APPENDIX G

UTKAL UNIVERSITY
COURSES OF STUDIES
BACHELOR OF EDUCATION

The B.Ed. (Secondary) shall consist of the following papers:

Paper—I  Teacher and Education in the Emerging Indian Society  100 marks

Paper—II  Educational Psychology  100 marks

Paper—III  Secondary School Organisation, Guidance and Educational Technology  100 marks

Paper—IV  Fundamental of Teaching  100 marks

Paper—V  (a)  Health, Physical Education and Recreation
             Art and Aesthetic Education  50 marks

             (b)  Integrated Education for children with special needs  50 marks

Paper—VI & VII  Methods of Teaching two special subjects for Science Students only:—

             General Science (Compulsory) and any one of the following:—

             (1)  Mathematics

             (2)  Geography

             (3)  Home Science

             (4)  Physical Science

             (5)  Biological Science
Content-cum-Methods of Teaching General Science

Unit - 1

General Science- its meaning, importance and place in school curriculum, Aims and Objectives of teaching General Science and Elective Sciences. General and Specific Instructional Objectives, Organisation of Science Content-Disciplinary approach an Integrated approach.

Unit - 2

Methods of Teaching General Science - Lecture-cum-discussion method, Demonstration method, laboratory method, Observation method, Discovery method and project method, Formulation of Instructional Objectives - Lesson planning, Unit planning, Improvisation of teaching aids in General Science.

Unit - 3

(a) Evaluation of General Science - Development of Objective based and objective type achievement tests in Science.

(b) Science syllabus and text-books, Science Laboratory, Science exhibition, Science Club.

Unit - 4

Force and its relation to motion

(a) Work and energy, Newton's Laws of motion, Kinetic and Potential energy, Conservation of energy, Reflection and Refraction of light, Magnet and its properties, Current Electricity, Ohm's law, Dynamo and Motor.
(b) Dalton's Atomic theory, Structure of Atoms, Chemical formulas, reactions and equations, Chemical Bonding, Carbon and its compounds, Plastics, synthetic fibres, soaps and detergents.

Unit - 5

(a) Cell structure, Photosynthesis, Structure of the human body, Respiration, Excretion and blood circulation, Microbes.

(b) Balanced diet, deficiency diseases, Conservation of Natural Resources, Environmental Pollution - Causes, consequences and remedial measures, Ecological crisis, Food Adulteration, Adaptation of plants and animals, Inter-relationship between men and environment.

N.B.: Framing suitable instructional objectives, implementing appropriate methods of teaching (from Unit-2) and evaluation techniques in respect of Unit-4 and 5 are to be dealt with.

Content-cum-Methods of Teaching Biological Science (Life Science)

Unit - 1

(a) Biological Science - Meaning, nature and its relevance in school curriculum.

(b) Aims and objectives of teaching Biological Sciences in school climate - general and specific objectives; Bloom's taxonomy.

(c) Learning of Scientific method and Development of scientific attitude. Life science as a part of General Science and as Elective science.
Unit - 2

(a) Methods of teaching Biological Sciences:

(i) Demonstration-cum-discussion

(ii) Problem solving

(iii) Project method

(iv) Inquiry approach

(v) Laboratory method

(b) Lesson planning and Unit planning in Biological Sciences.

(c) Use of teaching aids (projected and non-projected) and improvisation of apparatus in Biological Sciences.

Unit - 3

(a) Management and organisation of Biological Science Laboratory

(b) Managing and conducting activities like Biological Science exhibition, Bio-science fair, Aquarium and Botanical Garden, Bio-Science Museum, Field trip, Specimen collection and preservation.

(c) Evaluation of Bio-Science Curriculum and text-book

(d) Evaluation of achievement in Biological Sciences.

(e) Characteristics of good achievement test.

Unit - 4

(a) Life Process:

Reproduction—Asexual, sexual (in plants and animals)

Control and Co-ordination—Chemical Co-ordination in plants and animals.

Growth and differentiation—factors necessary for growth, phases of growth, the Nervous system.
(b) Organisation in the living world
- Levels of organisation and basis of organisation
- Modes of cell division: Mitosis and Meiosis
- The importance of crossing over
- Heredity and variation
(c) Biosphere – Structure and Function
- Food chain
- Flow of energy
- Cycling of materials

Unit - 5

(a) Food Production
- Agricultural tasks and food production
- Food from animals and animal husbandry
- Fish as source of animal food
(b) Management of Food Resource
- Planning
- Surveillance
- Management of crops (Pre-harvest and post-harvest)
- Safe storage of food
- Food processing and preservation
(c) Human beings
- Evolution of human beings
- Structure of human body
- Men exploit the environment
- Uniqueness of human body

N.B. – Appropriate methodology of teaching related to the contents given in Unit-4 and 5 can be selected from the Unit-2.
Content-cum-Methods of Teaching Physical Science

Unit - 1
Physical Science- Its place and importance in school curriculum, Aims and objectives of teaching Physical Science at the secondary level. Formulation of specific instructional objectives in Physical Science.

Unit - 2
Methods of teaching Physical Science- Discussion method, Demonstration method, Laboratory method, Observation method, Enquiry approach, Project method, Lesson Planning. Unit planning, Preparation & use of teaching aids in Physical Science.

Unit - 3
a) Evaluation in Physical Science - Prepration of objective based and objective type unit tests in physical science.

b) Critical study of Physical Science syllabus and text books.

Unit - 4
Mendeleeff's Periodic Law, Modern Periodic Table; Different types of chemical reactions-decomposition, combination, displacement, Atomic and Molecular masses, Chemical equation & balancing equations, Oxidation & reduction, Simple compounds of carbon, oxygen & hydrogen.

Unit - 5
Velocity, Acceleration, Circular motion, Friction, Universal law of Gravitation, Projectiles & Planets, Simple Pendulum and restoring force, Longitudinal & Transverse waves, Microscopes, Telescopes, Electricity used at home, Hazards of Electricity, Man and energy.

N.B. :- Framing suitable specific instructional objectives (from Unit-2) and evaluation techniques in respect of Unit - 4 & 5 are to be dealt with.
INTERNERSHIP IN TEACHING

Each pupil-teacher should be required to complete four weeks of internship in a school under the guidance of the Headmaster, co-operating teachers and lecturers of the college. During this period they are required to deliver 15 lessons in each of the two content-cum-method subjects offered by him/her. Then his/her worth shall be evaluated by the Supervisor/Headmaster taking into account his teaching/assignments and involvement in the total School Programme covering curricular and co-curricular activities.

The internship shall be prepared by a pre-internship programme during which he/she is required to observe some demonstration lessons and one criticism lesson and a few observation lessons and get acquainted with various records to be maintained during internship period.

In case a College desires and facilities are available the 4-week Internship period can be extended or divided into two weeks of micro teaching and two weeks of classroom teaching.

RECOMMENDATION ON INTERNSHIP TEACHING

(A) Pre Internship Programme:

(i) The duration of Pre-internship programme should be 2 weeks and should include orientation lectures for 2 days and 8 to 10 demonstration lessons.

(ii) Criticism lessons should be spread over 2/3 months during regular college teaching up to the starting of the internship period.

(iii) Some practical work related to different subjects should also be taken up during this period.

(iv) The student-teachers are required to maintain the following records:

(a) An observation note book

(b) Four lesson plans out of which one is to be delivered.
(B) Internship Programme: Guidelines

(i) The internship programme should continue for a period of six weeks, (two weeks of pre-internship and four weeks of internship).

(ii) During the first week, the student teachers should not be allowed to teach more than one lesson per day. The number of lessons per day should gradually increase in the subsequent weeks.

(iii) All lessons in each method would be supervised. An evaluating proforma called teaching competence scale given below will be used for evaluation. After every five lessons a summary feedback will be provided to the student-teacher by the concerned method teacher. 

(iv) Attendance should be made compulsory for all the six weeks of internship and the concerned schools may be requested to maintain attendance of student teachers.

(v) Assignments:— Each student teacher should submit the following assignments.

(a) Development of objective type achievement tests.

(b) A report on any co-curricular activity organised by the trainee such as SUPW/Community Work/Physical Education activity.

(C) Evaluation:

The following is the suggested distribution of marks in the two method subject for internal assessment.

(a) Records (Internal and External) — 20 marks

(b) Practical Teaching (Internal and External) — 80 marks