators – Tagore, Gandhi and Vivekananda.
- ii) Western educators – Rousseau and Dewey.

References :

1. Agarwal, J. C. & Agarwal, S. P. (1992). Role of UNESCO in Educational, Vikas Publishing House, New Delhi.
2. Anand, C. L. et al. (1983). Teacher and Education in Emerging in Indian Society, NCERT, New Delhi.
3. Govt. of India (1986). National Policy on Education, Min. of HRD, New Delhi.
4. Govt. of India (1992). Programme of Action (NPE). Min. of HRD, New Delhi.

5. Mukherji, S. M. (1966). History of Education in India, Acharya Book Depot, Baroda.
6. Naik, J. P. & Syed, N. (1974). A Student's History of Education in India, MacMillan, New Delhi.
7. NCERT (1986). School Education in India – Present Status and Future Needs, New Delhi.
8. Salamatullah (1979). Education in Social Context, NCERT, New Delhi.
9. Ministry of Education (1966.). “Education Commission, “Kothari Commission”, 1964–1966. Education and National Development, Ministry of Education, Government of India.
10. Learning without Burden (2004). Report of the National Advisory Committee, Education At, Ministry of HRD, Department of Education.
11. National Policy of Education (1986). Ministry of HRD, Department of Education, New Delhi. Seventh All India School Education Survey, NCERT : New Delhi, 2002.
12. UNDP. Human Development Reports. New Delhi. Oxford : Oxford University Press.
13. UNESCO (2004). Education for All : The Quality Imperative. EFA Global Monitoring Report, Paris.
14. World Bank (2004). Reaching the Child : An Integrated Approach to Child Development. Oxford University Press, Delhi.

Course 02 : Contemporary Issues in Education

Full Marks : 100

Total No. of Learning Hours : 100

Objectives : After end of this course the student-teacher will able to :

- understand the basic concepts and issues related to universalization of secondary education.
- acquaint with the meaning of equity and equality in Education.
- become familiar with the idea of quality in education at secondary level.
- understand the contemporary issues in Education like Peace Education, Education for Sustainable Development, Inclusive Education .
- identify the problems of secondary education.
- understand the role of UGC, NCTE& NAAC to maintain and improve the quality of secondary education.
- identify the various causes of inequality in schooling.
- realize the importance of Right to Education and the provisions made for realizing it.
- understand the need and importance of education for peace and the national and international efforts towards it.
- explore the strategies for sustainable development.

Unit – 1 : Universalisation of Secondary Education

18 hours

- i) Indian Constitutional provisions
- ii) Policies and programmes for realizing universalisation of Secondary Education.
- iii) Right to education and its implications on Rashtriya Madhyamik Shiksha Mission for Universalisation of Secondary Education (USE).
- iv) Status of USE : access, enrolment, participation and achievement.

Unit – 2 : Equity and Equality in Education

16 hours

- i) Equality of educational opportunities – meaning, provision and outcomes.
- ii) Meaning of Equity and its constitutional provisions.
- iii) Nature and forms of inequality: gender, caste and class.

iv) Inequality in schooling .

Unit – 3 : Quality in Education

20 hours

- i) Meaning of ‘Quality Education’.
- ii) Indicators of Quality : related to learning environment, student outcomes.
- iii) Quality Measures in Secondary Education
- iv) Quality Control – Role of NCTE, NAAC, UGC and NCERT

Unit – 4 : Peace Education

15 hours

- i) Meaning and Concept of Peace Education.
- ii) Relevance of Peace : National and International Context
- iii) UNESCO’s concern on Peace and Understanding.
- iv) Teacher’s role in promoting peace.

Unit – 5 : Education for Sustainable Development

16 hours

- i) Sustainable Development : Meaning nature and scope.
- ii) Sustainable Development : Approaches & Strategies.
- iii) Integration of environmental concern in curriculum.
- iv) Role of teacher in promoting sustainable development.

Unit – 6 : Inclusive Education

15 hours

- i) Inclusive Education : Meaning, nature, need and philosophy.
- ii) Constitutional provisions – Govt. policy and intervention.
- iii) Role of PWD Act (1995) and RCI.
- iv) Implementation and strategies for inclusion in society and school.

References :

1. UNESCO’s Report on Education for Sustainable Development, Paris, UNESCO.
2. Ministry of Law and Justice, Right to Education Act (2009), Govt. of India, New Delhi.

3. UNESCO (2004). Education for All. The Quality Imperative, EFA Global Monitoring Report.
4. Bhandari, Bishnu, B. (2003). Education for Sustainable Development in Nepal Institute for Global Environment Strategies, Japan.
5. Swain, Sanjoy, K. (1998). Trends and Issues in Indian Education, Kalyani Publishers, Kolkata.
6. Agarwal, J. C. and Gupta, S. Secondary Education : History, Problems and Management, Sipra Publication, New Delhi.
7. Agarwal, J. C. (2005). Recent Development and Change in Education, Sipra Publication, New Delhi.
8. Narula, Manju (2006). Quality in School Education : Secondary Education and Education Boards, New Delhi, NUPEA / Sipra
9. Mukhopadhyaya, Marmar (2007). Education in India: Dynamic of Development, New Delhi, Sipra.

PEDAGOGY OF KNOWLEDGE
(300 MARKS)

Course – 03 : Learner and Learning

Course – 04 : Teacher, Teaching and Evaluation

Course – 05 : Learning Resources And Class Room Management

Course – 03 : Learner and Learning

Full Marks : 100

Total No. of Learning Hours : 100

Course Objectives : Upon completion of the course, student teachers will be able to

- develop an understanding about the impact / influence of socio cultural context in shaping human development, especially with respect to the Indian context;
- develop an understanding of dimensions and stages of human development and developmental tasks;
- understand the range of cognitive capacities among learners;
- reflect on their own implicit understanding of the nature and kinds of learning;
- gain an understanding of different theoretical perspectives on learning;
- appreciate the critical role of learner differences and contexts in making meanings, and
- draw out implications for schools and teachers.

Unit – 1 : Educational Psychology and Development of the Learner [20 Hours]

- i) Concept of Educational Psychology – Psychology applied in the field of education and teaching-learning. Relationship between Education and Psychology.
- ii) Development stages and their characteristics – cognitive (Piaget’s theory), psychosocial (Erickson’s theory), moral (Kohlberg’s theory) and language development. Role of education in different aspects of development.
- iii) Factors influencing development- heredity, nutrition, child-rearing practices, siblings and peers.

Unit – 2 : Differences in Learners

[20 Hours]

- i) Psychological factors causing differences in learners – Aptitude, Skills, Attitude, Interest and Values; Self-concept and Self-esteem; Intelligence- g-factor, multiple intelligence, IQ; Learning style; Creativity; Personality- Traits, Super traits / types (Theory based teaching-learning is not needed).
- ii) Diverse learners – creative learners, slow learners, gifted learners, learners with SLD (Specific Learning Disabilities). Identifying characteristics.

- iii) Methods of assessing differences in learners – Individual test and group test;
Verbal and non-verbal tests for intelligence and creativity; Personality tests.

Unit – 3 : Learning **[20 Hours]**

- i) Concept and nature of learning as a process. Learning curve. Conditions of learning – objective, subjective and methodological. Learning and maturation. Learning as an outcome – achievement and performance.
- ii) R. M. Gagne’s concept- Types of learning; Events of instruction; Learning outcome.
- iii) Transfer of learning and its educational significance.
- iv) Remembering and Forgetting – Factors of remembering - encoding, storage and retrieval. Information processing approach; Causes of forgetting; Strategies for effective memorization.

Unit – 4 : Factors Influencing Learning **[10 Hours]**

- i) Concept, nature and types of motivation – intrinsic, extrinsic and achievement.
- ii) Concept and nature of attention, determinants of attention, relationship with interest.
- iii) Role of teacher in addressing various factors influencing learning – a few strategies – cooperative learning, peer tutoring, collaborative learning.

Unit – 5 : Learning Paradigms **[20 Hours]**

- i) Behaviouristic Learning– Concept of connectionism (Thorndike) and conditioning (Pavlov & Skinner), Educational implications.
- ii) Cognitive Learning – Concept of Gestalt and its educational implications; Discovery learning.
- iii) Social Cognitive Learning – Concept (Bandura), nature and implications. Teacher as role model.
- iv) Social Constructivist Learning – Concept of Vygotsky, nature and implications.

Unit – 6 : Organization of Learning Experiences : Issues and Concerns

[10 Hours]

- i) Role of school – Guidance, Mental health, Co-curricular activities.
- ii) Strategies for organizing learning for diverse learners- Brainstorming, Within class grouping, Remedial teaching, Enrichment programme.
- iii) The issues of media influences on learning- role of parents and teachers.

References :

1. Woolfolk, A.E. (2009). Educational Psychology (11th Edition) (My Education Lab Series) Prentice Hall
2. Santrock, John W. (2006). Educational Psychology: update: preparing for PRAXIS TM and practice (2nd edition). Tata McGraw Hill, New Delhi.
3. Hurlock, Elizabeth B.(2007). Child Development(6th edition). Tata McGraw Hill, New Delhi.
4. Mangal, S. K. (2000). Advanced Educational Psychology. Prentice hall of India Pvt. Ltd. New Delhi.
5. Roy, S.(1994-95). Shishka Monovidya. Soma Book Agency. Kolkata. (Bengali)
6. Gagné, R. M. (1985) The Conditions of Learning and Theory of Instruction (4th edition). New York: Holt, Rinehart and Winston
7. Gardner, Howard (1989). *Frames of Mind. The Theory of Multiple Intelligences*, Basic Books, New York.
8. Lindgren, H. C. (1980). *Educational Psychology in the Classroom* Oxford University Press, New York.
9. Sarangapani M. Padma (2003), *Constructing School Knowledge :An Ethnography of learning in an Indian Village*, Sage Publication
10. Vygotsky, L.S. *Mind in Society*, Harvard University Press: Cambridge, 1978. Chapter 6.

(Recently published Bengali books on Educational Psychology may be consulted.)

Course – 04 : Teacher, Teaching and Evaluation

Full Marks : 100

Total Number of Learning Hours : 100

Objectives : The student-teacher will be able

- to enable the student teachers to understand the meaning; scope, objectives of teacher education and its development in India.
- to acquaint the student-teachers with the various aspects of student-teaching programme, prevailing in the country.
- to develop in the student teachers an understanding about the important research findings in teacher-education.
- to acquaint the student-teachers with the various professional associations.
- to understand the various aspects of teaching.
- to understand the levels of learning and teaching models.
- to comprehend the student-teachers the various approaches of teaching skill development.
- to acquire the knowledge of evaluation procedures at secondary and higher secondary levels in different subjects.
- to construct, implement and report of assessment of educational data.

Unit – 1 : Teacher

10 Hours

- i) Teacher in the emerging Indian scenario (as pointed out in NCTE document only) – Responsibility, Performance Areas, Competencies, Commitment and Profile.
- ii) Professional development of teacher with special reference to Secondary and Higher Secondary Stages – needs, delivery models, strategies and institutions (schools); Community and teacher (M. C., local bodies, etc.); Professional association and professionalism.

Unit 2 : Understanding Teaching

20 Hours

- i) Concept of Teaching : Micro Teaching – Concept, Characteristics, Teaching Skills, Techniques and Importance.

- ii) Stages / Phases of Teaching : Pre-active, interactive and post-active (operations in each stage), Designing Instructional System – Objectives, Content analysis, Selection of Strategies, media etc.
- iii) Teaching at different levels of learning – memory, understanding and reflective thinking.

Unit – 3 : Teaching Models :

20 Hours

- i) Models of Teaching – Meaning, need, types, elements.
- ii) Teaching Models – Basic teaching models (Glaser), Concept Attainment Model (Bruner) and Advance Organiser Model (Ausubel).

Unit – 4 : Planning of Teaching :

10 Hours

- i) Curriculum Planning.
- ii) Instructional Skills : Structuring, Soliciting, Reacting, Verbal and Non-verbal, Feedback and Reinforcement, Discourse, Demonstration and Modeling.
- iii) Preparation of a Plan : Unit Plan and Lesson Plan.

Unit – 5 : Assessment and Evaluation :

20 Hours

- i) Meaning of Assessment, Measurement, Tests, Examination and Evaluation.
Nature of Assessment and Evaluation.
Approach to Evaluation – Formative, Summative and Portfolio Assessment.
- ii) Tools of Evaluation in Educational Survey – Achievement Test, Diagnostic Test, Teacher made Test, Standardized Achievement Test, Objective Test, Essay-type Test, Construction of Achievement Test and Nature of Interpretation (Norm referenced and Criterion referenced).
- iii) Issues and Problems : Marking system vs. Grading system & Non-detention Policy.

Unit 6 : Construction, Implementation and Reporting of Assessment : 20 Hours

- i) Educational Data – Sources, Types, Collection, Organization through tabulation of educational data into frequency distribution and their graphical representation in pie-chart, histogram, frequency polygon & ogive and their interpretations.
- ii) Measures of Central Tendency (Mean, Median and Mode) and Dispersion (Average Deviation, Quartile Deviation and Standard Deviation only).
- iii) Measures of relationship (Rank Difference and Product Moment Method), Uses and Interpretation.

References :

1. Bloom, B. S. Englehart, M. D., Furst, E. J., Hill, W. H. and Khrathwohl, D. R. (1964). Taxonomy of Educational Objectives Handbook, 1, Cognitive Domain, Handbook, 2, Affective Domain, Longman London.
2. Buch, M. B. and Santharam, M. R. (1972). Communication in Classroom, CASE, Faculty of Ed. & Psy., M. S. Univ. Baroda.
3. Davis, Irork (1971). The Management of Learning, McGraw Hill, London.
4. Jangira N. K. and Ajit Singh (1982). Core Teaching Skills : The Microteaching Approach, NCERT, New Delhi.
5. Kumar, K. L. (1996). Educational Technology, New Age International (P) Ltd. Publishers, N. D.
6. Nagpure, V. (1992). Teacher Education at Secondary Level, Himalaya Publishing House, 'Ramdoot', Dr. Balerao Marg, Girgaon, Bombay.
7. Norris, N. (1990). Understanding Educational Evaluation, Kogan Page Ltd.
8. Passi, B. K. (1976). Becoming better Teacher Micro-teaching Approach, Sahitya Mudranalaya, Ahmedabad.
9. Sharma, R. A. (1983). Technology of Teaching; International Publishing House, Meerut.
10. Singh, L. C. Microteaching : Theory and Practical, National Psychology Corporation, Agra.
11. Ward & Ward (2007). Assessment in Classrooms.

Course-05 : B. Learning Resources and Class Room Management

Full Marks : 100

Total No. of Learning Hours : 100

Course Objectives : On completion of the course, the student teacher will be able to

- understand teaching as a process of communication and be aware of various resources available for making it effective.
- prepare and use appropriate instructional material for effective classroom transaction.
- design and develop an ICT integrated learning resource.
- critically reflect on the suitability of learning resources planned in teaching-learning.
- organize learning with active participation of learners – individually and in groups.
- understand importance of classroom management.
- describe approaches to classroom management.
- understand ways of preventing problems in managing a classroom.
- list physical resources and describe how to maintain them.
- explain the role of teachers and the principal in ensuring a vibrant school climate.

Unit – 1 : Learning Resources and Communication

20 Hours

- i) Learning Resources – Concept, Need, Material Resources and Human Resources of School.
- ii) Criteria of judging quality of the following resources :
 - Print - Text Book, Work Book Self Instructional Materials.
 - Audio Resources :- Educational Audio Programmes.
 - Non Projected Visual Resources:- Map, Chart, Poster, Models and Material as a learning resources.
 - Projected Visual Resources :- Slide, Transparency Film Strip, Moving Visual Film, Video and Animation as Learning Resources.
- iii) Communication – Concept, Components, Types, Factors of Communication, Effective Class Room Communication.

Unit – 2 : Education Technology as Learning Resource

15 Hours

References :

1. Alka, Kalra (1977). Efficient School Management and Role of Principals, APH Publishing Corporation, New Delhi.
2. Bagley, Classroom Management, New York : Macmillan
3. Buch, T. et al. (1980). Approaches to School Management, Harper & Row Publishers, London.
4. Blumberg, A. & Greenfield, W., (1986).The Effective Principal, Allyn& Bacon, London.
5. Campbell, R. F., Corbally, J. E. and Nystrand, R. O. (1983). Introduction to Educational Administration (6th ed.), Allyn and Bacon, Inc., Boston.
6. Govt. of India (1992). Programme of Action, MHRD, New Delhi.
7. Griffith, J. Podirsky, M. Deakin, S. and Maxwell, S. (2002). Classroom Layout, URL : <http://ehlt.flinders.edu.au/education/DLT/2002/environs/suyin/overview.html>.
8. Gupta, S. K. and Gupta, S. (1991). Educational Administration and Management, Manorama Prakashan, Indore.
9. Khan, M. S. (1990). Educational Administration, Asia Publishing House, New Delhi.
10. Marsch, C. (2000). Handbook for Beginning Teachers. Second Edition. Pearson Education, Australia.
11. Naik, J. P. (1970). Institutional Planning, Asia Institute for Educational Planning and Administration, New Delhi.
12. Sushi, T. et al. (1980). Approaches to School Management, London : Harper & Row.
13. Vashist, Savita (Ed.) (1998). Encyclopedia of School Education and Management, New Delhi, Kamal Publishing House.

PEDAGOGICAL KNOWLEDGE OF SCHOOL SUBJECT
(200 MARKS)

SCHOOL SUBJECT-1

SCHOOL SUBJECT-2

PEDAGOGY OF EDUCATION

Full Marks :100

Total No. of Learning Hours : 100

Objectives : After completion of the course, student-teacher will be able to

- be acquainted with general foundations and contexts of Education as a modern ally of human sciences.
- understand value and limitations of curriculum at H.S stage
- modify the curriculum at H.S stage with proficiency
- be acquainted with various types of teaching strategies in regard to the subject Education
- select the appropriate teaching strategy with reference to content and context
- be professionally competent to design pedagogical content knowledge to be imparted in actual teaching-learning systems
- develop critical attitude to different types of learning resources and to use them for becoming an informed and effective teacher
- understand various tools and techniques of assessment of pupil's scholastic and non-scholastic performance
- develop competencies to select, prepare and use them efficiently
- become a self- critical teacher of Education in modern days.

Unit – 1: Foundation and Context of Education as a Discipline [10 Hours]

- a) Meaning, nature and scope of Education as a school subject.
- b) Aims, objectives and significance of teaching Education at School level.
- c) **Relation** of Education with other subjects-Philosophy, History, Psychology, Sociology, Economics, Statistics, Science and Technology.

Unit – 2: Critical review of Curriculum and Syllabus of Education at School Level [10 Hours]

- a) Place of Education as an independent discipline in school curriculum.

- b) Review of Education curriculum at Higher Secondary stage in West Bengal **with critical appreciation.**
- c) Principles of curriculum construction and evaluation of curriculum **vis-à-vis these principles.**

Unit – 3: Teacher, Techniques and Strategies of Teaching Education

[20 Hours]

- a) **Professional qualities and ethics of an effective Education Teacher.**
- b) **Role and function of Education Teacher as a facilitator, mentor, motivator and problem solver.**
- c) Nature **and** purposes of **Techniques and Strategies of teaching Education--** Inductive, Deductive, Problem-solving, Lecture, Demonstration, Educational Excursion, Project, Workshop, **and** Seminar.
- d) Models of Teaching (Bruner, Glaser and Ausubel) **in accordance with teaching Education.**

Unit – 4: Learning Resources in Teaching Education

[20Hours]

- a) Learning resources **for teaching** Education - Concept, types and uses.
- b) Concept of Textbook, Reference book, Encyclopedia, Dictionary, Handbook, Programmed Learning Materials, Teaching aids, Question bank and Education laboratory, **and their uses as learning resources.**
- c) Selection, preparation and application of learning resources in Education (Audio-visual aids and ICT including multi-media).

Unit – 5 : Assessment of and for Learning Outcomes in Education [20 Hours]

- a) **Assessment and Evaluation in context of teaching Education – meaning, purpose, scope, importance and types**
- b) **Evaluation in Education – NRT & CRT, Formative & Summative and CCE.**
- c) **Principles of preparation and uses of different kinds of tools for evaluation in respect of Observation Interview and Questionnaire.**

Unit – 6 : Pedagogy of Knowledge in Education

[20Hours]

- a) Taxonomy and Instructional Objectives for teaching Education.
- b) Lesson Plan – Concept, preparation and criteria of its effectiveness.
- c) Pedagogical Analysis – meaning, purpose, scope and importance.
- d) Pedagogical Analysis on following areas :
 - Curriculum.
 - Forms of Education.
 - Factors of Learning.
 - Education in the differently abled children.
 - Factors of Education
 - Distance Education.
 - Growth and Development.

References:

1. Bloom, B.S. et al.,(1967)Taxonomy of Educational Objective Handbook 1, Cognitive Domain,Handbook 2, Affective Domain, London: Longman.
2. Dale Edgar (1961) Audio-visual Methods in Teaching, New York: Holt Rinehart and Winston.
3. Kumar, K.L (1996) Educational Technology. New Delhi: New Age International (P) Ltd. Publishers.
4. Mager. Robert(1962), Preparing Instructional Objectives Palo Alto, CA,.
5. Ministry of Education- 'Education Commission' 1966, MHRD, GOI.
6. Natarajan V and Kulshrestha S.P. (1983). Assessing Non- scholastic Aspects- Learners Behaviour, New Delhi: Association of Indian Universities.
7. National policy on Education, 1986. Ministry of MHD, GOI.
8. Nitko, A. J. (2001), Educational Assessment of students, Prentice Hall.
9. Norris, N(1900). Understanding Educational Evaluation, Kogan Page.

PEDAGOGY OF HISTORY

Full Marks : 100

Total No. of Learning Hours : 100

Course Objectives : After completion of this course the student-teachers will be able to :

- understand the foundation of teaching History.
- review the curriculum and syllabus of History at secondary and higher secondary level in West Bengal.
- acquaint with different strategies for teaching History at secondary and higher secondary level.
- prepare achievement test in History at secondary and higher secondary level.
- prepare lesson plans in History for instructional purposes.
- conduct pedagogical analysis of content for teaching History in the classroom.
- acquire competence in preparing tools of evaluation in History learning.
- acquire skills of analyzing text book in History.
- understand the role of history teachers to manage controversial issues in History
- acquaint with Action Research in History

Unit – 1 : Foundation of Teaching History

[18 Hours]

- a) Modern Concept of History
- b) Nature – Is History Science or Arts.?
- c) Value of Teaching History.
- d) Aims and objectives of Teaching History at Secondary & Higher Secondary Stage.
- e) History and Allied subjects – Geography, Political Science, Literature & Economics.
- f) Teaching History for National Integration & International understanding.
- g) Sources of History – Importance of Primary & Secondary Sources.
- h) Time & Space Sense in History – Importance.

Unit – 2 : Review of Curriculum and Syllabus of History at Secondary and Higher Secondary Level **[14 Hours]**

- a) Place of History in Secondary & Higher Secondary Level Curriculum in West Bengal.
- b) Principles of framing the History Curriculum.
- c) Criteria of selecting content for History Syllabus at Secondary and Higher Secondary Level.
- d) Evaluation of Existing History Syllabus in Secondary & Higher Secondary Level in West Bengal.
- e) Co-curricular Activities : Visit to Historical places and Debate in Teaching History.

Unit – 3 : Teacher and Strategies for Teaching History **[18 Hours]**

- a) Characteristics of Good Teaching Method in History.
- b) Lecture Method.
- c) Discussion Method.
- d) Dramatization Method.
- e) Project Method.
- f) Source Method.
- g) Quality of a Good History Teacher.
- h) Role of History Teacher in Managing Controversial Issue
- i) Problems faced by History Teacher.
- j) Action Research in History:

Unit – 4 : Learning Resources in Teaching History **[16 Hours]**

- a) Learning Resources in History –Time Line, Map, History Room, History library & History Museum as learning resources
- b) ICT and History Teaching – ICT as a learning resource in Teaching History.
- c) Text Book, Reference &Collateral reading as learning resources

Unit – 5 : Assessment of and for History Learning**[14 Hours]**

- a) Comprehensive and Continuous Evaluation (CCE) : Concept.
- b) Tools & Techniques of Evaluation in History – i) Unit Test, ii) Different Types of Questions-Objective Type Test & Essay Type Test
- c) Review of Present Evaluation System in History at Secondary and Higher Secondary Stage in West Bengal.
- d) Suggestions for Improvement of Present Evaluation System. of History in West Bengal
- e) Steps For Constructing Achievement Test in History

Unit – 6 : Pedagogical Knowledge**[20 Hours]**

- a) Pedagogical Analysis : Concept and Structure.
- b) Lesson Plan : Concept, Importance and Preparation of Lesson Plan.
- c) Mehargarh and Harappa Civilization – Asoka as a ruler – Gupta Culture and Civilization.
- d) Problems and Policies of Aladdin Khilji – Mughal administration – Rajput Policy of Great Mughals.
- e) Permanent Settlement – Great Revolt of 1857 – Emergence of Nationalism – Indian Freedom Movement Special reference to Gandhi and Netaji.
- f) French Revolution – Causes and Impact – NATO – SEATO – NAM.

References :

1. Carr, E. H. (1961). What is History ? London, Macmillan and Co. Ltd.
2. Ghosh, K. D. (1951). Creative Teaching of History. Calcutta. Oxford University Press.
3. Chowdhuri, K. P. (1975). Effective Teaching of History in India, New Delhi, NCERT.
4. Ghate, V. D. (1962). The Teaching of History, Bombay, Oxford University Press.
5. Jadav, Nirmal (2001). Teaching of History, New Delhi, Anmol Publication.
6. Sharma, S. K. Teaching of History, New Delhi, Lotus Press.

7. Collingwood, R. G. (1951). *The Idea of History*. London, Oxford University Press.
8. Johnson, H. (1942). *The Teaching of History in Elementary and Secondary School*, New York, Macmillan.
9. Philip, Ian (2008). *Teaching History : Developing as a Reflective Secondary Teacher*, New Delhi, Sage Publication India Pvt. Ltd.
10. Haydn, Terry and Counsell, Christine (2003). *History, ICT and Learning in the Secondary School*, U. K. Rutledge.

PEDAGOGY OF POLITICAL SCIENCE

Full Marks : 100

Total No. of Learning Hours : 100

Course Objectives : After completion of this course the student-teachers will be able to :

- understand the foundation of teaching Political Science.
- review the curriculum and syllabus of Political Science at secondary and higher secondary level in West Bengal.
- acquaint with different strategies for teaching Political Science at secondary and higher secondary level.
- prepare achievement test in Political Science at secondary and higher secondary level.
- prepare lesson plans in Political Science for instructional purposes.
- conduct pedagogical analysis of content for teaching in the classroom.
- acquire competence in preparing tools of evaluation Political Science learning.
- acquire skills of analyzing text book in Political Science.
- understand the role of Political Science teachers.

Unit – 1 : Foundation of Teaching Political Science

[15 Hours]

- a) Concept, Nature and Scope of Political Science.
- b) History of the study of Politics.
- c) Aims and Objectives of Teaching Political Science at Higher Secondary Stage.
- d) Instruction objectives of Political Science.
- e) Correlation of Political Science with other subjects.
- f) Development of Political Science as Discipline.

Unit – 2 : Curriculum and Syllabus of Political Science at Higher Secondary Level

[16 Hours]

- a) Concept and Objective of Political Science curriculum.
- b) Characteristics of good social science curriculum.

- c) Place of Political Science in Higher Secondary Curriculum in West Bengal.
- d) Critical appraisal of Political Science at higher secondary level in West Bengal.
- e) Basic characteristics of a good text book.

Unit – 3 : Teacher and Strategies of Teaching Political Science [16 Hours]

- a) Quality of a good Political Science teacher.
- b) Approaches of teaching Political Science – inductive, deductive and heuristic.
- c) Characteristics of good Teaching Method in Political Science.
- d) Different Methods of Teaching Political Science - Lecture Method, Discussion Method, Project Method, Laboratory Method, Observation Method, Inductive and Deductive Method.
- e) Application of concept attainment and advanced organizer model in teaching Political Science.
- f) Action Research in Political Science.

Unit – 4 : Learning Resources in Teaching Political Science [16 Hours]

- a) Learning Resources in Political Science – Meaning and its function.
- b) Political Science Room, Museum, Text Book, Mass Media, Technological Media as learning resources.
- c) ICT as a learning resource in teaching Political Science.
- d) Use of local resources in teaching Political Science.

Unit – 5 : Assessment of and for Political Science Learning [16 Hours]

- a) Meaning, importance and purpose of evaluation.
- b) Concept of Comprehensive and Continuous Evaluation.
- c) Evaluation techniques in Political Science i) Unit Test, ii) Essay Type Test, iii) Objective Type Test.
- d) Review of present evaluation system of Political Science at higher secondary stage in West Bengal.
- e) Suggestions for improvement of present evaluation system.

- f) Achievement Test in Political Science – Concept, Needs and Steps for constructing Achievement Test in Political Science.

Unit – 6 : Pedagogical Knowledge

[20 Hours]

- a) Fundamental concepts of modern politics – Law : Meaning, Sources and Classification, Liberty : Definition and Safeguards, Equality and Justice : Meaning and Relationship., Democracy : Meaning and Forms (Direct and representative), Dictatorship : Meaning and Forms (Party Dictatorship, Military Dictatorship, Individual Dictatorship).
- b) Constitution – Definition and modern classification, Framing of India’s Constitution – a brief outline, The philosophy of constitution – Preamble – Salient features of the Constitution.
- c) Fundamental Rights and Duties – Rights : Meaning and Types (Civil, Social, Political and Economics) – Distention between rights and human right – U. N. declaration of human rights.
- d) International relations – Meaning of International Relation – Development of International Relation as a discipline, Some key concepts in international relations – power (meaning and components), National Interest – Meaning and its role in the making of foreign policy, Globalization – Meaning and its impact on state sovereignty.
- e) Some major political doctrines – Liberalism : Basic features, Marxism – Basic Tenets, Gandhi’s : Non-violence and Satyagraha.
- f) Local Self-government – Rural : Three Tere Panchayat Raj System composition, functions and source of income, Urban : Municipality and Corporation – composition, functions and source of income.

References :

1. Deshmukh, R. K ,Learn and Teach Political Science.
2. Nirmal, Yadav, Teaching , of Civics& Political Science
3. Roslyn ,Richard, A& Johnson, Janet Buttolph, Political Science Research Method, Prentice Hall of India PVT Limited.
4. Halder, Gourdas, Economic and Civics,Banerjee,Publishers.

5. Majumder, Smritikana, Method of Teaching Political Science, Rita, Publication.
6. Asirbatham : Political Theory, Upper India Publication House Ltd., Lucknow.
7. Joyce, B. & Weil, M. : Models of Teaching, Prentice Hall Inc., New Jersey, 1979.
8. Kochhar, S. K. : Teaching of Political Science, New York, Hutchinson Educational, 1970.
9. Pal, H. R. : Methodologies of Teaching and Training in Higher Education, New Delh, Directorate of Hindi Implementation, Delhi University, 2000.

PEDAGOGY OF COMMERCE

Total Marks : 100

Total No. of Learning Hours : 100

Objectives: After completion of the course student-teacher will be able to:

- be acquainted with general foundations and contexts of Commerce as a modern ally of human sciences.
- understand value and limitations of curriculum at H.S. stage and suggest arguments for its modification/reframing, if needed.
- be acquainted with various types of teaching strategies and motivated to select in using the appropriate ones in classroom instruction.
- be professionally competent to design pedagogical content knowledge to be imparted in actual teaching-learning systems.
- develop critical attitude to different types of learning resources and to use them for becoming an informed and effective teacher.
- understand various tools and techniques of assessment of pupil's scholastic and non-scholastic performance and develop competencies to prepare them and to use them efficiently.
- become a self- critical teacher of Commerce in modern days.

Unit – 1 : Foundation and Context of Commerce

[8 Hours]

- a) Meaning, Nature and Scope of Commerce as a school subject.
- b) Aims, Objectives and Importance of teaching Commerce at School level.
- c) Correlation of Commerce with other Subjects – Philosophy, Economics, Geography, History, Mathematics and Science.

Unit – 2 : Curriculum and Syllabus of Commerce at School Level

[7 Hours]

- a) Place of Commerce in school curriculum.
- b) Review of Commerce curriculum at Higher Secondary stage of West Bengal.

- c) Criticism of existing curriculum, Principles of curriculum construction and its evaluation.

Unit – 3 : Teacher, Techniques and Strategies for Teaching Commerce

[25 Hours]

- a) Nature, purposes and procedures of teaching Commerce by Inductive, Deductive, Lecture, Project, Discussion, Assignment, Team Teaching, Workshop, Seminar Models of Teaching (Bruner, Glaser and Ausubel).
- b) Skills in Commerce teaching – Concept, principles and types.
- c) Different approaches of Commerce teaching – Cash Book Approach, Journal Approach, Ledger Approach, Equation Approach, Final Accounts Approach and Balance Sheet Approach.
- d) Educational Tour and prepare a short report (Any one of the following) :
A reputed bank, Stock Exchange, Financial Transaction of a University or a big College and a big centre of production like TISCO, Telco, Haldia Petro Chemicals, Bandel Thermal Power Station, Texmaco and Tribeni Tissues etc.
- e) Professional qualities of an effective Commerce teacher.
- f) Role and functions of Commerce teacher as a facilitator, mentor, motivator and problem solver.
- g) Diverse Issues in Commerce Teaching – Co-curricular activities, school magazine, Commerce Club, Community resources, Current affairs, CAI, Tally, E-Commerce etc.

Unit – 4 : Learning Resources in Commerce Teaching

[20 Hours]

- a) Subject laboratory in teaching Commerce – its concepts, planning and organizing lab activities & its equipments i.e., Charts, Tables, Reference Books, Journals, Computer etc.,
- b) Text Books and Supplementary materials in Commerce – its concept, illustrations, chapterization, exercise and presentation of subject matter.
- c) Preparation and utilization of learning resources in teaching Commerce such as Teaching Aids, Audio-Visual Aids and ICT.

- d) Recent innovations in teaching Commerce – Microteaching, Programmed Learning, Simulated teaching and Team teaching.

Unit – 5 : Assessment of and for Learning Outcomes in Commerce [20 Hours]

- a) Assessment and Evaluation in context of teaching Commerce – meaning, purpose, scope, types and importance.
- b) New approaches to assessment – Question bank, Open Book examination, grading, portfolio assessment etc.
- c) Construction of preparation made achievement test – Concept and steps.
- d) Principles of preparation and different kinds of tools for evaluation in respect to Observation, Interview and Questionnaire.

Unit – 6 : Conceptual Framework of Pedagogical Knowledge [20 Hours]

- a) Taxonomy and Instructional Objectives for teaching Commerce.
- b) Lesson Plan – Concepts, features, types (approaches), formats, importance and criteria of its effectiveness.
- c) Pedagogical Analysis – meaning, purpose, scope and importance.
- d) Pedagogical Analysis on the following :
- Cash Book.
 - Recording Transactions.
 - Trial Balance.
 - Profit and Loss Account.
 - Balance Sheet.
 - Company.

References :

- a) Aggarwal, J.C., Teaching of Commerce, A Practical Approach. Vikas Publishing House Pvt. Ltd, New Delhi.
- b) Khan, M.S, Commerce Education. Sterling Publishers, New Delhi.
- c) Herrick, Cheesman, The Meaning and practice of Commercial Education. The Macmillan Company, New Delhi.

- d) Rao, Seema, Teaching of Commerce. Anmol Publications Pvt. Ltd, New Delhi
- e) Mandal, D.K, Hisabsasra O Hisabrakhan. Rita Book Agency, Kolkata.
- f) Bloom, B.S. et al., Taxonomy of Educational Objective Handbook 1, Cognitive Domain, Handbook 2, Affective Domain, London: Longman.
- g) Dale Edgar (1961). Audio-visual Methods in Teaching, New York: Holt Rinehart and Winston.
- h) Kumar, K.L. (1996). Educational Technology. New Delhi: New Age International (P) Ltd. Publishers.
- i) Mager. Robert(1962). Preparing Instructional Objectives Palo Alto, CA,.
- j) Ministry of Education- 'Education Commission' 1966, MHRD, GOI.
- k) Natarajan V and Kulshrestha S.P. (1983). Assessing Non- scholastic Aspects- Learners Behaviour, New Delhi: Association of Indian Universities.
- l) National policy on Education, 1986. Ministry of MHD, GOI.
- m) Nitko, A. J. (2001), Educational Assessment of students, Prentice Hall.
- n) Norris, N(1900). Understanding Educational Evaluation, Kogan Page.
- o) Peters, R.M., The Concept of Education, London: Routledge.
- p) Salamatullah, Education in Social Context. NCERT.
- q) Savery, J and Duffy, Thomas, M. Problem- based learning: An instructional model and its constructivist framework. Educational Technology.

PEDAGOGY OF ECONOMICS

Full Marks : 100

Total No. of Learning Hours : 100

Course Objectives : After completion of this course the student –teachers will be able to :

- understand the foundation of teaching Economics.
- review the curriculum and syllabus of Economics at secondary and higher secondary level in West Bengal.
- acquaint with different strategies for teaching Economics at secondary and higher secondary level.
- prepare achievement test in Economics at secondary and higher secondary level.
- prepare lesson plans in Economics for instructional purposes.
- conduct pedagogical analysis of content for teaching in the classroom.
- acquire competence in preparing tools of evaluation Economics learning.
- acquire skills of analyzing text book in Economics.
- understand the role of Economics teachers.

Unit – 1 : Foundation of Teaching of Economics

[15 Hours]

- a) Economics : Modern Concept
- b) Nature of Economics:
 - Science or Art.
 - Positive or Normative Science.
- c) Value of teaching Economics.
- d) Aims and objectives of teaching Economics at Higher Secondary Level in India.
- e) Co-relation between Economics and other school subjects
- f) Modern trends in teaching Economics.

Unit – 2 : Review of Curriculum and Syllabus in Economics at Higher Secondary Level [10 Hours]

- a) Place of Economics in Curriculum at Higher Secondary Level
- b) Principles of Curriculum and Syllabus of Economics at Higher Secondary Level
- c) Review of existing Syllabus of Economics at higher Secondary Level in West Bengal.

Unit – 3 : Strategies of Teaching Economics [15 Hours]

- a) Criteria of a good method of teaching of Economics.
- b) Methods of teaching Economics –
- c) Lecture Method
- d) Inductive and Deductive Method;
- e) Discussion Method
- f) Project Method
- g) Constructivism
- h) Individualized Instruction
- i) Various techniques of teaching : CAI, Field Survey etc.

Unit – 4 : Role and Quality of a Teacher and Teaching of Economics [20 Hours]

- a) Quality of a good teacher of Economics
- b) Role of Teacher in Action Research in Economics
- c) Problems Faced by Economics Teacher
- d) Learning Resources in Economics – Meaning and its Utilization in Teaching Economics.
- e) Different Types of Learning resource in teaching Economics –
 - i) Print Resource
 - ii) Audio Resource
 - iii) Visuals Resource
- f) Role of ICT in Teaching Economics

g) Importance of subject room and subject library in teaching economics

Unit – 5 : Assessment of and Assessment for Learning of Economics [20 Hours]

- a) Assessment of and for Economics learning.; concept
- b) Evaluation system in Economics – i) Unit Test, ii) Essay Type Test & Objective Type Test.
- c) Review of Present Evaluation System in Economics at Higher Secondary Stage in West Bengal.
- d) Suggestions for Improvement of Present Evaluation System.
- e) Achievement Test in Economics : Concept, Need and Steps for constructing achievement test.

Unit – 6 : Pedagogical Knowledge : [20 Hours]

- a) Taxonomy and Instructional Objectives for teaching Economics.
- b) Lesson Plan – Concepts, features, types (approaches), formats, importance and criteria of its effectiveness.
- c) Pedagogical Analysis – meaning, purpose, scope and importance.
- d) Pedagogical Analysis on the following topics :
 - Supply
 - Demand
 - Budget
 - Inflation and Deflation
 - Market and Banking System,
 - Global trends of Economy.

References

1. Yadav, Anita, Teaching of Economics, Anmol Publication Pvt., Delhi.
2. Majumder, Smritikana, Method of teaching Economics, Rita Publication.
3. Halder, Gourdas, Teaching Economics and Civics, Banerjee Publishers.

PEDAGOGY OF GEOGRAPHY

Full Marks : 100

Total No. of Learning Hours : 100

Course Objectives :

Students Teachers will be able to;

- Define meaning, nature, scope, aims and objectives of teaching Geography.
- Explain the relationship of Geography with other school subjects.
- Differentiate between methods and techniques of teaching geography.
- Perform pedagogical analysis of various concepts in Geography.
- Describe instructional planning and development of relevant material for the teaching of Geography.
- Demonstrate uses of ICT on teaching Geography.
- Describe continuous, comprehensive evaluation, diagnostics testing and remedial teaching in Geography.
- Explain importance and uses of learning resources in Geography.
- Know the use and representation of statistics and different teaching aids in teaching Geography.

Unit – 1 : Foundation of Teaching Geography

- Meaning, Nature, Scope and Historical Development of Geography and its place in Secondary School Curriculum.
- Aims and Objectives of teaching Geography in school as an integral part of general education.
- Values to be taught teaching Geography.
- Writing objectives in terms of behavioural outcome of students.
- Correlation of Geography with other school subjects.

Unit – 2 : Review of Curriculum and Syllabus of Geography at Secondary and Higher Secondary Level in West Bengal

- Principle for construction of Geography curriculum.
- Reference material – Encyclopaedia, newsletter and magazine, online and offline mode.
- Principles of framing Geography syllabus for different levels of secondary school.
- Selection of Geography textbook and critically review it as prescribed by WBBSE.
- Significance of study tour in Geography curriculum.

Unit – 3 : Learning Strategies and Methods of Teaching Geography

- Responsibilities and qualities of Geography teacher in teaching Geography.
- Role of professional organization for Geography teacher.
- Observation Method, Regional Method, Comparative Method, Assignment Method, Field trip, Lecture Method, Demonstration Method, Project Method, Dalton Method, Discussion Method, Laboratory Method, Questioning Method and Storytelling Method in different branches of Geography.
- Oral work, Written work, Drill work, Home assignment, Self Study, Supervised Study.
- Unit Planning and Lesson Planning : Principle and Procedure.

Unit – 4 : Assessment of and for Learning Geography

- Modern trend of evaluation in Geography.
- Concept of continuous and comprehensive evaluation.
- Development of test item.
- Preparation of achievement test.
- Difficulties faced by the geography teacher and suggestive measure to overcome them.
- Use of statistics and graph in teaching Geography.

Unit – 5 : Learning Resources and their Organization

- Use of local resources in teaching Geography.
- Use of different aids to teach Geography.
- Importance and organization of Geography Club.

- Importance and setting up of Geography Lab.
- Construction of low cost teaching aids.
- Preparation and use of audio visual material.
- Recreational activities of Geography club, geography fair, games, quiz and study tour.

Unit – 6 : Pedagogical Knowledge

6.1 Geotectonics and Geomorphology :

- Mountain building, seafloor spreading and volcanism with special reference to Plate Tectonics and Continents; Drift Theory.
- Classification, landform formation and drainage development in Folded and Faulted Structure.
- Weathering and its resultant landform, lithology and landform.
- Landforms under Fluvial, Glacial, Marine, Karst condition, development of landforms after Davis, Penck and King.

6.2 Bio Geography and Soil Geography :

- Definition and Nature of Biosphere. Concept of Food Chain, Food Web, Ecotone Community, Ecology, Energy Flow in Ecosystem.
- Ecosystem as a component of biosphere, Concept of Bio-Geo-Chemical Cycle, Bio Diversity, Environmental degradation and hazards.
- Definition and factors of soil formation, physical and chemical properties of soil : Texture, Structure, Colour, Moisture, pH and Organic Matter.
- Nature, Types and Conservation of Soil Erosion.

6.3 Climatology :

- Nature, Composition and Layering of the atmosphere, Concept of Heat Budget and Insulation.
- Horizontal and Vertical Distribution of Temperature, Inversion of temperature, Green house effect and importance of Ozone layer.

- General wind circulation, monsoon mechanism with reference to Jet stream, Global pressure belts.
- Air mass, Mechanism and forms of precipitation, Tropical and Mid-latitude cyclone.

6.4 Oceanography and Hydrology :

- Physical and chemical properties of ocean water, oceanic sediments (origin and classification).
- Major features of the ocean floor, coral reefs and atolls.
- Hydrological cycle, concept of run off and infiltration.
- Factors and processes controlling storage and movement of ground water.

6.5 Regional Geography of India and Social Geography :

- Relief, Drainage, Climate, River, Industry (Iron and Steel, Cotton Textile and Jute).
- Agricultural Crops, Paddy, Wheat and Tea; Coal, Bauxite, and mineral oil.
- Population : Global distribution and density, uneven growth.
- Settlement : Definition of rural and urban settlement as per census, rural settlement types, function and types of urban settlement.

6.6 Economic Geography :

- Agriculture as primary activity : intensive and extensive, different farming practices.
- Industry as secondary activity : forest based – paper; agrobased – tea, cotton and textile; Mineral based – metal-iron and steel, nonmetal-petrochemical with examples. Engineering industry – automobile with major Indian examples.
- Tertiary activities : Importance of different modes of transport, trade and communication.
- Concept of material resources and classification; Biotic resource : Forests, Fisheries; Mineral resource : iron ore, Manganese, Copper, Mica and Bauxite, Energy resource : Conventional and nonconventional with their importance.

References :

1. Macnee, E. A. : The Teaching Geography, Oxford University Press.
2. Gopril, G. H. : The Teaching of Geography; McMillan & Co. Ltd., London.
3. Verma, O. P. & Vedanagam, E., G. : Geography Teaching ; Sterling Publishers Pvt. Ltd., New Delhi
4. Rao, M., S., : Teaching of Geography; Anmol Publications
5. Kour, Balvinder : Teaching Geography; Deep & Deep Publications, New Delhi
6. Das, Madhumita, Teaching of Geography, Rita Book Agency, Kolkata
7. Dasgupta, Harsha Kumar, Teaching of Geography, Kolkata,
8. Bhattacharya, Bhujunga Bhusan, Teaching of Geography, D. N. Brothers, Kolkata.

GEOGRAPHY PRACTICAL**Full Marks – 70**

1. Map projection –Principals and classification .polar Zenithal stereographic projection, cylindrical equal area projection and Bone’s projection.
2. Surveying And Levelling – Prismatic Compass Survey (closed traverse with four sides) contouring by Dumpy level (3 radiating lines from the same point).
3. Cartogram– Bar graph, choropleth, dot, sphere diagram, climatic graph, climograph, pie graph, isobar ,isohyets, isotherm.
4. Interpretation of topographic sheet.
5. Computer basics.
6. A physico-socio-economic field study report.
7. Identification of rocks and minerals.
8. Scales.
9. Barometer, Hygrometer, Thermometer.
10. Laboratory note book & Viva Voce.

- To work out and practice strategies for teaching language skills and communication skills.
- To credit working acquaintance with the concepts of language learning assessment.
- To turn into resourceful user of different kinds of Language Test.
- To become efficient in construction of Test and Test Items.
- To register familiarity with basics of Action Research.
- To explore and experience various resources for target language learning.
- To try out various means of organizing various resources for target Language Learning.

Unit – 1 : Foundation of Teaching English

- a) Historical background and present status of English Language Teaching in India
- b) Relationship between English Language and other Indian languages
- c) Aims of objectives of teaching English
 - i) as a link language.
 - ii) as a tool for learning empowerment.
 - iii) as a library language.
 - iv) as a source for socio-cultural individual enrichment.
- d) Principles of learning English Language as a Second Language –
 - i) Developmental,
 - ii) Psychological,
 - iii) Sociological
- e) Modern Trends in Teaching English as a Second Language
- f) Theories of Language Teaching.
 - i) Ferdinand De Saussure or Influence of other language English.
 - ii) Leonard Bloomfield.
 - iii) I. A Richards
 - iv) Noam Chomsky.

Unit – 2 : Review of Existing Curriculum and Syllabus of English at Secondary and Higher Secondary Level in West Bengal

- a) Place of English as a Second Language in Curriculum at Secondary & Higher Secondary Level in West Bengal
- b) Principles of curriculum & Syllabus Framing For English Language
- c) Review of Existing Syllabus of English Language At Secondary Higher Secondary Level in West Bengal

Unit – 3 : Strategies of Teaching English

- a) Quality of a good English teacher.
- b) Criteria of a good Method of Teaching English
- c) General principles of teaching English as a second language in India.
- d) Traditional Methods of Language Teaching (Grammar Translation Method, Direct Method etc.).
- e) Functional Communicative Approach with Special Emphasis on Learning English.
 - i) Managing classroom communication.
 - ii) Patterns of Interaction.
 - iii) Managing pair & group work.
- e) Language Skills
 - i) Listening
 - ii) Reading
 - iii) Writing
 - iv) Speaking

Unit – 4 : Learning Resources in Teaching English

- a) Quality of a good English Language Teacher.
- b) Learning resources in English Language: Concept and its importance.
- c) Print Resources – Text book, Reference book.
- d) Usual Resources – Projected, Non-projected.
- e) Audio Resources – Educational Radio Programme.
- f) Language Laboratory: Importance of Language Laboratory in Teaching English.
- g) ICT & English teaching – Role of ICT in teaching English Language.

Unit – 5 : Evaluation and Assessment in Teaching English

- a) Assessment of English Language Learning.
- b) Achievement Test.
- c) Various kinds of tests of elementary concepts.
 - i) Criterion Reference Test.
 - ii) Non Reference Test.
 - iii) Aptitude Test.
 - iv) Standardized Test.
- d) Principles of constructing a English Language Test
- e) Characteristics of a good test – Reliability & Validity.
- f) Construction of a English Language question paper.

Unit – 6 : Pedagogical Knowledge

- a) Daily Drama (Unit I & II).
- b) The Solitary Reaper – William Wordsworth.
- c) Loveliest of Trees.
- d) Packing by A. E. Houseman.
- e) Narration.

References :

1. Bose, R. B. N. & Sterling, T. S. : Elements of English Rhetoric and Prosody; Chakraborty, Chatterjee Co. Ltd. Calcutta, Latest Edition.
2. Bright, J. A. & McGregor, G. P.; Teaching English as a Second Language, ELBS & Longman, London, 1978.
3. Brumfit, C. J. & Johnson, K.; The Communicative Approach to Language Teaching, OUP, Oxford, 1979.
4. Heaton, J. B. : Language Testing, Modern English Publication Ltd., Great Britain, 1982.

5. Hornby, A. S. : Oxford Advanced Learner's Dictionary of Current English, OUP, Oxford, Latest Edition.
6. Johnson, J.; The Communicative Approach to Language Teaching, OUP, Oxford, 1979.
7. Johnson, K. : Communicative Syllabus Design and Methodology, Pergamum Press, Oxford, 1982.
8. Jones, D. : English Pronouncing Dictionary, ELBS, London, Latest Edition.
9. Kemp, et al.; Designing Effective Instruction, Macmillan College Publishing Company, 1994.
10. Krashen, S.; Second Language, Acquisition and Second Langu., Learning, Pergamum Press, New York, 1979.

PEDAGOGY OF SANSKRIT

Full Marks : 100

Total No. of Learning Hours : 100

Objectives : The objectives of the course are as :

- to understand the basic foundations of the Sanskrit language.
- to find out and establish the relationship between Sanskrit and other Indian languages.
- to be accustomed with the various teaching methods and approaches Sanskrit language teaching.

- to prepare them in language learning assessment.
- to evaluate instructional materials in Sanskrit language.

Unit – 1 : Foundation of Teaching Sanskrit Language [10 Hours]

- a) Historical background and present status of Sanskrit Language Teaching in India.
- b) Relationship between Sanskrit Language and other Indian languages.
- c) Aims and objectives of teaching Sanskrit Language at Secondary level.
- d) Principles of learning Sanskrit Language.

Unit – 2 : Curriculum and Syllabus of Sanskrit Language at Secondary Level [10 Hours]

- a) Place of Sanskrit Language in Secondary curriculum in West Bengal.
- b) Principles of framing the Sanskrit Language syllabus.
- c) Sanskrit Language and allied subjects : Bengali, English, literature, History & Philosophy.
- d) Evaluation of Sanskrit Language at Secondary level in W.B.

Unit – 3 : Strategies for Teaching Sanskrit Language [20 Hours]

- a) Pedagogical Analysis on
 - i) Rationales for selecting the topic / unit.
 - ii) Division into sub-units.
 - iii) Learner's previous experience.
 - iv) Behavioural / instructional objectives.
 - v) Teaching strategies
 - vi) Use of writing board
 - vii) Probable questions/answers
 - viii) Criterion Reference Test
- b) Strategies to be practised through Micro-teaching.
- c) Use of CAT model and its implication in teaching Sanskrit Language.
- d) Lesson Plan.

Unit – 4 : Approaches of Teaching Sanskrit Language**[15 Hours]**

- a) Different methods of teaching
 - i) Direct Method
 - ii) Traditional Method
 - iii) Translation Method
 - iv) Text book method
 - v) Bhandarkar Method
- b) Different approaches of teaching
 - i) Oral work
 - ii) Use of Dictionary
 - iii) Reference Books
 - iv) Dramatization & Play-way method
 - v) Group teaching
- c) Different ways of teaching in different content area
 - i) Reading & writing Devanagari script
 - ii) Prose
 - iii) Poetry
 - iv) Grammar
 - v) Composition
 - vi) Spelling mistakes

Unit – 5 : Sanskrit Language Teacher**[15 Hours]**

- a) Quality of a good Sanskrit Language Teacher
- b) Learning Resources in Teaching Sanskrit Language
- c) Role of Sanskrit Language Teaching in managing controversial issues
- d) Problems faced by a Sanskrit Language teacher

Unit – 6 : Pedagogical Knowledge**[30 Hours]**

- a) Samudrabedanam (Ramayanam, DwabinshaSarga, Judhakandam), Sloke – 1, 5 - 13, 17, 25 – 29, Total 16 Slokas.

- b) Sangmanasam
- c) History of Sanskrit Literature : Vedic – Samhitas, Upanisadas, Vedangas. Ramayana and Mahabharata, Mahakavyas (Upto 12th Century A. D.), Specially – AswaGhosh, Kalidasa, Varbi, Magh, Shree Harsa, Vatti, Kumar Das. Dramatic Literature (upto 12th century A. D.), Vasa, Kalidasa, Vavabhuti, Narrative Literature (Panchatantra, Hitopadesa&Kathasaritsagar), Sudraka, Rajshekhar, BisakhDutta, Harsabardhan, Lyric Poems : Meghdutta of Kalidasa (25 Sloke), Gitagobindam of Joydev, Prose Literature : Dandin and Banabhatta.
- d) Grammar : Declension (Special stress on stems ending in at, an, as, Sarvanamas, Numerals – one to eight), Conjugation (Special stress on the groups Bhavadi, Adadi, Rudhadi, Hvadi), Sandhi (Specially – VisargaSandhi), Samasa, Krit-pratyayam, Taddhitapratyaya, Vidhanam, Atmanepada-Vidhanam, Parasmaipada-Vidhanam, Sananta, Yananta, Nijanta, Stripratayaya, correction of error, case-ending.
- e) Translation from mother tongue into Sanskrit.
- f) Comprehension test strictly from Panchatrantra and Hitopadesa.

References :

1. Sanaskrita Sikshar Pathanirdesh : Dr. Pranab Bandopadhyay.
2. Sanaskrita Sikshana Paddhati : Dr. Pampa Chattaraj.
3. Janashikshaya and Sanaskrita : Dr. Dhyanesh Narayana Chakraborty.
4. Patel, R. N. (2004) : Educational Evaluation – Theory & Practices, Himalaya Publishing House, Mumbai.
5. Sharma R. A. (1983) : Technology of Teaching, International Publishing House, Meerut.

PEDAGOGY OF PHYSICAL SCIENCE

Full Marks : 100

Total No. of Learning Hours : 100

Course Objectives :

- To enable the student teacher understand the nature and characteristics of Physical Science.
- To understand the nature of learning of Physical Science.
- To acquaint the student teacher about strategies of teaching .
- To enable learners teaching process in Physical Science.

- To acquaint the student teacher about different kinds of assessment procedure for Physical Science learning.
- To develop the ability to prepare different teaching learning resources in Physical Science.

Unit – 1 : Foundation of Teaching Physical Science

- a) Nature and Scope of Physical Science.
- b) Aims & objectives of teaching Physical Science (Instructional Objectives).
- c) Correlation with other subjects.
- d) Curriculum of Physical Science at school level and its reforms in the light of National and State level

Unit – 2 : Strategies for Teaching Physical Science

- a) Inductive & Deductive
- b) Discovery
- c) Problem solving
- d) Demonstration
- e) Project
- f) Model of Teaching- Bruner & Ausubel

Unit – 3 : Learning Resources of Teaching Physical Science

- a) Improvised Apparatus
- b) Projected and Non-projected Teaching Aids – Blackboard, Chart, Model, Model, OHP and PowerPoint.
- c) Physical Science Laboratory – Planning & Organizations.
- d) Science Exhibition, Science Club, Science Quiz, Science Bulletin and CAI.
- e) Criteria of a good Physical Science Textbook.

Unit – 4 : Assessment of Learning

- a) Different strategies of evaluation in Physical Science – Formative, Summative, CRT, NRT and Diagnostic.

b) Achievement Test Construction.

Unit – 5 : Quality and Role of a Physical Science Teacher

- Characteristics of a Physical Science Teacher.
- Role and responsibilities of Physical Science Teacher.
- Lesson Planning.

Unit – 6 : Pedagogical Knowledge

6.1 Physics :

- a) Motion, force, work & energy, displacement motion and its types, speed velocity and acceleration, force – magnitude and direction.
- b) Heat as energy, temperature, transfer of heat thermal expansion and change of state.
- c) Newton's Law, qualitative concept of relativity, universal law of gravitation, Kepler's.
- d) Simple pendulum, restoring force, SHM, displacement, amplitude, frequency time period, expression for time period, wave motion, propagation of through a medium, longitudinal and transverse waves length, relation between speed, frequency and wave length, transfer of transverse waves length, relation between speed, frequency and wave length, transfer of energy and momentum in wave propagation, periodic motion, sound waves and their nature.
- e) Light, image formation by spherical mirrors and lenses, telescope, microscope, defects of vision and correction perception of colour, colour blindness, composition of white light, wavelength and colour of light.
- f) Modern Physics : Semi-conductor

6.2 Chemistry :

- a) Introduction to chemical relations, types of chemical reaction combination decomposition displacement reactions by performing actual classroom activities related to these reactions (wherever possible).

- b) Introduction to the electronic concept of oxidation-reduction, oxidation number and redox reaction by demonstrating different redox reactions in the class and discussing their chemical equations.
- c) Endothermic and exothermic reactions by performing the activities of dissolution of any NH_4Cl in water, evaporation of water, spirit (endothermic) and adding water to quick lime, dissolution of NaOH in water, H_2SO_4 in water and neutralization reaction (exothermic) of aq. NaOH by aq. HCl . Concept of rate of reaction, factors affecting the rate-effect of (a) Concentration, (b) Temperature, (c) Pressure and (d) Catalyst.
- d) Periodic Classification of Elements. Coordination Compound : nomenclature and isomerism. Valence bond and Crystal field theory, Colour and magnetic properties of transition metal compound.
- e) Organic Chemistry : alkanes, alkenes, alkyne, aromatic compounds – aromaticity, orientation, structures and properties of Benzene and Naphthalene.
- f) Applied Chemistry : Polymer, dye, resin.

PRACTICAL IN PHYSICAL SCIENCE

During practical final examination the students will have option to perform practical either in Physics or in Chemistry.

Distribution of Marks :

Viva – 15

Lab Note Book – 15

Experiment – 40 (20 + 20)

Physics

Group – A

1. To determine the volume and sp. gravity of a rectangular parralleopiped or a cylinder with the help of slide calipers.
2. To determine the sp. gravity of a given liquid by the sp. gr. bottle.
3. To verify the laws of reflection of light by ray-tracing with pins and to show that the object distance is equal to the image distance (at least three different rays are to be taken and rays to be traced with pins).
4. To verify the laws of refraction of light (at least three different rays are to be taken).
5. To determine the focal length of a concave mirror by the method of coincidence.
6. To verify Ohm's law using ammeter and voltmeter.

Group – B

1. To determine the sp. gr. of a granular solid insoluble in water with the help of a sp. gr. bottle.
2. To draw $L-T^2$ curve by determining time periods with the help of a simple pendulum for a least five different length of oscillations and to verify the proportionality of L and T^2 .
3. To determine the focal length of a given convex lens by U-V method using pins or a luminous object (at least five different object distances should be used).
4. To trace magnetic lines of force due to a bar magnet when its north pole is pointing north.
5. To verify the laws of combination of two resistances (a) in a series and (b) in parallel by using a P. O. Box.
6. To determine the value of an unknown resistance with the help of a meter bridge.

Chemistry

1. Qualitative analysis of inorganic mixture containing not more than four radicals from the following by systematic tests.

Basic radicals : Pb^{+2} , Cu^{+2} , $Fe^{+2, +3}$, Al^{+3} , Zn^{+3} , Ca^{+2} , Mg^{+2} , Xe^{+2} , Ba^{+2} , K^{+1} , NH_4^{+1} , Ni^{+2} , Co^{+2}

Acid radicals : Cl^- , Br^- , I^- , NO_3^- , S^{-2} , SO_4^{-2}

2. Qualitative analysis of single solid organic compound.

- a) N, Cl, I, Br by chemical tests.
- b) Solubility test and solubility classification.

3) Determination of the following functional groups by systematic chemical tests

HO_2 , NH_2 , CO NH_2 , CONHAr , OH , Carbonyl (Aldehyde and Ketone)
– COOH , COOR , Olefinic.

4) Determination of the strength of an unknown acid or alkali solution with the help of standard alkali or acid solution using phenolphthalein or methyl orange as indicator. The following acids and bases are to be given for determination of the strength of solutions H_2SO_4 , HCl , NaOH and Na_2CO_2 solutions.

PEDAGOGY OF LIFE SCIENCE

Full Marks : 100

Total No. of Learning Hours : 100

Course Objectives :

- To enable the student teacher understand the nature and characteristics of Life Science.
- To understand the nature of learning of Life Science.
- To acquaint the student teacher about strategies of teaching .
- To enable learners teaching process in Life Science.

- To acquaint the student teacher about different kinds of assessment procedure for Life Science learning.
- To develop the ability to prepare different teaching learning resources in Life Science.

Unit – 1 : Foundation of Teaching Life Science

10 Hours

- Nature of Scope of Life Science.
- Aims and Objectives of teaching Life Science.
- Values of teaching Life Science.

Unit – 2 : Strategies of Teaching Life Science

20 Hours

- Concepts, features, steps, importance, limitations and comparison of different methods – Lecture method, Demonstration method, Heuristic method, Problem solving method / Project method / Project method, Laboratory method, Programmed Learning and CAI.
- Development of core-teaching skills through simulated micro-teaching.
- Lesson Planning.

Unit – 3 : Learning Resources in Teaching Life Science

15 Hours

- Meaning, types and importance of learning resource.
- Qualities of good Life Science text books.
- Teaching aids in Life Science – Specimens, Charts, Models, Aquarium, Herbarium, Vivarium and Museum, Audio-Visual aids – Epidiascope, Projector, Computer, Flannel board.
- Principles and importance of using teaching aids in Life Science teaching.
- Improvisation of teaching aids.
- Life Science laboratory – organization, equipments and importance.

Unit – 4 : Co-curricular Activities in Teaching Life Science

10 Hours

- Life Science Fair and Exhibition.
- Field Trips / Excursion.

- c) Life Science Magazine.
- d) Life Science Club.
- e) Bulletin Board.
- f) Quiz

Unit – 5 : Assessment of Life Science Learning

15 Hours

- a) Concepts of assessment and evaluation.
- b) Concept of Achievement Test and identification of test items under various criteria like knowledge, understanding, application and skill along with table of specification.
- c) Assessment of laboratory practical activities.

Unit – 6 : Pedagogical Knowledge

30 Hours

- a) Concepts and methods of Pedagogical analysis.
- b) Questions to be set to assess the pedagogical knowledge of the content from Class VII to XII on the following items :
 - i) Breaking of unit into sub-units with no. of periods
 - ii) Previous knowledge
 - iii) Instructional objectives in behavioural terms.
 - iv) Sub-unit wise concepts.
 - v) Teaching-learning strategies.
 - a) Teaching techniques.
 - b) Application of teaching aids.
 - c) Learning Strategies (Students' activities).
 - d) Probing questioning.
 - e) Board work
 - f) Concept Mapping.
 - vi) Blue Print for Criterion Referenced Test Items
 - vii) Criterion Referenced Test Items for 20 marks.

Class – VII :

- i) Seed and germination.
- ii) Flower – Reproduction organ of plant.
- iii) Organ system of plant.

Class – VIII :

- i) Unit of Life
- ii) Plant and animal tissue.
- iii) Circulatory system of man.

Class – IX :

- i) Photosynthesis.
- ii) Respiration.
- iii) Ecosystem.

Class – X :

- i) Cell Division.
- ii) Nervous System.
- iii) Excretory System.

Class – XI :

- i) Diversity of Life.
- ii) Animal Kingdom.
- iii) Biomolecules.

References :

1. Teaching of Life Science by Mrs. K. Yadav.
2. Teaching of Science – Today and Tomorrow by N. N. Siddiqi, M. M. Siddiqi
3. Teaching of Science by R. C. Sharma.
4. Human Physiology by C. C. Chatterjee.
5. Biology of Animals by Ganguli, Sinha and Adhikari.
6. College Botany by Ganguli, Das and Dutta.

7. An Introduction to Biology by Sanyal and Chatterjee.

PRACTICAL ACTIVITIES

Botany :

1. Observation typical plant cells from onion scale leaves.
2. Section cutting of monocot and dicot roots and stems.
3. Dissection of regular and irregular flowers.

Zoology :

1. Identification of museum specimens – Microscopic and Macroscopic specimens, bones of toad and guinea pig.

Physiology :

1. Preparation of human blood film.
2. Preparation of slide of squamous epithelium.
3. Measurement of blood pressure.
4. Harvard steps PFI.

PEDAGOGY OF MATHEMATICS

Full Marks : 100

Total No. of Learning Hours : 100

Objectives :

- To enable the student teacher understand the nature and characteristics of Mathematics.
- To understand the nature of learning of Mathematics.
- To acquaint the student teacher about strategies of teaching .
- To enable the student teacher about the teaching process in Mathematics.

- To acquaint the student teacher about different kinds of assessment procedure for mathematics learning.
- To develop the ability to prepare different teaching learning resources in mathematics.

Unit – 1 : Foundation of Mathematics Education

- a) Meaning and Definitions of Mathematics
- b) Nature of Mathematics.
- c) Perspective on the psychology of learning and teaching of mathematics – constructivism and a Vygotskyan perspective, Cognitive guided instruction, Cognitive apprenticeship, Critical and realistic mathematics education.
- d) Rationale, objectives, principles, designs and materials produced in the recent curricular reforms at the National and state levels and their critical appraisal.
- e) Analysis of the aims and general objectives of teaching mathematics vis-a-vis the objectives of secondary education.
- f) Correlation and Integration with different branches of Mathematics and other science related subjects.

Unit – 2 : Strategies for Teaching of Mathematics

- a) Meaning and aspects of mathematical concepts.
- b) Concept Formation and Concept Assimilation.
- c) Mores in teaching a concept – defining, stating necessary and / or sufficient condition, giving example with / without and / or sufficient condition, giving example with / without a reason, comparing and contrasting, giving counter examples etc.
- d) Use of Concept Attachment and Advance Organiser Models, Planning and implementation of strategies in teaching a concept.
- e) Learning by Discovery : Nature and purpose of learning by discovery – Inductive – Deductive guided discovery strategies, Maxims for planning and conducting discovery strategies; planning of strategies involving either induction or deduction or both for constructing knowledge.

- f) Identification of slow learners in mathematics and remedial measures.
- g) Identification and nurture of talented students in Mathematics.

Unit – 3 : Teaching Process in Mathematics

- a) Problem-solving approach – definition, characteristics, steps, importance and limitations.
- b) Analysis & Synthesis approach – definition, characteristics, procedure, importance, limitation and comparison between them.
- c) Kinds of proof – direct proof, mathematical induction, proof by contradiction, proof by cases, the contra positive and disproof by counter example.
- d) Project Method – Definition, characteristics, importance and limitations.

Unit – 4 : Learning Resources in Mathematics

- a) Learning types, functions, preparation and utilization of learning resources in Mathematics – Teaching Aids, Textbooks, Models, Calculations and Computers.
- b) Mathematics Club – Aims, Suggested activities, organisation.
- c) Mathematics Laboratory – Importance, Physical Infrastructure and Materials Planning and organising lab activities.

Unit – 5 : Assessment of Mathematics Learning

- a) Concept of assessment in mathematics learning.
- b) Diagnostic tests and its remedial teaching strategies.
- c) Construction of Unit test – design, blue print; Item construction; marking scheme, question wise analysis.
- d) Construction of Mathematics question paper including general instruction with nature of options and overall coverage, and marking scheme.

Unit – 6 : Pedagogical Knowledge

- a) Arithmetic : Ratio and Proportion, Time and Work, Mixture.
- b) Algebra : Sets, Relations and Functions and Graphs, Systems of linear equations and their graphical solutions, Quadratic equations, Theory of Indices and

Logarithms, Complex Numbers, Arithmetic Progression (A. P.), Geometric Progression (G. P.), Matrices, Determinants.

- c) Co-ordinate Geometry : Straight lines of two-dimensional Geometry.
- d) Trigonometry : Trigonometric ratios, Simple Identities, and solution of simple trigonometric equations.
- e) Calculus : Limits and Derivative, Continuity and Differentiability, Application of Derivatives, Indefinite Integrals and Definite Integrals (H. S.).
- f) Vector : Scalar (Dot) Product of Vectors, Projection of a Vector on a line, Vector (Cross) Product of Vectors.

References :

1. Nickson, Marilyn (2007), "Teaching and Learning Mathematics : A Guide to Recent Research and its Applications", NY : Continuum.
2. Kulshrestha, A. K. (2005). "Teaching Mathematics", 3rd Edition, R. Lall Book Depot., Meerut.
3. Patel, R. N. (2004), "Educational Evaluation Theory & Practice", Himalaya Publishing House, Mumbai.
4. Grouws, D. A. (ed.) (1992), "Handbook of Research on Mathematics", Anmol Pub Pvt. Ltd. New Delhi.
5. Siddhu, K. S. (1990)., "Teaching Mathematics", Sterling Pub., New Delhi.
6. Kumar, S. & Ratnalikar, D. N. (2005). "Teaching of Mathematics", Anmol Pub. Pvt. Ltd., New Delhi.
7. Marshal, S P. (1995). "Schemes in Problem-solving", Cambridge University Press, New York.
8. Malone, J. & Taylor, P. (eds.) (1993). "Constructivist Interpretations of Teaching and Learning Mathematics", Curtin University of Technology, Perth.
9. Elements of Secondary Additional Mathematics – P. Jana and A. Mitra.
10. Higher Secondary Mathematics – Ghosh and Chakraborty.
11. Higher Secondary Mathematics – Bhanja & Ganguly.
12. Higher Secondary Mathematics – Maiti and Ghosh.
13. Differential Calculus – Das & Mukherjee.

14. Integral Calculus – Das & Mukherjee.
15. Higher Algebra – Berner & Child.
16. Advance Higher Algebra – Ghosh Chakraborty.
17. Modern Algebra – Quaji Zammiruddin.

PEDAGOGY OF WORK EDUCATION

Full Marks : 100

Total No. of Learning Hours : 100

Objectives :

- a) To understand the nature and concept of Philosophy of Work Education.
- b) To acquire the basic skills in Work Education.
- c) To acquire mastery over development and use of tools of evaluation.
- d) To understand the different areas of work experience.

Unit – 1 : Foundations of Teaching Work Education

- a) Aims, Objectives and significance of teaching Work Education at secondary level.

- b) Nature and scope of Work Education.
- c) Work Education and its inter-disciplinary approach with other school subjects
- d) Bases of Work Education – Psychological, Philosophical, Historical, Sociological, Cultural and Economic
- e) Importance of Work Education in our daily life.

Unit – 2 : Review of Curriculum and Syllabus of Work Education at Secondary Level

- a) Principles of frame-work of curriculum and syllabus of Work Education subjects.
- b) Justification of present syllabus of Work Education subject prescribed by WBBSE.
 - i) Exposure stage.
 - ii) Involvement stage.
- c) Assess the curriculum and syllabus of Work Education of CBSE and ICSE Board of secondary level.
- d) Criteria of selection of activities of Work Education in schools of rural and urban area.

Unit –3 : Strategies of Teaching Work Education

- a) Inductive and Deductive approach.
- b) Methods.
 - i) Lecture-cum-Demonstration approach.
 - ii) Laboratory Method.
 - iii) Discussion Method.
 - iv) Problem solving Method.
 - v) Project Method.

Unit – 4 : Qualities of Work Education Teacher

- a) Attribute and Responsibilities.
- b) Need for subject orientation.
- c) Professional ethics.

- d) Dynamic activities towards productive and creative works including involvement in society.
- e) Upgradation of knowledge about vocational trends.

Unit – 5 : Learning Resources and Assessment of Learning Outcome of Work Education

- a) Work Education Laboratory.
- b) Home (students residence) outside the campus.
- c) Budgeting and Planning.
- d) Time table allocation.
- e) Materials, tools and equipments.
- f) Organisation co-ordination of different agencies monitoring network through resources centre – problems thereof.
- g) Visit to local productive or creative centre.
- h) Assessment of daily / weekly practical activities and yearly seasonal activities of Work Education.
- i) Evaluation process of Work Education.

Unit – 6 : Complete Frame-work of Pedagogy Knowledge of Work Education

- a) Division of the units and suitable sub-units.
- b) Selection of one sub-unit :
 - i) Nature of subject and previous concept.
 - ii) Instructional objective.
 - iii) Concept of content of sub-unit.
 - iv) Teaching strategies demonstration for practical activities.
 - v) Materials, tools and equipments.
 - vi) Teaching aids and mode of use.
 - vii) Involvement in practical.
 - viii) Observations of activities.
 - ix) Critical evaluation.

Practical of Work Education **FM – 50**
(Group – A and any one unit from Group – B)

Group – A

Unit – 1 : Agricultural Activities (any two)

- i) Growing and care of indoor plants.
- ii) Growing and care of flowering plants in pot.
- iii) Kitchen gardening.
- iv) Arrange and care Bonsai.
- v) Cultivation of simple medicinal plants.

Unit – 2 : Production and Creative Activities

- i) Book / Khata binding, cover-file, pocket-file, various types of envelopes, decorative letter rack, fancy paper bag.
- ii) Modelling with – clay, plasticine and plaster (any one).
- iii) Relief-work with –clay or plaster.
- iv) Creative work with paper and paper-pulp – Greeting cards, Badge-making, Mask-making.
- v) Creative candle making.
- vi) Decorative art pieces – Glass painting, egg-cell mosaic, sara painting, decorative wall plate (any two).

Unit – 3 : Textile Design

- a) Apparel designing and Fabric items for decoration. (**any one**)
 - i) Weaving
 - ii) Knitting
 - iii) Embroidery
 - iv) Making simple garments.
 - v) Making fabric items for interior decoration.
- b) Designing on cloth

- i) Fabric Painting
- ii) Tie & Dye
- iii) Batik-print
- iv) Block-print or stencilling.

Unit – 4 : Fruit and Vegetable Products and Preservation (any one) :

- i) Pickle for short-time use.
- ii) Pickle for Long-time use.
- iii) Fruit-processing – preparation of jams.
- iv) Fruit processing – preparation of jellies.

Group – B (Any one from Group B)

Unit – 5 : Chemical Project (any one)

- i) Soap making
- ii) Phenyl making
- iii) Chalk making

Unit – 6 : Garnishing and Servicing of Food (any one)

- i) Veg. and Non-veg. Break-fast.
- ii) Heavy tea and snacks.

Unit – 7 : Silk-screen Printing(any one)

- i) Producing Small sticker for awareness
- ii) Simple card design.

Unit – 8 : Workshop Activities (any one)

- i) Wood work.
- ii) Household Electrical Gadgets fitting and repairing.
- iii) Elementary electronics repairing – Radio, Tape-recorder, T. V.

PEDAGOGY OF ART EDUCATION

Full Marks : 100

Total No. of Learning Hours : 100

Objectives :

- Understand nature & concept of teaching Visual Art.
- Understand Beauty of nature and Beauty of Art.
- Understand the Methodology of Teaching and pedagogy of Content of Art Education.
- Understand the different area of Art Education and Work experience.

- To enable art educators to develop good craftsmanship and individual skill to tackle different methodologies masterly.
- To help bridging all subject close together through visual implications.
- To learn about evaluation, exposition, exhibition, publicity, making of art objects under the teaching Art education.

Unit – 1 : Foundation of Teaching Art Education

- a) Aims and objectives and significance of teaching Art Education, Art & Craft at Secondary and Higher Secondary Level.
- b) Art Education and its inter-disciplinary relation with other school subjects
- c) Different phases of development of Art & Artists of India any five important phases and artists.
- d) Important Western artists and their works of Arts. Brief introduction of any five important phases and artists.
- e) Important activities in connection with art design, decoration for society & individual life and teaching and learning of Art Education.

Unit – 2 : Review of Curriculum and Syllabus of Art Education at Secondary and Higher Secondary Level

- a) Principles of frame-work of curriculum and syllabus of Art Education for Secondary and Higher Secondary Level.
- b) Place of Art Education in National Curriculum for Secondary & Higher Secondary level – 2010.
- c) Justification of present syllabus of Art & Craft of WBBSE and WBCHSE
- d) Assess the curriculum and syllabus of Art Education of CBSE, ICSE and NIOS for secondary and higher secondary level.
- e) Place of Art Education in co-curricular activities.

Unit – 3 : Strategies of Teaching Art Education

- a) Inductive and Deductive Approach
- b) Method

- i) Lecture-cum-Demonstration Method.
- ii) Laboratory (Studio or Workshop) Method.
- iii) Project Method.

Unit – 4 : Qualities of Art Education Teacher

- a) Attribute and Responsibilities.
- b) Need for subject orientation.
- c) Professional ethics
- d) Artistic activities through nature and environment.
- e) Eye-training for observation of art & craft works.
- f) Upgradation of knowledge about art & craft works and their creators and exhibitions etc.

Unit – 5 : Learning Resources and Assessment of Learning Outcome of Art Education

- a) Art Education Studio-cum-Workshop
- b) Students residence, locality & nature.
- c) Budgeting and Planning.
- d) Time table allocation.
- e) Materials, tools & equipments.
- f) Artistic and cultural co-ordination with students of different schools through art exhibition art completion art workshop.
- g) Visit to local artist's studio, museum, gallery and art-collection.
- h) Assessment of daily / weekly art works and yearly sessional activities of Art Education.
- i) Evaluation process of Art Education.

Unit – 6 : Complete Frame-work of Pedagogy Knowledge of Art Education

- a) Division of the units and suitable sub-units.
- b) Selection of one sub-unit :
 - i) Nature of one sub-unit :

- ii) Instructional objective.
- iii) Concepts of content of sub-unit.
- iv) Teaching strategies demonstration for handling materials of Art Works (Practical activities).
- v) Materials, tools & equipments
- vi) Teaching aids and mode of use.
- vii) Involvement in artistic and creative works (practical).
- viii) Observation to artistic creative activities.
- ix) Evaluation & Appreciation.

References:

- 1) Indian Art-Percy Brown
- 2) meaning of ART-Herbert Read
- 3) Education through Art-Herbert Read
- 4) Bharat Silpa- Nirmal Kumar Ghosh
- 5) Silpa-o -Silpe- Krishnalal Das, vol-1 to III
- 6) Sikshay Silper Sthan- Ajay Kumar Hazra
- 7) A concise History of Indian Art- Roy C. Craven
- 8) Art Education: Teacher Hand Book For V to VIII-R. K. Chopra, NCERT.
- 9) Child Art –W. Viola.

- 10) Indian Art& Architecture- V. Roland
- 11) History of World Art –E.M.WINGERT, P.J.WINGERT, MCHLER.
- 12) Kala Shiksha Sikshan-Radha Prakashan Mandir, Ahra-2

Practical of Art Education FM – 50
(Group – A and any one unit from Group – B)

Group – A

Unit – 1 : Drawing and Painting

- a) Line drawing and drawing with light and shade.
- b) Representational Drawing and painting from nature – plants, foliage, flowers, birds and animals etc. (medium – pencil, pen & ink, crayon, water-colour- any two medium)
- c) Perspective Drawing.

- d) Still-life study (medium – pencil, pen & ink, crayon, water colour, oil-colour, acrylic colour – any two medium).
- e) Composition Painting – (Crayon, Water-colour, Oil-colour – any two medium).

Unit – 2 : Print Making

- a) Arrangement printing with leaf, finger, cork, stamps, cardboard, jute and bandage texture.
- b) Monotype surface-printing.
- c) Thread-print.
- d) Stencil-print, spray-print.
- e) Simple block making and print – Potato-cut-print, vegetable print with lady finger, Lino-cut print, mono-print.

Unit – 3 : Designing on Different Surfaces (Any two)

- a) Creative pictorial or geometrical design – Water colour / Pastel colour.
- b) Surface design – Floor decoration (Alpana, Rangoli), Wall decoration.
- c) Poster-Design (Monochrome / multi-colour).
- d) Textile-Design – Garment design with fabric colour, designing with potato-cut block and stenciling on garments and other cloths.
- e) Simple lettering for communication, calligraphy.

Unit – 4 : Creative Art with Paper (Any two)

- a) Paper-cutting, Assemble-art with Photo-pasting.
- b) Collage – Simple and Creative.
- c) Collecting and arranging rare photographs, photoprint on various theme.

Group – B (Any one from Group B)

Unit – 5 : Pot-decoration

- a) Decoration – Clay-pot, Vash
- b) Decoration – Glass-pot, Ceramic and fiber pot.

Unit – 6 : Sculpture & Modeling

- a) Making simple objects and figures with clay, plaster, plasticine and wood (any one medium).

Unit – 7 : Facsimile Drawing

- a) Facsimile drawing with pencil or pen and ink.

Unit – 8 : Simple Computer Art

- a) Computer generated figurative drawing.
- b) Computer generated figurative or non-figurative painting.

EVALUATION SYSTEM OF B. ED. CURRICULUM

I. For Foundation & Pedagogy (Course – 01 to 05) 500 marks

- 6 questions (from 9 options) × 2 marks= 12 marks (at least one question from each unit)
- 3 questions (from 6 options) × 6 marks= 18 marks (1 question from each unit)
- 7 questions (from 10 options) × 10 marks=70 marks (at least 1 question from each unit)

II. For Pedagogical knowledge of school subjects (Course – 06 to 07) 200 Marks

- 10 questions (from 12 options) × 2 marks=20 (2 questions from each unit)

- 6 questions (from 8 options) \times 10 marks= 60 (at least 1 question from each unit)
- 1 question from pedagogical knowledge (unit-6) \times 20 marks= 20 marks
(Question may be divided into parts with division of marks).

In case of question containing 2 marks answer will be within 30 words :

In case of question containing 6 marks answer will be within 150 words :

In case of question containing 10 marks answer will be within 300 words :

Questions are to be set in English only except i) Bengali, Sanskrit (School subjects) and ii) Language proficiency.

III. Institution and School based Practicum 300 Marks

- Simulated micro-teaching with peer observation (for two school based subjects = (25+25) = 50 marks (Assessment by Internal-Subject Teacher)
- Internship at school= 50 (25 for each school subject).
- Final Teaching =100+100=200 marks (joint assessment by external and internal examiners).

IV. Pedagogical Practicum 300 Marks

Pedagogical Analysis for two school subjects (50 x 2 = 100 Marks)

- Preparation of Pedagogical Analysis - 30 marks
- 3 pedagogical analyses during session (one notebook to be submitted on the day of examination) = 10 marks
- Viva (10)

(joint assessment by external and internal teacher).

Lab based Practical (100 marks for first method).

- Notebook (sessional) = 20 marks
- Two Experiments (30 + 30) = 60 marks
- Viva = 20 marks.
- (joint assessment by external and internal subject teacher).

Or

Non Lab based Practical-100marks for first method.

D2. Lab/ non lab based

Activity -1. Project **50 marks**

- Project Report – 40 marks
- Viva-10

Activity -2-Sessional Activity/Text Book Analysis **50 marks**

- Report – 40 marks
- Viva-10

(Joint assessment by external and internal teacher).

D3.Achievement test construction on school subject as first method (60 marks)

- Prepare a notebook (sessional) (10)
- Prepare an **Achievement** test up to fifty marks (40)
- Viva (10)

D4. Preparation of TLM on School Subject as first Method(40 marks)

- Preparation of TLM during Examination – 30 marks
- Viva – 10 marks

(All components under D will be evaluated jointly by Internal & External)

V. Psychological Testing – 20 marks (Any two testing by standardized test on the following areas:

Intelligence, Personality, Motivation, Interest, Attitude, Learning Style, Test Anxiety, Psychological Stress).

Sessional (Preparation of Practical Notebook) -10 marks

Viva – 10 marks

(Joint assessment by external and internal examiner)

F. ICT Skill Development **30 marks**

Sessional – 20 marks

Viva – 10 marks

(Joint assessment by external and internal examiner)

G. Language Proficiency

50 marks

- Terminal written examination.
- 15 MCQ × 2 marks
- 4 SAQ × 5 marks [Answer will be not more than 100 words and should have “**expressive**” and “**reflective**” proficiency of the learner].

N. B. Questions are to be set to test i) Proficiency in English, and ii) Proficiency in Bengali. The choice will be open to the candidate.