B.Ed.

Program Outcomes (PO'S)

On completion of two years program students will be able to:

Content and pedagogy:

- Understand the concepts of theory and pedagogical aspects.
- Analyze the curriculum and syllabus with reference to integration of content with methodology.
- Integrate the content knowledge successfully with pedagogical knowledge.

Teaching competencies:

- To identify and manage diversity in the classroom
- Apply the skills of teaching-learning in the classrooms.
- Understand and apply learner centered approaches, methods and strategies of teaching-learning suitable for all the learners.

Values and ethics:

- Apply the knowledge of values and core elements while inculcating them in students.
- Sensitize themselves about emerging issues such as environment, population, gender equality, legal literacy, critical understanding of ICT, yoga education, etc.
- Act as agent of modernization and social change

Self learning:

- Prepare year, unit and lesson plans of their respective subjects including lesson plans for students with diverse needs as well as e-content.
- Explain, develop and apply various evaluation procedures suitable for the content.

.**Enhancing professional capacities:**

- Integrate and apply ICT skills in facilitating teaching-learning process and administrative procedures.
- Understand the basics of research.
- Understand and apply professional competencies like reading and reflecting on texts, understanding of self, understanding the use of drama and art in education,
- Apply the interdisciplinary and multidisciplinary perspectives in Education for effective curriculum delivery.

B.Ed.
Program Specific Outcomes

Program Specific Outcomes of B.Ed. program are as follows:

- To understand the basic concepts and applications of educational psychology, sociology theories and pedagogical knowledge.
- To understand educational policies and contemporary issues in Indian Education.
- To analyze curriculum, syllabus, text-book and content.
- To identify learners with diverse needs, and apply the knowledge in dealing with differently abled students in the inclusive classroom.
- To inculcate simulated and real life classroom experiences of teaching-learning and pedagogical approaches.
- To develop community awareness, community services and other social skills.
- To apply managerial and organizational skills with respect to School administration and management.
- To develop skills necessary for teaching learning activities as; communication skills, language, art, reflections, aesthetic, research etc.
- To develop and apply ICT skills in all the courses, theory, pedagogy, and practices.
- To conduct action research to solve school problems.
- To prepare and apply different evaluation tools and techniques.

COURSE OUTCOMES (COs)

Sr. No.	Year/Semester	Subject	Course Outcomes
1	First Year	101:CHILDHOOD AND GROWING UP	CO 1. Identify the role of Heredity and Environment in teaching learning process. CO 2. Define the growth and development concepts. CO 3. Generalize the holistic development of adolescents CO 4. Describe individual differences of learner. CO 5. Differentiate general and inclusive students' needs of learning. CO 6. Explain the concept and need of inclusive education. CO 7. Identify the special needs of the persons with disability. CO 8. Define the diversity in the learning style. CO 9. List the different types of learning styles. CO 10. Appreciate the multiculturalism due

			Indian diversity. CO 11. Determine the impact of media on childhood and growing up students CO 12. Reflect upon the cultural dimensions of growing up students. CO.13 Explain the role of social dimensions on childhood and growing up student. CO.14 Evaluate the government policies in India for the Education of children
2		102: CONTEMPORARY INDIAN EDUCATION, GENDER & SOCIETY	At the end of this course the student- teacher should be able to CO1. Understand the concept and aims of education and recognize the types and functions Agencies of Education . CO2. Appreciate the role of education in handling the issues in contemporary India. CO3. Understand the process of social change and obstacles in social change. CO4.Make an attempt to bring social change through the process of education. CO5. Identify the limitations of social change and apply the principles of education in social context. CO6. Recognize the gender sensibility, issues related to gender in school. CO7. Identify the challenging gender inequalities in school and make attempt to establish positive attitude towards gender equality. CO8. Compare Liberalization, privatization, Globalization in context with modern India. CO9. To understand the concept of Education Act 2009 and its feature the Rashtrya Ucchatar Shiksha Abhiyaan . CO10. Appreciate the contribution of great educationalist.
3		103: LEARNING AND TEACHING	At the end of this course the student –teacher should be able to CO1. Recognize the concept & types of learning. CO2. Appreciate the idea of learning as

			construction of knowledge. CO3.Realize the connection between learning in school & outside the school. C04. Apply the theories of learning in learning process. CO5.Identify different theories of learning. CO6. Recognize & understand theory & types of constructivism. CO7. Appreciate the concept of mind map & concept map in learning process. CO8. Analyze the complex process of teaching. CO9.Acquaint with different approaches of learning that support learning. CO10.Value the relevance of reflections in the teaching learning process. C011.Apply Maxims, levels & functions of teaching in teaching learning process. CO12 Implement methods & models of teaching in teaching learning. C013.Realize the significance of context in which the teaching learning occurs. CO14.Acknowledge that teaching is a profession.
4		105: Advanced Pedagogy and Application of ICT	1. Apply Advanced Pedagogical approaches to meet the needs of diverse learners. 2. Use ICT supported advance teaching learning strategies and its application in education 3. Design and develop ICT based teaching-learning strategies & resources. 4. Create awareness about appropriate use of ICT 5. Develop educational material using advanced pedagogical strategies and ICT tools.
5		106-03: UNDERSTANDING DISCIPLINES AND SCHOOL SUBJECTS ENGLISH	At the end of this course the student teacher should be able to 1. Acquire proficiencies in listening, speaking, reading, and writing and communication skills. 2. Acquaint with essential aspects of English Grammar and composition. 3. Understand the scope of syllabi in English. 4. Develop interest and attitude towards English as foreign language.
6		106- 05: UNDERSTANDING DISCIPLINES	At the end of this course the student teacher should be able to CO1.Recognize & understand the nature,

		AND SCHOOL SUBJECTS URDU	scope & importance of subject. CO2.Analyze the objectives of the subject. CO3. Analyze the structure of the Urdu subject. CO4.Identify & apply different methods & techniques of learning. CO5.Recognize concept & types of curriculum & syllabus. CO6.Identify importance of core elements, values & life skills. CO7. Analyze the text book & content. CO8.Analyze various resources of learning Urdu subject. CO9.Analyze & evaluate the new trends of current issues in subject Urdu. CO10.Acquire qualities, role, responsibilities of good Urdu teacher.
7		106-07: UNDERSTANDING DISCIPLINES AND SCHOOL SUBJECTS GEOGRAPHY	1. Recognizes the knowledge of all Branches of Geography subject at a school level. 2. Recognizes the interdependence and interrelationship among the various concepts and processes in Geography Subject. 3. Recognizes the skills related to map and instruments in Geography. 4. Applies technique of observation and reporting of Geographical phenomenon 5. Takes interest in Geography subject
8		106-09: UNDERSTANDING DISCIPLINES AND SCHOOL SUBJECTS MATHEMATICS	CO 1. Illustrate nature, scope & importance of Mathematics at secondary level. CO 2. Analyze the textbook& content of Mathematics at secondary level. CO 3. Explain basic concepts in Arithmetic, algebra, and Geometry. CO 4. Illustrate facts, terms, concepts, laws & principles in Mathematics. CO 5. Apply basic concepts of Mathematics in daily life.
9		107-03: PEDAGOGY OF THE SCHOOL SUBJECT ENGLISH	At the end of this course the student teacher should be able to 1. Understand the nature, scope and importance of the subject. 2. State the objectives of the subject. 3. Explain and use different approaches, methods and techniques of teaching learning of subject. 4. Explain and understand the structure of subject

			5. Explain the concept and types of curriculum and syllabus. 6. Explain the importance and use of core elements, values and life skills. 7. Analyze the text book and content. 8. Analyze the various resources in teaching learning of the subject. 9. Understand qualities of a good teacher. 10. Analyze and evaluate the new trends of current issues in the subject.
10		107-05: PEDAGOGY OF THE SCHOOL SUBJECT URDU	At the end of this course the student teacher should be able to CO1.Recognize & understand the nature, scope & importance of subject. CO2.Analyze the objectives of the subject. CO3. Analyze the structure of the Urdu subject. CO4.Identify & apply different methods & techniques of learning. CO5.Recognize concept & types of curriculum & syllabus. CO6.Identify importance of core elements, values & life skills. CO7. Analyze the text book & content. CO8.Analyze various resources of learning Urdu subject. CO9.Analyze & evaluate the new trends of current issues in subject Urdu. CO10.Acquire qualities, role, responsibilities of good Urdu teacher.
11		107-07 :PEDAGOGY OF THE SCHOOL SUBJECT GEOGRAPHY	1. Recognizes the nature, scope and importance of the subject. 2. States the objectives of the subject. 3. Recognizes and applies different approaches, methods and techniques of teaching learning of subject. 4. Recognize the structure of subject. 5. Recognize importance of core elements life skills & values and applies core elements life skills & values. 6. Analyses the text book & content. 7. Recognize the concept and types of curriculum and syllabus. 8. Analyses the various resources in teaching learning of subject. 9. Recognize qualities of good teacher.
12		107-09- PEDAGOGY OF THE SCHOOL	CO1. Explain nature, scope & importance of mathematics at secondary & higher secondary level.

		SUBJECT MATHEMATICS	CO 2. Analyze the textbook & content of mathematics at secondary & higher secondary level. CO 3. Illustrate and demonstrate methods & models of teaching learning of mathematics. CO 4. Make use of the competencies of mathematics teacher CO 5. Rephrase facts, terms, concepts, laws & principles in mathematics.
13		Course outcomes Course 110 a+b – practice teaching & internship.	At the end 0f this course the student teacher should be able to. CO1. Analyze the depth & breadth of academic learning. CO2. Apply different methodology to make teaching learning effective. CO3. Apply ICT resources in teaching in multiple ways. C04. Integrate content & methodology as per the course requirement. CO5.Realize & develops interest in teaching. CO6.Identify role & responsibilities as a teacher during & after the course. CO7.Develops communication skill. C08.Communicate & collaborate effectively & appropriately with different students & co teachers during course. CO9 .Exhibit professional ethics by displaying positive disposition during internship. CO10.Identify & write down the daily activities & experiences. CO11.Build Record of activities & experiences. C012. Analyze & develop work habits & attitudes to be a good teacher.
14		Course Outcomes BED 111 –A: Critical Understanding of ICT-Practical	CO 1. Demonstrate skills for preparing ICT INTEL Practical. CO 2. Apply various applications software like Power point presentation, word publisher, and Word processing for practical preparation. CO 3. Create folders for proper execution of practical. CO 4. Plan unit plan template CO 5. Compile the data (audio, visual images and clip arts etc.) for preparation of practical. CO 6. Classify the information required for the practical

15		Course Outcomes BED 111 B) Co-curricular activities	CO 1. Organize co-curricular activities in the Institute CO 2. Participate in the co-curricular activities organized in the Institute CO 3. Show the talent through different co-curricular activities. CO 4. Support the group for team work in the co-curricular activities CO 5. Perform various programmes for solving social issues through co-curricular activities
16		112 : Health and Yoga	1. Recognizes the importance of physical exercises, games. 2. Recognizes the importance of yoga and suryanamaskar, sports. 3. Recognizes the importance of physical and mental health. 4. Applies yoga in day today life. 5. Applies physical exercises in daily life. 6. Applies mental health in daily life.
17	Second Year	201 Title of Course: Quality and Management of School Education	1. Recognizes the concept of Management. 2. Identifies the concept of quality and enlists the dimensions of quality. 3. Recognizes the need and importance of school accreditation. 4. Applies knowledge regarding the concept and process of Human Resource Management in school. 5. Gets acquainted with the essential infrastructural resources for quality management. 6. Identifies the problems and its management in secondary and Higher secondary education. 7. Compares different types of school boards in India. 8. Recognize the administrative set up of Government and function of supportive authorities.
18		202 KNOWLEDGE & CURRICULUM AND LANGUAGE ACROSS THE CURRICULUM	At the end of this course the student teacher should be able to 1. Understand the sources and generation of knowledge 2. Realize the inter-relationship between knowledge, information and skill in the present social context 3. Understand the dimensions of curriculum development 4. Understand the social basis of framing curriculum 5. Get acquainted in the views of Indian

			thinkers on the social basis for framing curriculum 6. Comprehend the concept and relevance of multilingualism in the Indian context 7. Get acquainted with the activity based learning approaches 8. Realize the context and relevance of language in learning 9. Become familiar with the strategies for developing language skills
19		203 SCHOOL AND INCLUSIVE SCHOOL	At the end of the course the student – teacher should be able to : CO1. Outline the concept and nature of Inclusive Education. CO2. Illustrate the difference between Main School, Special School, Integrated School and Inclusive School. CO3. Explain the need and importance of Inclusive Education. CO 4. Examine the status of Inclusive Education in India. CO5. Illustrate the National policies, programmes and Acts with respect to Inclusive Education in India. CO 6. Identify different types of disabilities. CO 7. Compare the nature and needs of different categories of disabled children. CO 8. Recognize concept, need and importance of social, economic and cultural inclusion. CO 10. Apply inclusive instructional strategies at school level. CO 11. Identify the infrastructural facilities necessary for inclusive set up. CO 12. Identify various issues and concerns related with creation of an inclusive culture in school. CO 13. Make use of various assistive technology for successful inclusion. CO 14. Recommend different assessment and evaluation methods in an inclusive set up. CO 15. Identify the role of teacher in facilitating Inclusive Education.
20		204-01 GUIDANCE AND COUNSELLING	CO 1. Define the concept and need of guidance. CO 2. Illustrate the principles and procedure of guidance. CO 3. Explain the role of school in guidance.

			CO 4. Recognize various areas in guidance. CO 5. Explain the concept, need and meaning of counseling. CO 6. Illustrate principles and process of counseling. CO 7. Analyze the relationship between guidance and counselling. CO 8. Demonstrate the qualities and role of a school counselor. CO 9. Explain the tools and techniques in guidance and counseling. CO 10. Relate the need of counseling children with special needs and for parents.
21		205-07-Additional Pedagogy Course Understanding disciplines and school subjects And pedagogy of School Subject Geography School Content	1. Recongnise the knowledge of all branches of Geography subject at a school level. 2. Recongnise the interdependence and interrelationship among the various concepts and processes in Geography Subject. 3. Applies the skills related to map and instruments in Geography. 4. Develops a technique of observation and reporting of Geographical phenomenon 5. Creates interest in Geography subject 6. Recongnise the nature, scope and importance of the subject. 7. States the objectives of the subject Geography. 8. Explains and applies different approaches, methods and techniques of teaching learning of subject. 9. Explains and recognizes the structure of subject. 10. Recongnise importance of core elements, life skills and values. 11. Recongnise the text book and content. 12. Applies the various resources in teaching learning of subject. 13. Recognize qualities of a good Geography teacher.
22		Course 205 - 09: Additional Pedagogy Course Understanding disciplines and school subjects and pedagogy of School Subject Mathematics	At the end of the course the student – teacher should be able to: CO 1. Classify the basic concepts in arithmetic and algebra. CO 2. Classify the basic concepts in geometry and applied mathematics. CO 3. Outline nature, scope, place and importance of mathematics at secondary and

			higher secondary level CO 4. Explain general and classroom objectives of mathematics subject at secondary and higher secondary level. CO 5. Relate the concept of curriculum, syllabus and methods of construction of curriculum. CO 6. Analyze the textbook and content of mathematics at secondary and higher secondary level. CO 7. Develop correlation of mathematics in daily life, other school subjects and within the branches and units. CO 7. Adapt different methods and models of mathematics teaching. CO 8. Explain the importance of mathematics laboratory. CO 9. Identify different types of learning resources for mathematics. CO 10. Develop the competencies of a mathematics teacher.
23		205-10-Additional Pedagogy Course Understanding disciplines and school subjects and Pedagogy of school Subject ECONOMICS	At the end of this course the student teacher should be able to 1. Understand meaning nature scope and basic concept of economics 2. Understand major challenges before Indian economy 3. Understand the concept and scope of micro and macro economics 4. Understand the basic concept of teaching of economics 5. Understand the implement pedagogical approaches and learning resources of economics 6. Understand the quality of good economics teacher
24		205-11-Additional Pedagogy Course Understanding disciplines and school subjects and Pedagogy of school Subject INFORMATION and COMMUNICATIO	1. Make effective use of information and communication technology in classroom teaching 2. Develop capabilities to access Information using Internet. 3. Acquaint with basic techniques and knowledge required for computing applications. 4. Create awareness of cyber laws and ethics. 5. Explain nature, scope & importance of ICT at secondary & higher secondary level. 6. Analyze the textbook & content of ICT at

		N TECHNOLOGY (ICT)	secondary & higher secondary level. 7. Acquire the competencies of ICT teacher
		205-07-Additional Pedagogy Course Understanding disciplines and school subjects And pedagogy of School Subject BIOLOGY School Content	1. Explain facts, terms, concepts , laws & principles in biology. 2. Illustrate nature, scope & importance of biology at secondary &higher secondary level. co-relation with other disciplines. 3. Analyze the textbook& content of biology at secondary &higher secondary level. 4. Make use of methods& models of teaching learning of biology. 5. Demonstrate the competencies of biology teacher
25		205-22- Additional Pedagogy Course Understanding disciplines and school subjectsand pedagogy of School Subject Sociology.	At the end of this course the student teacher should be able to CO1. Familiarize with the concept & structure of the subject. CO2.State the objectives of the subject. CO3. Identify different stages of formation of Indian society. CO4. Identify the concept of social stratification, social change & socialization. CO5. Recognize social problems prevailing in Indian society. CO6. Identify the importance of core elements, values & life skills. CO7. Analyze & implement various resources of sociology in learning process. CO8. Analyze the text book & content. CO9. Identify & use different methods & techniques of learning. CO10. Acquire the qualities role & responsibilities of sociology teacher.
26		Course BED 206: Teaching Competencies IV:	1. Develops lesson plans of practice lessons. 2. Conduct practice lessons. 3. Recongnises teaching in the school. 4. Creates various teaching aids.
27		Course BED 207: Teaching Competencies IV:	1. Develops lesson plans and conduct lessons. 2. Develops a plan of evaluation for the unit taught. 3. Recongnises various types of records are prepared and maintained in the school. 4. Organizes co-curricular and extracurricular activities in the school. 5. Observes lessons. 6. Gives feedback and reflects on the lessons given by peers. 7. Recongnises teaching in the school.

28		Course out comes. 209- Understanding self.	At the end of this course the student teacher should be able to CO1. Identify self as a person. CO2.Analyze self as a good learner. CO3. Recognize self by continues self-reflection. CO4.Analyze holistic development of self. CO5.Identify self as an integrated personality. CO6. Recognize the importance of self-concept & self-esteem. CO7.Identify & apply life skills. CO8.Make an attempt to be a good social science teacher.

			CO9. Apply the principles of social context in teaching learning process. CO10.Compares social issues of rural & urban areas. CO11.Make an attempt to bring social change through teaching learning. C012. Acquire the qualities, role & responsibility to be a good teacher.
29		Course Outcomes BED 210: Basic of Research	CO 1. Basic research methodology. CO 2. Illustrate various solutions related to educational problem. CO 3. Define the educational problem. CO 4. List objectives for educational problem. CO 5. Construct tool for data collection CO 6. Interpret appropriately data collected CO 7. Compute various measures of statistics. CO 8. Compare the various groups of data collected. CO 9. Explain the most probable solutions. CO 10. Explain the concept, need and meaning of counseling.
30		Course BED 211:- Drama and Art in Education: 2 credits	1. Recongnise the self. 2. Realizes the form of self-expression. 3. Enhances the creativity. 4. Appriciates the drama. 5. Appriciates the novel. 6. Recongmises script writing.
31		BED 212: Open Course or Entrepreneurship Development	1. Understand education as a tool to empower teacher. 2. Build self-awareness among the novice teacher about the professional opportunities. 3. Develop professional competencies of the student teachers.

MASTER OF EDUCATION (M.Ed.)

PROGRAMME OUTCOME (POs)

On successful completion of the two-year M.Ed. program students (scholars) will be able to:

Pedagogical Content Knowledge:

- Identify and explain various learning theories, psychological, sociological and philosophical concepts, principles and apply in day to day classroom teaching
- Understand about the school education system in philosophical, social, cultural, political, economic and historical perspectives
- Understand the basic principles and process of curriculum development at primary and secondary level
- Explain the nature of issues and problems faced by the State system of education and suggest some innovative remedies to solve them.
- Appreciate the national education policies and provisions made in the plan to spread quality secondary education in the country, and the ways to equip would be teachers for the same.

Enhancing Professional Competency:

- Apply innovative teaching techniques and strategies in classroom teaching and expand professional Competencies skills, interest and expectation in preparing for career as a teacher.
- Apply the knowledge of Educational administration & management in academic planning, organization, evaluation, decision making, resource management according to predetermined goals, norms and standards.

Technological and Research Skill development:

- Understand concept and types of educational research, role and use of statistics in research
- Select appropriate research tools and techniques for data collection and analysis
- Understand and explain importance of research ethics
- Apply technological skills in 1. planning, developing and implementing classroom teaching, 2. recording, tabulating and analyzing research data etc.

Creative and Critical Thinking ability:

- Recognize areas of commitment, accountability, constitutional values, national goals & suggest various activities and perform accordingly.

- Understand in the light of recent global developments, the new thrusts in education and suggest ways to inculcate intellectual, emotional and performance skills among would be secondary teachers teaching the "Global citizens of tomorrow"

PROGRAMME SPECIFIC OUTCOME (PSOs) OF M.Ed.:

- to acquaint knowledge of organization & planning of evaluation process and extra-curricular activities based on Secondary & Higher Secondary.
- to understand the Theories of learning and their utility in the Teaching learning process.
- to improve educational reforms for improving Human Development Index in India.
- to understand the interrelationship between Philosophy, sociology, psychology and Education
- to understand the foundations of curriculum development and the need of continuous curriculum reconstruction
- to understand development of Teacher Education in India & to compare teacher education with other developed Countries for quality improvement
- To develop competencies and skills require for inclusive classroom
- To conduct research and apply acquired research skills in solving problems in an era of rapidly increasing racial, ethnic, linguistic, secular and caste based diversity.

COURSE OUTCOMES(COs)

SEMESTER I

Course M.Ed. 101: Psychology of Learning and Development

At the end of this course the student-teacher should be able to:

CO1. Explain the psychological basis of Education.

CO2. Appreciate the contribution of the theories of development and personality.

CO3. Explain the changing concept of Intelligence and creativity and its application.

CO4. Identify and explain the models of Teaching and their utility in the Teaching learning process.

CO5. Analyze the Theories of learning and their utility in the Teaching learning process.

CO6. Recognize the framework of the process of learning.

CO7. Visualize multiple dimension and stage of learner's development.

M.Ed. 102 History and Political Economy of Education

After successful completion of this course, students will be able to:

CO 1: Understand the history of Education.

CO 2: Classify & Compare the characteristics of education system in the various era of Indian education

CO 3: Analyses & compare the different aspects of growth of the national system of education.

CO 4: Describe & analyses the role of politics in education.

CO 5: Analyses the role of education in economic development

MED 103 Educational Studies.

At the end of this course student should be able to:

CO1. Distinguish the widening horizons of education in globalization.

CO2. Appreciate theory and research in an era of rapidly increasing racial, ethnic, linguistic, secular and caste based diversity.

CO3. Recognize the importance of interdisciplinary in education.

CO4. Comprehend the use and impact of technology in education.

CO5. Make available social service and leadership in culturally diverse, economically challenged democratic society through education.

CO6. Reflect critically and creatively the process of teaching and learning about the place of education in society.

M.Ed. 104 Introduction to Research Problem

After successful completion of this course, students will be able to:

CO 1: Understand the concept & types of research and educational research.,

CO 2: Understand the steps involved in educational research.

CO3: Apply knowledge of research and make use of different tools and techniques in educational research.

CO4: Effective use the library, Internet Services and other sources of knowledge for educational research purpose

MED 105 Communication & Yoga Education

At the end of this course student should be able to:

CO1. Communicate coaching in excellent way by acquiring associate skills.

CO2. Obtain skills for conduct of interaction sessions.

CO3. Obtain sessions for using communication adds.

CO4. Exercise own energy for self-development.

CO5. Think on focused activity.

CO6. Survive in an organized manner.

SEMESTER II

MED 201 - Philosophy of Education

At the end of this course student should be able to:

CO1. Appreciate the interrelationship between Philosophy and Education

CO2. Appreciate the basic tenets, principles and developments of the major Indian Schools of Philosophy

CO3. Appreciate Educational thoughts of Indian Philosophers.

CO4. Appreciate the basic tenets principles and development of the major Western Schools of Philosophy.

CO5. Acquaint of human values and role of education.

M.Ed. 202 Sociology of Education

After successful completion of this course, students will be able to:

CO 1: Understand the interrelationship between Sociology and Education.

CO 2: Apply the principals of sociology of education in learning process.

CO 3: Understand the role of new technology in the changing social content.

CO 4: Understand and analyze the changing nature of society and education in 21st century.

CO 5: Acquire the knowledge about the role of education in sustainable development.

CO 6: Creating a culture of peace in society

Course M.Ed. 203: Curriculum Studies

At the end of this course the student-teacher should be able to:

CO 1: Understand the meaning and concept of curriculum and the foundations of curriculum development.

CO 2: Understand component, leads and relationship of curriculum.

CO 3: Identify the research areas in curriculum

CO 4: Discover the critical issues in curriculum construction.

CO 5: Discuss the development of curriculum.

CO 6: Discover the relationship of curriculum engagement with real life.

CO 7: Understand the agents of curriculum evaluation

CO 8: Describe curriculum and curriculum mapping

CO 9: develop awareness of researches in curriculum development.

Course M.Ed. 204: Pre-Service and In-Service Teacher Education

At the end of this course the student-teacher should be able to,

CO1. Describe the Concept of Teacher Education - Pre service & In-Service.

CO2. Explain the nature and Agencies of Teacher Education.

CO3. Acquire knowledge of levels of Teacher Education.

CO4. Analyze the modes of curriculum transaction & it's development.

CO5. Recognize the development of Teacher Education in India & comparing of Teacher Education with other developed Countries.

CO6. Differentiate the modes of pre service teacher education.

CO7. Explain objectives, functions and role of various agenesis of teacher education program

MED 205 Dissertation Part – I (Proposal and Review)

After successful completion of this course, students will be able to:

CO 1: Understand importance of research proposal in the process of educational research.

CO 2: Understand importance of review of related literature and research

CO 3: Develop skills of making review of related literature and research.

MED 206 Internship in Teacher Education Institute

At the end of this course student should be able to:

CO1. Appreciate familiarity with the Education College that is B.Ed. or D.Ed. college routine.

CO2. Manage and participate in the curriculum activities of the college.

CO3. Organizes co-curricular activities for the students.

CO4. Manage and participate in the administrative functions of the College.

CO5. Develop and expand professional competencies, Skills, interest and expectations in preparing for a career in the field of Teacher Education

CO6. Assimilate practical experience with classroom instruction for more complete learning process.

SEMESTER III

MED 302 Secondary and Higher Secondary Education

At the end of this course student should be able to:

CO1. Understand the concept and history of secondary and higher secondary education in India

CO2. Comprehend the Psychological Bases for Secondary and Higher Secondary Education

CO3. Identify and analyze the different Structures of Secondary and Higher Secondary Education

CO4. Understand Global Perspectives of Secondary and Higher Secondary Education

MED 306 Inclusive Education

After successful completion of this course, students will be able to:

CO 1: Understand more systematically the knowledge and be more critically aware of issues in inclusive education

CO 2: Identify conceptual frameworks appropriate for investigating inclusion issues, examining the inclusivity of systems and for developing inclusive education

CO 3: Reflect critically upon and analyze perspectives regarding inclusion

CO 4: Analyze and develop successful inclusive learning practices, develop techniques relevant to research scholarship.

MED 308: Advanced Research Methodology and Inferential Statistics

After successful completion of this course, students will be able to:

CO 1: Understand the concept of Research and Educational Research.

CO 2: Understand the role and use of statistics in educational research.

CO 3: Compute various measures of average and variation

CO 4: Use the various teachings of qualitative data for data analysis

CO 5: Explain & use the various methods of data analysis of mixed research

CO 6: Test the hypothesis of research study

CO 7: Predict values of dependent variables

CO 8: Use various software for statistical analysis & prepare the research report

CO 9: Organize, manage and present data

CO 10: Analyze statistical data graphically using frequency distributions and cumulative frequency distributions.

CO 11: Analyze statistical data using measures of central tendency, dispersion and location.

CO 12: Analyze Statistical data using MS-Excel

Course M.Ed. 309: Perspectives Research and Issues in Teacher Education

At the end of this course the student-teacher should be able to,

CO1. Identify issues and problems of Teacher Education.

CO2. Appreciate the contribution of innovation in Teacher Education.

CO3. Describe and conduct research in Teacher Education.

CO4. Predict new trends of research in teacher education.

CO5. Identify the challenges in professional development of teachers.

CO6. Analyze the factors infecting the quality of in and pre service teacher education program in India.

CO7. Explain the perspectives and practices of teacher education.

CO8. Recognize the issues related to enhancing teacher competencies, commitment & performance

MED 310 Internship in Secondary / Higher Secondary

At the end of this course student should be able to:

CO1. Investigate the working environment of Secondary and Higher Secondary.

CO2. Discover classroom teaching activities and organization of school/Higher Secondary.

CO3. Explain knowledge of organization & Planning of evaluation process and extracurricular activities based on Secondary & Higher Secondary.

CO4. Widen & Enlarge professional Competencies skills, interest and expectation in preparing for career as a teacher.

MED 311 Dissertation part – II (Tool and Data Analysis)

After successful completion of this course, students will be able to:

CO 1: Identify suitable tool, to adapt identified tool &to develop data Collection tool according to nature of inquiry.

CO 2: Apply various statistical tools & techniques for data analysis.

CO 3: Infer analyzed data

MED 312 Open Course

At the end of this course student should be able to:

CO1. Analyze essential life skills of 21st century citizens.

CO2. Explain the nature of critical tinkling and problem solving skills'

CO3. Describe the relationship between critical thinking and problem solving skills.

CO4. Create appropriate instructional designs to integrate critical thinking and problem solving skill into day today's teaching-learning practice.

CO5. Use appropriate assessment ways and tool to assess critical thinking and problem solving skill.

SEMESTER IV

M.Ed. 401 Educational Management

After successful completion of this course, students will be able to:

CO 1: Understand the concept, principals, and process of management skills required in the education.

CO 2: Understand the techniques of management of education scientifically

CO 3: Apply the concepts techniques and process of management to the situation in education

CO 4: apply the procedures of supervision and inspection and bring about improvement in the field of education

Course M.Ed. 403: Optional - Education of children with Special Needs

At the end of this course the student-teacher should be able to,

CO1. Recognize the learner with the historical perspective of special education.

CO2. Analyze about allexceptionalities of learner and describe their inter-relatedness.

CO3. Elucidate the learner to understand the policies and legislation in special Education in India.

CO4. Explain the current and future needs, trends and issues related to special education.

CO5. Appreciate the contribution of the researches in special education in India.

MED 404: Guidance and Counseling

At the end of this course student should be able to:

CO1. Understand meaning, need and types of guidance

CO2. Familiar with the tools and techniques of appraisal of an individual

CO3. Familiar with the need and various ways of collection and dissemination of occupational information.

CO4. Comprehend meaning characteristics and types of counseling

CO5. Familiar with process and techniques of Counseling.

CO6. Explain the importance of placement and follow up services.

CO7. Explain meaning, purposes and out-line of job-study.

CO8. Comprehend about Counseling- research, issues and trends.

MED 407 Dissertation – Part III (Report writing and Viva-Voce)

After successful completion of this course, students will be able to:

CO 1: Plan & Prepare good research report.

CO 2: Write API Style/ Standards References.

CO 3: Present his/her research work and explain it logically & scientifically.

B.A B.ED.

PROGRAM OUTCOME (PO's)

On successful completion of the Four-year B.A.B.Ed. Program, pupil teachers will be able to develop-

Po 1. Content and Pedagogical Knowledge :

- Comprehension of theoretical knowledge of academic subjects at B.A. level as well as B.Ed. level.
- Implementation of knowledge of core content and pedagogy to set goals and objectives for learning based on Curriculum, and design instruction that engages students in meaningful learning activities.
- Understand the integration of content knowledge with pedagogical knowledge.
- Analyze and comprehend the syllabus and curriculum for integration of content with teaching methodology.

Po 2. Teaching Proficiency:

- Use of learner-centered teaching methods according to the need of learners.
- Applying content knowledge with innovative teaching skills and dealing with classroom problems.
- Implementation of appropriate teaching methodology or strategy after recognition of learner's learning styles.

Po 3. Values and Ethics:

- Implementation of the core elements, life skills, national values and goals as mentioned in the constitution of India.

- Understand different values, ethics, morals, social service and sense of responsibility for the society.
- Demonstrate professional ethics and responsibilities as an educational practitioner.
- Engage in value based and culturally responsive teaching practices.
- Sensitize learners to act as an agents of modernization and social change.

Po 4. Self-Directed Learning:

- Preparation of class wise tentative planning on monthly, half yearly basis along with Year, Unit and Lesson plan of their respective subjects including the lesson plan for the students with diverse needs.
- Construction of scripts for e-content of respective subjects.
- Development and implement various evaluation procedures as per the demand of subject.

Po 5. Strengthening Professional Competencies:

- Integrate ICT in teaching-learning and assessment process to enrich professional practice.
- Deliver meaningful learning experiences for all students by integrating their knowledge and applying a variety of communication, instructional, and assessment strategies in their teaching.
- Apply the competencies and skills needed for becoming an effective teacher.

B.AB.ED.

PROGRAM SPECIFIC OUTCOMES (PSO's)

Program specific Outcomes of B.A.B.Ed. Program are as follows :

- To understand educational policies, contemporary issues regarding gender and society in Indian education.
- To understand the basic concepts of sociological theories, pedagogical knowledge and application of educational psychology.
- To develop skills necessary for teaching –learning activities through micro teaching lessons, innovative teaching lessons, practice teaching and internship activities.
- To understand basics of research and to develop the research attitude through by preparing research proposals on various topics.
- To analyze curriculum, syllabus, Text-books and content.
- To identify the diversity of learners and create appropriate learning environment to assure a focus on learning of all students.
- To develop critical awareness about the social realities among the students.
- To apply managerial and organization skills with respect to school administration and management.
- To engage in value based and culturally responsive teaching practices.
- To demonstrate leadership qualities by participating in the curriculum initiatives, student support and school management systems.
- To integrate ICT in teaching-learning and assessment process to enrich professional practice.
- To demonstrate commitment for continuous self-improvement by engaging in professional development activities and collaborative and reflective

practices to improve teaching and learning that contribute to the revitalization of the teaching profession.

B.AB.ED.

COURSE OUTCOMES (CO's)

- **First Year B.AB.ED.**

B.Ed 102 CONTEMPORARY INDIAN EDUCATION, GENDER & SOCIETY

After Completion this course the student will be able to :

1. Define the concept and aims of education.
2. Explain the concept of social change and process of social change.
3. Develop gender sensibility amongst student teacher.
4. Discuss about the gender issues faced in school.
5. Recognise awareness about constitutional provision regarding gender education.
6. Identify the contemporary issues in education.
7. Explain the contribution of thinkers in education.

G-102 Compulsory English

After Completion this course the student will be able to :

a) To expose students to the best examples of prose and poetry in English so that they realize the beauty and communicative power of English
b) To instill human values and develop the character of students as responsible citizens of the world.
c) To develop the ability to appreciate ideas and think critically.
d) To enhance employability of the students by developing their linguistic competence and communicative skills
e) To revise and reinforce structures already learnt in the previous stages of learning.

G-103 General English Initiations (Minor literary forms and basics of phonology)

After Completion of this course the student will be able to:

a) Understand the basics of literature and language.

b) Get familiarized with different types of literatures in English, the literary devices and terms

c) Understand the literary merit, beauty and creative use of language.

d) Become aware of the technical aspects and their practical usage .

e) Get prepared to go for detailed study and understanding of literature.

f) Get integrated view about language and literature in them

G-104 General Hindi (साहित्य विविधा)

1:छात्रों को हिंदी के गद्य एवं पद्य के प्रतिनिधि रचनाकारों का परिचय देना।
2:हिंदी साहित्य के प्रति छात्रों की रुचि बढ़ाना तथा साहित्य के विविध विधाओं से परिचय कराना।
3:कहानी, कविता, एकांकी, साक्षात्कार, रेखाचित्र आदि विधाओं को माध्यम से छात्रों का भावात्मक विकास करना।
4:छात्रों में राष्ट्र के प्रति प्रेम एवं सामाजिक प्रतिबद्धता की भावना विकास करना।
5:राष्ट्रीय ऐकय सामाजिक, उत्तरदायित्व, वैज्ञानिकता आदि मूल्यों के प्रति छात्रों का ध्यान आकर्षित करना।
7:परिभाषिक शब्द वाली के माध्यम से छात्रों के प्रयोजनमूलक हिंदी से परिचित कराना।
8:पत्र लेखन, अनुवाद आदि के माध्यम से छात्रों का भाषा के रचनात्मक पहलुओं से परिचित कराना।
9:सारांश, लेखन, निबंध आदि के माध्यम से छात्रों की परीक्षाएं क्षमता तथा कल्पना शक्ति को बढ़ावा देना।
10:वाक्य शुद्धिकरण आदि के माध्यम से छात्रों को वर्तनी के नियमों विरामचिन्ह से अदगत कराना

G-105 General History (Early India: From Prehistory to the Age of the Rashtrakutas)

After Completion of this course the student will be able to:
I.The history of Early India is a crucial part of Indian history. It is a base for understanding the entire Indian history.
II. The course is aimed at helping the student to understand the history of early India from the prehistoric times to the age of the Mauryas.
III. It attempts to highlight the factors and forces behind the rise, growth and spread of civilization and culture of India along with the dynastic history.
IV. It also attempts to help the students to understand the contribution of Early Indians to polity, art, literature, philosophy, religion and science and technology.
V. It also aims to foster the spirit of enquiry among the students by studying the major developments in early Indian history.
VI. The history of India after the Mauryas is very important to understand the developments in early India after the Mauryas, which finally led to the transition to medieval India.
VII. The course is aimed at introducing the students to the developments in different parts of India through a brief study of regional kingdoms up to the tenth century C.E.
VIII. It attempts to highlight the consequences of the foreign invasions, particularly on the polity, economy, society and art and architecture. The attempt is also to instill the spirit of enquiry among the students.

G-106 General Geography (Physical Geography & Human Geography)

After Completion of this course the student will be able to :
1. Acquaire knoeledge of the nature, scope and importance of Physical Geography.
2. Define the branches of the subject.
3. Explain different concepts as Lithosphere, atmosphere, Hydrosphere
4. Explain and understand the importance of subject.
5. Explain importance and use of Populatation geography
6. Explain the concept and types Agriculture geography
7. Analyse the various resources used to grow economy of India

- **Second Year B.AB.ED.**

B.Ed 101 Childhood and Growing Up

After Completion of this course the student will be able to :
1. Acquire knowledge about the growth and development of the learner and explain its importance in the teaching learning process with special reference to adolescent stage.
2. Recognise the elements regarding the individual differences among learners.
3. Identify the educational needs of diverse learners.
4. Get acquainted with the new (contemporary) theories of learning.
5. Analyse Political, Social and Cultural dimensions along with their implications on childhood and growing up.
6. Explain the impact of mass communication media on childhood and growing up.

B.Ed 202 Subject Education English -CCM English (Pedagogy of Learning Resources and Content Enrichment Analysis)

At the end of this course the student teacher should be able to :
1) Recognize the nature, Scope and importance of the subject
2) States the correlation of English Subject with other school subjects.
3) Implement the objectives of teaching of the subject at secondary and higher secondary level.
4) Apply the different methods, approaches and techniques during teaching learning process.
5) Establish relationship among sub skills from the structure.
6) Implement core elements, life skills and values in teaching learning process.
7) Attempt to analyze the textbook and content of English.
8) Identify the difference between curriculum and syllabus and compares the types of curriculum.
9) Appropriate use of the various teaching learning resources as per subject content.
10) Reflect upon one's own Identity as a subject teacher.

B.Ed 202 Subject Education Hindi (आशययुकत अध्यापन पद्धती)

1: छात्रों को भाषा की परिभाषा विशेषताएं तथा भाषा के विविध रूपों की जानकारी देना।
2: छात्रों को हिंदी की बोलियों तथा भाषा विकास के प्रमुख वादों से परिचित कराना।
3: छात्रों को राजभाषा हिंदी की संवैधानिक स्वरूप तथा राष्ट्रभाषा का प्रचार करने वाली संस्थाओं से परिचित कराना।
4: छात्रों में भाषा के वैज्ञानिक अध्ययन की दृष्टि निर्माण करना।
5: भाषा विज्ञान के अंगो तथा भाषा विज्ञान की शाखों का परिचय कराना।
6:भाषा विज्ञान का अन्य विज्ञानों से संबंध विशद करना।

G-203 Compulsory English (Test book – Panorama)

At the end of this course the student teacher should be able to :
1) Develop competency for self-learning the literary contributions of world renowned poets and authors.
2) Appreciate the excellent pieces of prose and poetry in English that develop aesthetic sense.
3) Provide exposure to native cultural experiences, situations to develop human values & social awareness.
4) Enhances the overall linguistic competence & communicative skills.
5) Familiarize with linguistic skills and empower to face challenges in global world.

G-204 General English (Advance study of English Language- Linguistics an Introduction)

At the end of this course the student teacher should be able to :
a)To understand various components of language
b)To Become aware of overall linguistic competence
c)To enhance communicative skills of students by developing insight into the working of language

G-204 General Hindi (कहानी एवं निबंध)

1:छात्रों को हिंदी के प्रतिनिधि कहानीकारों एवं कवियों से परिचित कराना।
2: छात्रों को हिंदी कहानी एवं नई कविता की विशेषताओं से परिचित कराना।
3: छात्रों को हिंदी के कार्य लाइन एवं व्यवहारिक पात्रों के स्वरूप ज्ञान देना।
4: छात्रों को परिभाषित शब्द विज्ञापन, भेटवार्त साक्षात्कार लेखन आदि हिंदी भाषा के व्यवहारिक क्षेत्रों से परिचित कराना।
5:छात्रों को हिंदी शब्द युग्म का ज्ञान कराना।

G-205 General History (History of the Marathas)

1. Student will develop the ability to analyse sources for Maratha History.
2. Student will learn significance of regional history and political foundation of the region.
3. It will enhance their perception of 17th century Maharashtra and India in context of Maratha history.
4. Appreciate the skills of leadership and the administrative system of the Marathas.
5. Students will be able to analyze the Marathas policy of expansionism and its consequences.
6. They will understand the role played by the Marathas in the 18th century India.
7. They will be acquainted with the art of diplomacy in the Deccan region.
8. It will help to enrich the knowledge of the administrative skills and profundity of diplomacy.

(G-210) General Geography Environmental geography

After Completion of this course the student will be able to :
1.Get acquainted with the new about dynamic environment among the student.
2.Acquire knowledge about fundamental concepts of environment geography for development in different areas.
3.Integrate various factors of economic development and dynamic aspect of

economic geography.
4.Analyse the the problems of environment, their utilization and conservation in the view of sustainable development

206 Special English (S1) Appreciating Drama

After Completion of this course the student will be able to:
1. Explain Drama as a major form of literature
2. Recognise the minor forms of Drama
3. Acquaint and enlighten literary and the performing dimensions of drama
4. Familiarize with the elements and the types of Drama
5. Explain the detailed study of a few sample masterpieces of English Drama from different parts of the world
6. Develop interest to appreciate and analyze drama independently
7. Developed aesthetics sense of Drama and to empower them to evaluate drama independently.

206 Special History (S1) (Medieval India-Sultanate Period to Mughal Period)

1. Provides examples of sources used to study various periods in history.
2. Relates key historical developments during medieval period occurring in one place with another.
3. Analyses socio - political and economic changes during medieval period
4. Estimate the foreign invasion and the achievement of rulers 1. Draws comparisons between policies of different rulers.
2. Understanding Role of Akbar in the consolidation of Mughal rule in India.
3. Understand Aurangzeb's conflict with Rajputas, Maratha and weakening Mughals age.
4. Analyses factors which led to the emergence of new religious ideas and movements (bhakti and
Sufi)

206 Special Hindi (S1) (काव्यशास्त्र।)

1: काव्यशास्त्र का परिचय देना।
2: काव्य हेतु और प्रयोजन परिचय देना।
3: काव्य के तत्व से परिचित कराना।
4:शब्दशक्ति से परिचित कराना।

5: काव्य भेद परिचय कराना।
6:अलंकार परिचय देना।
7:रस का परिचय देना।
8:आलोचना परिचय।
9:छंद परिचय।

- **Third Year B.AB.ED.**

B.Ed 301 Subject Education History (PEDAGOGY OF THE SCHOOL SUBJECT)

1. Understand the nature, scope and importance of the subject.
2. State the objectives of the subject.
3. Explain and use different approaches methods and techniques of teaching learning of subject.
4. Explain and understand the structure of subject.
5. Explain the concept and types of curriculum and syllabus.
6. Explain importance and use of core elements values and life skills.
7. Analyze the text book and content.
8. Analyze the various resources in teaching learning of subject.
9. Understand qualities of good teacher
10. To analyze and evaluate the new trends of current issues in subject.

B.Ed 301 Subject Education - Geography (Pedagogy of school subject)

After Completion of this course the student will be able to :
1. Recognise the Importance and the nature, scope of the subject.
2. State the objectives of the subject.
3. Explain and use different approaches, methods and techniques of teaching learning of subject.
4. Explain and understand the structure of subject.
5. Explain importance and use of core elements life skills & values.
6. Analyse the text book & content.

7. Explain the concept and types of curriculum and syllabus.
8. Analyse the various resources in teaching learning of subject.
9. Understanding qualities of good teacher.

B.Ed 303 Guidance and counselling

After Completion of this course the student will be able to:
1. Explain the concept and need of guidance.
2. Get acquainted with the principles and procedure of guidance.
3. Develop understanding about the role of school in guidance.
4. Identify various areas in guidance.
5. Explain the concept, need and meaning of counseling.
6. Get acquainted with the principles and process of counseling.
7. Realize the qualities and role of a school counselor.
8. familiarize with the tools and techniques in guidance and counseling.
9. Identify the need of counseling children with special needs and for parents.

G-304 Compulsory English (Textbook : Literary Pinnacle)

After Completion of this course the student will be able to:
1. Expose the best examples of literature in English and to contribute to their emotional quotient as well as independent thinking.
2.To acquire universal human values through best pieces of literature in English
3. To develop effective communication skills by developing ability to use right words in the right context.
4. To enhance employability of the students by developing their basic soft skills.
5. To revise and reinforce the learning of some important areas of grammar for better linguistic competence.

G-305 Optional English (Collection of Indian poems and Linguistic topics)

At the end of this course the student teacher should be able to .
1)Appreciate the contribution of Indian poets in English literature.
2) Recognize the expression of poetry that explain cultural heritage of India.

3) Identify the creative use of language in Indian English poetry.
4) Recognize the importance of advanced areas of language study.
5) Apply the detailed study of literature and language in day to day life.
6) Establish relationship between practical use of language and its theory.

G-305 Optional Hindi (सृनन संदर्भ और उपन्यास)

1:छात्रों को हिंदी आत्मकथा विधा तथा हिंदी की दीर्घ कविता काव्य नाटक के विकास तथा उनके स्वरूप का परिचय देना।
2:छात्रों को परिभाषिक शपद तथा संक्षिपतियों के आध्यम से सरकारी कार्यालय में प्रयुक्त की जाने वाली कार्यालयीन हिंदी से परिचित कराना।
3:छात्रों को सरकारी पत्र लेखन की पद्धति से अवगत कराना।
4:छात्रों को पत्रकारिता के विभिन्न पहलुओं से परिचित कराना।
5:छात्रों में अंग्रेजी से हिंदी में अनुवाद करने की कला से विकसित करना।

G-306 Optional History [HISTORY OF THE WORLD IN 20TH CENTURY (1914 CENTURY (1914-1992)]

1. To help the student to know Modern World. To acquaint the student with the Socio-economic & Political developments in other countries. And understand the contemporary world in the light of its background History.
2. To orient the students with political history of Modern World.
3. To acquaint Students about the main developments in the Contemporary World (To understand to important development in 20th century World.)
4. Impart knowledge about world concepts.
5. To enable students to understand the economic transition in World during the 20th Century.
6. Become aware of the principles, forces, processes and problems of the recent times.
7. To acquaint the students with growth of various political movements that shaped the modern world.
8. To highlight the rise and growth of nationalism as a movement in different parts of the world.

G-306 Optional Geography (Regional Geography of india)

After Completion of this course the student will be able to :
1.Acquire knowledge about Geographical and relative location of India
2. Develope & explore the awareness about Space relationship with neighboring countries among the student.
3.Acquaint the students with fundamental concepts of Major geological formations of India,Physiography and drainage system of India , Moonsoon world wide & in India different areas.
4. Integrate various factors of Population and dynamic aspect ofhuman settlements
5. Develope interest about the problems of Transportation Communication & Trade

307 Special English S2 (Appreciating Poetry)

After Completion this course the student will be able to:
a)To view literary works in their dynamic interface with the background
b)To understand the literature of the 19th century as a complex outcome of artistic, intellectual and socio-political cross-currents
c)To appreciate poetry as mirroring private personality, protest and subsequently, public concerns
d)To contextualize the impulses behind the significant emergence of women writing in the 19th century

307 Special Hindi S2 (काव्य नाटक और मध्ययुगीन साहित्य।)

1:हिंदी उपन्यास एवं नाटक के विविध मानदंडों के आधार पर छात्रों में समीक्षा की क्षमता निर्माण करना।
2:छात्रों की हिंदी उपन्यास एवं नाटक के आसवदान की क्षमता विकसित करना।
3: मध्ययुगीन संत एवं भक्तों के काव्य से छात्रों को परिचित कराना।
4:माध्ययुग के प्रतिनिधि काव्य के योगदान के विविध आयामों से छात्रों को परिचित कराना।
5:साहित्य कृतियों के माध्यम से साहित्य के शिल्प एवं सौंदर्य से परिचित करना

307 Special History S2 [History of Modern Maharashtra (1818 to 1960)]

The purpose of the course is to enable the students
1.to study the history of modern Maharashtra .
2. To highlight the ideas, institutions, forces and movements that contributes to the modern Maharashtra.
3.To acquaint the students with various interpretative perspectives.
4.To introduce the student to the regional history within a broad national framework.

- **Final Year B.A.B.Ed**

B.Ed 401 Introduction to Educational Research

After Completion of this course the student will be able to:
1. Explain the concept, need and importance of Research.
2. Identify various methods of types of research.
3. Realize the research problem and try to find solutions through research.
4. Use the library, on line sources & other sources of knowledge for educational research.
5. Prepare tools & techniques of educational research.

B.Ed 402 Advanced Pedagogy and Teaching

After Completion of this course the student will be able to:
1. Explain the concept of Advanced Pedagogy and its implementation in classroom
2. use of Pedagogical methods to meet the needs of diverse learners in the classroom.
3. Familiarize with the concept, need and importance of ICT and its application in education
4. Identify ICT based teaching-learning strategies & resources.
5. create awareness about appropriate use of ICT in teaching - lreaning process.

6. develop educational material using advanced pedagogical strategies and ICT tools idependently.

B.Ed 403 Advanced Evaluation procedures in learning

At the end of this course the student teacher should be able to .
1) Identify the difference between measurement, assessment and evaluation.
2) Acquires knowledge about tools and techniques of evaluation for learning.
3) Develops skill for preparing administering and interpreting the achievement test.
4) Comprehends the process of assessment for teaching learning.
5) Develops skills necessary to compute basic statistical measures to assess the learning.

B.Ed 404 Instructional Design and Integration of ICT in Teaching Learning

After Completion this course the student will be able to:
1. understand the concept of Advanced Pedagogy and its implementation in classroom
2. use of Pedagogical methods to meet the needs of diverse learners.
3. understand the concept, need and importance of ICT and its application in education
4. understand ICT based teaching-learning strategies & resources.
5. create awareness about appropriate use of ICT
6. develop educational material using advanced pedagogical strategies and ICT tools.

S3-405 Special English (Appreciating Novel)

After Completion of this course the student will be able to:
1. explain Novel as a major form of literature
2. recognise the various Types of Novel.
3. acquaint and enlighten literary and the different aspects of novel.
4. familiarize with the elements of novel.
5. explain the detailed study of a few sample masterpieces of English Novel from different parts of the world.
6. develop interest to appreciate and analyze novel independently.
7. develope aesthetics sense of Novel and to empower them to evaluate novel independently.

S3-405 Special Hindi (हिंदी साहित्य का इतिहास)

1:हिंदी साहित्य के इतिहास की लेखन परंपरा से अवगत करना।
2:हिंदी साहित्य के इतिहास के काल खंडों के नामकरण एवं पृष्ठभूमि का परिचय देना।
3:हिंदी साहित्य की प्रतिनिधि रचनाओं और रचनाकारों का महत्व प्रदेश पूर्ववर्ती तथा परवर्ती प्रभाव विविध करना।
4:हिंदी साहित्य के विकास क्रम तथा साहित्य के परिवर्तन के कारणों का परिचय देना।
5:हिंदी साहित्य का इतिहास के माध्यम से साहित्य और योग जीवन का संबंध में विशद करना।
6:आधुनिक युग की सामाजिक राजनीतिक धार्मिक साहित्यिक तथा आर्थिक परिस्थितियों के बदलाव के परिपेक्ष्य में हिंदी साहित्य में आए हुए बदलाव से छात्रों को अवगत कराना.

S3-405 Special History (INTRODUCTION TO HISTORY)

1. To orient students about how history is studied, written and understood.
2. To explain methods and tools of data collection
3. To understand the meaning of Evolution of Historiography.
4. To study the Various Views of Historiography.
5. To study the approaches to Historiography.
6. To study the types of Indian Historiography.
7. To describe importance of inter-disciplinary research.

8. To introduce students to the basics of research.
9. To acquaint the student with the recent research in History.
10. Learn how to use sources in their presentation.

S4-406 Special English (Introduction to Literary Criticism)

After Completion this course the student will be able to:
a)To use some important critical terms.
b) become aware the nature and function of literature and criticism
c) impart the technique of close reading of literary texts
d) understand the various literary theories and critical approaches
e) be familiar with the tenets of practical criticism

S4-406 Special Hindi (काव्यशास्त्र)

1: काव्यशास्त्र का परिचय देना।
2: काव्य हेतु और प्रयोजन परिचय देना।
3: काव्य के तत्व से परिचित कराना।
4:शब्दशक्ति से परिचित कराना।
5: काव्य भेद परिचय कराना।
6:अलंकार परिचय देना।
7:रस का परिचय देना।
8:आलोचना परिचय।
9:छंद परिचय।

S4-406 Special History [HISTORY OF ASIA IN 20TH CENTURY (1914 –1992)]

1. To orient the students with political history of Asia.
2. To enable students to understand the economic transition in Asia during 20th Centuries.

3. Understand the important developments in the 20th century Asia in a Thematic approach.
4. To provide students with an overall view and broad perspective different movements connected with Nationalist aspirations in the region of Asia in general.
5. To empower students to cope with the challenges of globalization.

B.Sc. B.Ed. (Integrated)

Program Outcome (Po's)

After the successful completion of four years B.Sc.B.Ed. program, students teacher will be able to develop :

Content Knowledge:

- Students will able to get exposed to a strong theoretical and practical background in fundamental concepts of sciences of different subject areas.
- Depending on the student's specialization these areas include Chemistry, Physics, Mathematics, Botany, Zoology.
- The student will determine the appropriate level of technology for use in a) experimental design and implementation, b) analysis of experimental data and c) numerical and mathematical methods in problem solutions.

Teaching competencies:

- Develops teaching ability of students through different lessons like micro-teaching, integration lessons, Simulation lessons, Practice lessons, Seminars, Presentations, etc.
- Develop competencies among student-teachers to select and use appropriate assessment strategies for facilitating learning.

Entrepreneurship :

- Students can start nursery, mushroom cultivation, biofertilizer production, fruit preservation and horticultural practices, tissue culture laboratory.
- Science graduates can go to serve in industries or may option for establishing their industrial unit.
- Students can start classes, preschools, schools and able to do work as an expert.

Divergent thinking:

- Been able to think creatively to propose novel ideas in explaining facts and figures or providing a new solution to the problems.
- Employ critical thinking and scientific knowledge to design, carry out, record, and analyze the results of chemical reactions.

Value and Skill development:

- Imbibed, social, moral, ethical, personal, and social life leading to highly cultured and civilized personality.
- Develop scientific temper and thus prove more beneficial to make a nation grow at a rapid pace.
- Holistic development and academic excellence contribute effectively to the understanding of the subject along with sensitizing the students towards the need for keeping the environment clean and conserve our natural resources.
- Build the right attitude, values needed for the teaching profession.

Use of ICT:

- Compilation and interpretation of Biological data using computer software.
- Use modern techniques, decent equipment, and Chemistry software.

Leadership Skill:

- Students drive the team by working together in art and drama, social service, group activities.
- Developed flair by participating in various social and cultural activities voluntarily, to spread knowledge, creating awareness about the social evils, blind faith.

Program Specific Outcome

- Demonstrate, solve, and understanding major concepts in all disciplines of chemistry.
- To explain nomenclature, stereochemistry, structures, reactivity, and mechanism of the chemical reactions.
- Students will also be able to obtain an overview of phylogenetic relationships and evolutionary trends of these organisms
- Botany covers a wide range of scientific disciplines concerned with the study of plants, algae, and fungi, including structure, growth, reproduction, metabolism, development, diseases, chemical properties, and evolutionary relationships among taxonomic groups.

- Acquired the skills in handling scientific instruments, planning, and performing laboratory experiments.
- Demonstrate a rigorous understanding of the core theories & principles of physics, which includes mechanics, electromagnetism, thermodynamics, & quantum mechanics. Learn the Concepts as Quantum Mechanics, Relativity, introduced at the degree level to understand nature at atomic levels.
- A student should be able to recall basic facts about mathematics and should be able to display knowledge of conventions such as notations, terminology, and cognize basic geometrical figures and graphical displays, state important facts resulting from their studies.

M.C.E. Society's

H. G. M. Azam College of Education, Pune

Course outcomes First Year B.Sc. B.Ed. (Integrated)

Course	Outcomes After completion of this course, students will able to,
BED111 Contemporary Indian Education, Gender and Society	• Understand the concept and aims ofeducation. • Learn the concept of social change and process of socialchange. • Develop gender sensibility among studentteacher. • Make student understand about the gender issues faced inschool. • Make them aware about constitutional provision regarding gendereducation. • Identify the contemporary issues ineducation. • Make them aware about the contribution of thinkers in education
BED 112 Learning Resources	• Know role of language in science. • Explain and participate in Seminars. • Prepare Visual materials-charts, models films, and filmstrips, radio, TV, • Use supplementary books, handbooks, laboratory guide, science kits etc. • Discuss field trips, national parks, study tours, community as a resource site for learning. • Describe ICT in learning physical science, websites on physical science, interactive website, on line learning and preparation of projects using ICT. • Use of science lab. facilities, equipment's, materials and manuals, science records • Prepare unit planning and lesson planning. • Aware about Environmental day, Earth Day, science day etc.

	• Explain STS connections. • Describe competency of physical science teacher through action research. • Develop write up for research communication.
CH-111 Physical and Inorganic Chemistry	• Explain rules for filling electrons in various orbitals- Aufbau's principle, Pauli exclusion principle, Hund's rule of maximum multiplicity. • Know about thermodynamic principles to physical and chemical process • Know Exergonic and endergonic reaction. • Define various types of chemical bonds- Ionic, covalent, coordinate and metallicbond. • Understand the classification of elements as main group, transition and innertransition elements. • Understand Calculations of enthalpy , Bond energy, Bond dissociation energy , resonance energy • Understand Gas equilibrium, equilibrium constant and molecular interpretation of equilibrium constant • Apply application of Van'tHaff equation • Apply Third law of thermodynamic and its application
BO111 Plant life and Utilization-I, Plant Anatomy and Morphology	• Know the symbiotic association between various organism like lichen, mycorrizae etc. • Know the economic importance and Structure of fungi, algae, bryophytes. • Familiarize the students with microbes and cryptogams. The students are made aware about the ecosystem so as to bring awareness on different aspects of Biodiversity and conservation of Biodiversity. • Understand various processes of plants like photosynthesis (particular emphasis on light and dark reactions), respiration,

	translocation, absorption and nitrogen metabolism. The students also get an insight into the various types of plant movements. • Understand the diversity among algae, fungi, bryophytes and pteridophytes. Understand structural adaptations in plants growing in different environments. • To create awareness about cultivation, conservation and sustainable utilization of biodiversity
PHY-111 Mechanics, properties of matter and Physics principle and application.	• Foster scientific attitude, provide in-depth knowledge of scientific and technological concepts of Physics. • To enrich knowledge Of basic physics through problem solving, minor/major projects, seminars, tutorials.. • To familiarize with recent scientific and technological developments of Properties of matters. • To Know foundation of research and development in Fluid Mechanics. • To understand the general structure of atom, spectrum of hydrogen atom. • To understand the atomic excitation and LASER principles.. • To understand the bonding mechanism and its different types • To demonstrate an understanding of electromagnetic waves and its spectrum. • Understand the types and sources of electromagnetic waves and applications. • To help students to learn various experimental and computational tools thereby developing analytical abilities to address real world problems related to physics. • To train students in skills related to research, education, industry, and market of physics. • To help students to build-up a progressive and successful career in Physics.

MT-111 Algebra and Calculus-I	• Give the students a sufficient knowledge of fundamental principles, methods and a clear perception of innumerous power of mathematical ideas and tools and know how to use them by modeling, solving and interpreting. • Enhancing students' overall development and to equip them with mathematical modeling abilities, problem solving skills , creative talent and power of communication necessaryfor various kinds of employment
ZO-111 Animal diversity -I and Animal Ecology	• Know taxonomy, systematic, Linnaean system of classification, concept of species, binomial nomenclature. • Identify animal interaction. • Understand silent feature of phylum protozoa, classification of phylum Protozoa,type study and economic importance. • Explains general character of kingdom Animalia, phylum Cnidaria and phylumPlatyhelminthes. • Explains about ecology and ecosystem there types, structure and composition. • Classify about food chain food web and concept of Eutrophication. • Create awareness about characteristics of population and Community, understandExponential and Logistic growth. • Aware about the population regulation density-dependent and independent factor,the competition and Beneficial Associations.
SECOND SEMESTER	
BED125 Teaching and learning	• To know concept of Learning. • To know concept of Teaching. • To comprehend the theories of learning. • To realize the connection between learning in school and learning outside school • To recognize the relationship between teaching and learning. • To understands idea of learning as construction of knowledge.

	• To understands that teaching is a profession • To understands different approaches of teaching that support learning. • To realize the significance of the context in which the teaching learning process occurs. • To value the relevance of reflection in the teaching learning process. • To analyze the complex process of teaching
BED 126 Education for peace	• Understand the concept of human rights and child rights. • Realize the importance and need of human rights and child rights. • Grasp the role of the Constitution in human rights and child rights. • Comprehend the concept of peace education. • Recognize the importance of peace education in national development. • Know the pedagogy and evaluation for peace education
BED127 Environmental Studies	• To understand maintenance of ecological balance. • To understand concept of environmental education and Sustainable development. • To understand community based approach of teaching and learning environmental science. • To impart basic ecological concepts how organisms, interact with each other and with the environment. • To impart knowledge about environmental education related policies and its implementation at various level. • To impart knowledge of public awareness about sensitization towards environment. Community engagement etc. 1. To impart knowledge about environmental conservation, west management and west reduction. 2. To impart knowledge about role of educator, environmental advocacy and sensitization competency of educator etc.

	3. To impart knowledge about recent trends in environmental science such as global warming, climate change and measures for control over global warming.
CH-123 Organic and Analytical Chemistry	• Know strength of organic acids and bases: Comparative study with emphasis on factors affectingpK values. • Define term mole, millimole, molar concentration, molar equilibrium concentration and Percent Concentration. • Understand interconversion of Wedge Formula, Newmann, Sawhorse and Fischer representations. • Understand Schrodinger equation for hydrogen atom • Catalytic hydrogenation, Wurtz reaction, Kolbe's synthesis, from Grignard reagent.Reactions: Free radical Substitution: Halogenation. • Apply non-bonded lone pairs in shape of molecule • Illustrate analytical problems and stiochiometric calculation • Elemental analysis -Detection of nitrogen, sulfur,halogen and phosphorous by Lassiagen's test.
BO123 Plant Life and Utilization –II, Principals of plant science	• Know scope and importance of plant physiology. • Explains basic of plant life, reproduction and their survival in nature • Understand ultra-structure of cell wall, plasma membrane and cell organelles. • Impart an insight into the internal structure and reproduction of the most evolved group of plants, the angiosperms. • Identify the role of anatomy in solving the taxonomic and phylogenetic problems. • To create awareness about cultivation, conservation and sustainable utilization of biodiversity
PHY-123 Heat and	• Provide in-depth knowledge of fundamentalthermodynamics. • To enrich knowledge of basic thermodynamics law such as zeroth,

Thermodynamic, Electricity and Magnetism	first and second lawof thermodynamics. • To familiarize with recent scientific and technological developments of heat transfermechanism. • To understand the general process of thermodynamics. • To understand the heat engine and its efficiency. • To understand the concept of the electric force, electric field and electric potential forstationary charges • To understand the dielectric phenomenon and effect of electric field on dielectric. • To Study magnetic field for steady currents using Biot-Savart and Ampere & Circuitallaws • To study magnetic materials and its properties.
MT-123 Analytical Geometry and Calculus – II	• Conventions such asnotations, terminology and recognize basic geometrical figures andgraphical displays , state important facts resulting from their studies. • Get adequate exposure to global and local concerns thatexplore them many aspects of Mathematical Sciences • Apply their skills and knowledge, that is, translateinformation presented verbally into mathematical form, select and use appropriate mathematical formulae or techniques in order to processinformation and draw the relevant conclusion.
ZO-123 Animal diversity –II and cell biology	• Know about phylum Aschelminthes, Arthropods, Mollusca. • Understand the Animal diversity around us. • Understand the compare between prokaryotic and eukaryotics. • Understand about cell and component of cell like mitochondria, plasma membrane, nucleus, etc. • Illustrate about function of cell organells. • Explain about structure of cell organelles, stains and dye. • Prepare about cell division. • Draw silent feature of phylum arthropods, Mollusca, etc.

	• Understand the underlying principles of classification of different Phylum • Understand the terminology needed in classification. • Understand the differences and similarities in the various aspects of classification. • Classify invertebrates
THIRD SEMESTER	
LA 231 Foundation Course I – General English I'	• To expose students to the best examples of prose and poetry in English so that they realize the beauty and communicative power of English. • To instill human values and develop the character of students as responsible citizens of the world. • To develop the ability to appreciate ideas and think critically. • To enhance employability of the students by developing their linguistic competence and communicative skills • To understand the basics of literature and language. • To understand the literary merit, beauty and creative use of language & to increase awareness of the technical aspects and their practical usage
BED 2310 Child hood and growing up	• Know Identify the educational needs of diverse learners. • Become aware regarding the individual differences among learners. • Get acquainted with the new (contemporary) theories of learning. • Become familiar with the impact of mass communication media on childhood andgrowing up. • Understand Political, Social and Cultural dimensions along with their implications onchildhood and growing up. • Understand the growth and development of the learner and its importance in theteaching learning process with special reference to adolescent stage.
CH-235	• Know concept of kinetics, terms used, rate laws, molecularity,

Physical and Inorganic Chemistry	order. • Know Determination of order of reaction by integrated rate equation method, graphical method, half-life method and differential method. • Define different terms related to the coordination chemistry • Explain principle of CFT. • Explain derive integrated rate laws, characteristics, expression for half-life and examples of zero order, first order, and second order reactions. • Solve the problem based applying theory and equations. • Draw the structures aromatic hydrocarbons from their names or from structure name can be assigned. • Apply adsorption process to real life problem. • Apply principles of VBT to explain bonding in coordination compound ofdifferent geometries.
BO235 Taxonomy of Angiosperms and Plant Physiology	• To know advance techniques in plant sciences like tissue culture, Phytoremediation, plant disease management, formulation of new herbal drugs etc. • Know comparative account of various systems of classification Student can describe morphological & reproductive characters of plant and also identified different plant families and classification. • Describe morphological & reproductive characters of plant and also identified different plant families and classification.. • Understand plant & water relation.
PHY-236 Mathematical methods in physics and Electronics	• To know importance of mathematics in physics. • Know Complex algebra to solve physics complex problem • Understand the complex algebra useful in physics courses • Understand the concept of partial differentiation. • Understand the role of partial differential equations in physics • Understand vector algebra useful in mathematics and physics

	• Understand the relations in electricity • Understand the properties and working of transistors. • Understand the functions of operational amplifiers. • Understand the Boolean algebra and logic circuits. • Design circuits using transistors and operational amplifiers. • Apply laws of electrical circuits to different circuits.
MT-235 MathematicsCalculus of Several Variables & Numerical Methods	• Recall basic facts about mathematics and should be able to displayknowledge of conventions such as notations, terminology and recognize basic geometricalfigures and graphical displays, state important facts resulting from their studies. • Get a relational understanding of mathematical concepts and concernedstructures, and should be able to follow the patterns involved, mathematical reasoning. • Adequate exposure to global and local concerns that explore them many aspects of Mathematical Sciences. • Apply their skills and knowledge, that is, translate information presented verbally into mathematical form, select and use appropriate mathematical formulae or techniques in order to process the information and draw the relevant conclusion. • Made aware of history of mathematics and hence of its past, present andfuture role as part of our culture.
ZO-235 Animal Diversity –III& Applied Zoology	• Identify the diversity of higher vertebrates. • Understand classification higher vertebrates. • Understand the complexity of higher vertebrates • Understand different life functions of higher vertebrates. • Understand the linkage among different groups of higher vertebrates. • Understands the basics about beekeeping tools, equipment, and managing beehives. • Understands the biology, varieties of silkworms and the basic

	techniques of silk production. • Understands the types of agricultural pests, Major insect pests of agricultural importance and Pest control practices. • Become aware regarding his role and responsibility towards nature as a protector, • Understand his role as a trustee and conservator of life which he has achieved by learning, observing and understanding life.
BED2312 Agriculture -I	• Know about seasonal flowers, Ornamental trees. • Know maintenance of lawn in ornamental garden. • Pre and post-harvest management practices of cultivation flower species. • To do Transplanting of Seedlings and repotting. • To design ornamental garden.
BED 2313 Electronics-I	• To know basics of operational amplifier • To understand logic gates and truth tables • To understand combinational logical circuits • To understand sequential logical circuits • To understand basic application circuits of op amp • To understand op amp circuits and its usefulness in different applications • To choose proper electronic devices as per the need of application • To teach students how to draw different symbols and circuit diagrams • To develop skill of circuit connections • To train them to design and analyze the circuits for specific purpose • To reduce the expression using Boolean theorems • To compare performance parameters of op amp ICs available in market • Study different types of ADC and their performance parameters

FOURTH SEMESTER	
LA 242 Foundation Course II – General English II’	• To apply the detailed study of literature and language in day to day life and to establish relationship between practical use of language and its theory. • To revise and reinforce the learning of some important areas of grammar for better linguistic competence. • To develop effective communication skills by developing ability to use right words in the right context. • To implement core elements, life skills and values in teaching learning process. • To enhance the overall linguistic competence & communicative skills & to familiarize with linguistic skills and empower to face challenges in global world.
BED 2414 Quality & Management Of Secondary Education	• Understand the concept of Management. • Understand the concept of quality and enlist the dimensions of quality. • Understand the need and importance of school accreditation. • Acquire knowledge regarding the concept and process of Human Resource Management inSchool. • Get acquainted with the essential infrastructural resources for quality management. • Identify the problems and its management in secondary and Higher secondary education. • Become familiar with different types of school boards in India. • Understand the administrative set up of Government and function of supportive authorities.
BED 2315 Pedagogy of school subject(Science, Math)	• To know the competencies of general science teacher. • To familiarize facts, terms, concepts, laws & principles in general science.

	• To understand nature, scope & importance of general science at secondary & higher secondary level. • To implement methods & models of teaching learning of general science and mathematics. • Understand the role of partial differential equations in physics • Understand vector algebra useful in mathematics and physics • To Analyze the textbook & content of general science at secondary & higher secondary level. • To Analyze the textbook & content of mathematics at secondary & higher secondary level.
CH-247 Organic and Analytical Chemistry	• Define different terms in column chromatography • Explain Kohlrausch's law and its Applications. • Explain / derive Beer's law of absorptivity. • Explain thermodynamic aspects of Ideal solution • Differentiate between ideal and non-ideal solutions • Explain synthesis of carboxylic acid. • Identify the structures aldehydes and ketones from their names. • Apply solvent extraction to separate the components of from mixture interest. • Draw the structures of different conformations of cyclohexane.
BO247 Plant Anatomy, Embryology and Biotechnology	• Understand the biochemical nature of nucleic acid and their role in living systems. • Understand the fundamental of recombinant DNA technology • Understand tissue culture techniques. • Understand the concept of bioinformatics, genomics & proteomics. • Understand mechanical tissue system, epidermal tissue system • Understand mega sporangium and female gametophyte
PHY-247	• To Know how light can constructively and destructively interfere

Oscillation, waves, sound, and optics	• To define the decibel scale qualitatively, and give examples of sounds at various levels. • Describe oscillatory motion with graphs and equations, and use these descriptions tosolve problems of oscillatory motion. • Explain oscillation in terms of energy exchange, giving various examples. • Explain the Doppler Effect, and predict in qualitative terms the frequency change that willoccur for a stationary and a moving observer. Understand the role of partial differentialequations in physics • Explain in qualitative terms how frequency, amplitude, and wave shape affect the pitch,intensity, and quality of tones produced by musical instruments understand theproperties and working of transistors. • Explain in qualitative terms how frequency, amplitude, and wave shape affect the pitch,intensity, and quality of tones produced by musical instruments • Understand the mathematical description of travelling and standing waves • To analyze simple examples of interference and diffraction phenomena.
MT-247 Linear Algebra & Vector Calculus	• Know linear algebra regarding eigen values of various types of linear operatorsand their possible canonical forms along with linear functionals, bilinear forms and inner products. • Have knowledge of central concepts in multivariable analysis, including space curves; directional derivative; gradient; multiple integrals; line and surface integrals; vector fields; divergence, curl and flux; the theorems of Green and Stokes, and the divergence theorem. • Apply techniques from multivariable analysis to set up and solve

	mathematical models, to deduce simple mathematical results, and to calculate integrals. • Set up and solve simple optimization problems, including problems withconstraints.
ZO-247 Animal Diversity IV &Applied Zoology II	• Know silent feature of class Reptile, Aves and Mammalia. • Explains apiculture and Fisheries. • Understand life cycle and behavior of Bee, habit and habitat of freshwater forms • Classify fishery byproduct. • Create awareness about importance of apiculture and fisheries. • Draw adaptation in Reptiles, Migration in birds, etc.
BED 2316 Agriculture- II	• Know the importance of kitchen gardening. • Know the use of fertilizer and manures. • Identify different seasonal vegetable crop • Understand cultivation practices of vegetable plant. • Explain the fruit preservation methods. • Prepare fruit products like jam, jelly etc.
BED 2317 Electronics-II	• To understand basics of electronic circuits • To understand few electronic systems • To build and understand application circuits of electronic devices. • To encourage the students for making use of simulation software for testing the circuits before experimentation. • To make the students learn through problem solving • To solve problems based on network theorems. • To perform simulations using simulator for analyzing network performance
FIFTH SEMESTER	
BED 3516 Knowledge &Language across curriculum	• Realize the interrelationship between knowledge, information and skills in the presentSocial context. • Understand the sources and generation of knowledge.

	• Understand the dimensions of curriculum development • Understand the social basis of framing curriculum • Get acquainted with the views of Indian thinkers on the social basis of framing curriculum. • Comprehend the concept and relevance of multilingualism in the Indian context. • Become familiar with the strategies for developing language skills.
CH359 Physical I Chemistry	• Know historical of development of quantum mechanics in chemistry. • Know Photochemical reactions: photosynthesis, photolysis, photocatalysis, photosensitization • Understand the differences between classical and quantum mechanics. • Understand the term additive and constitutive properties. • Understanding of De Broglie hypothesis and the uncertainty principle. • Explain the difference between Rayleigh, Stokes and anti-Stokes lines in a Raman spectrum. • Explain photochemical phenomena like fluorescence and phosphorescence, Chemiluminescence. • Solve Schrodinger equation for 1D, 2D and 3D model. • Draw the Stokes and anti-Stokes lines in a Raman spectrum
MT359 Real Analysis-I	• learn the basic facts in logic and set theory • learn to define sequence in terms of functions from N to a subset of R and to understand several properties of the real line. • recognize bounded, convergent, divergent, Cauchy and monotonic sequences and to calculate their limit superior, limit inferior, and the limit of a bounded sequence.

	• use the ratio, root, alternating series and limit comparison tests for convergence and absoluteconvergence of an infinite series of real numbers.
ZO359 Pest Management	• Define pest and type of pest. • Explain why identification of the pest is the first step in developing an effective pestcontrol strategy. • Explain the differences between continuous pests, sporadic pests, and potential pests. • Explain what is meant by prevention, suppression, and eradication of pests. • Describe "thresholds" and why they are an important consideration in developing a pest control strategy. • Describe "monitoring" as it relates to pest control and explain why it is important to pest control strategy
PHY359 Mathematical Methods in Physics II	• To know Curvilinear co ordinate System. • To Understand the Special theory relativity • To Understand the concept of partial differentiation. • To Understand Special Function • To Understand Postulates of special theory of relativity • To Apply Lorentz Transformation for Solving Problems • To Solve Problems related to curvilinear coordinate system
BO359 Cryptogamic Botany	• Know meaning. Types- Lower Cryptogams • Know General characters, Habit and habitats of Fungi. • Know Symbiotic Associations - Lichens, Mycorrhiza • Understand Habitat reproduction and Classification given by(G.M.Smith 1955) • Understand life cycle of fungi with reference to taxonomic position
CH 3510 Inorganic I Chemistry	• Know electronic configuration of lanthanides and actinides. • Know Intrinsic and extrinsic semiconductor.

	• Know the meaning of term f-block elements, Inner transition elements, lanthanides, actinides. • Explain MOT of Octahedral complexes with sigma bonding. • Explain the meaning of metal & semiconductor. • Explain electroneutrality principle and different types of pi bonding. • Understand classification of reactions of coordination compounds • Understand Stereochemistry of mechanism • Draw n (E) & N (E) curves.
PHY3510 Classical Electrodynamics	• To introduce the basic mathematical concepts related to electromagnetic vector fields. • To impart knowledge on the concepts of electrostatics, electric potential, energy density and their applications. • To impart knowledge on the concepts of magnetostatics, magnetic flux density, scalar and vector potential and its applications. • To impart knowledge on the concepts of Faraday‘s law, induced emf and Maxwell‘s equations. • To impart knowledge on the concepts of Concepts of electromagnetic waves and Transmission lines.
MT3510 Group Theory	• Recognize the mathematical objects that are groups, and classify them as abelian, cyclic and permutation groups, etc; • Analyze consequences of Lagrange’s theorem • learn about structure preserving maps between groups and their consequences. • explain the significance of the notion of cosets, normal subgroups,

	and factor groups
BO3510 Cell and Molecular Biology	• Know Interdisciplinary nature of Cell Biology. • Know Morphology and ultrastructure of nucleus. • Know about Cell signaling • Understand Ultrastructure, components and functions of Cell organelles. • Explore more about Chromosomes.
ZO3510 Histology	• Identify type of tissues. • Label diagram (V.S & T.S) of tissue. • Understand the histological aspects of mammalian organs. • Explain the important features of different types of tissues in organ system. • Understand the classification of various types of basic tissues. • Describe structure & functions of various tissues in organ system. • Illustrate histological structure of various glands and its functions.
CH3511 Analytical I Chemistry	• Identify important parameters in analytical processes or estimations. • Explain different principles involved in the gravimetry, spectrophotometry, parameters in instrumental analysis, qualitative analysis. • Discuss procedure for different types analyses included in the syllabus. • Compare among the different analytical terms, process and analytical methods. • Demonstrate theoretical principles with help of practical. • Design analytical procedure for given sample. • Apply whatever theoretical principles he has studied in theory during practical session in laboratory.

PHY3511 Classical Mechanics	• To demonstrate knowledge and understanding of the following fundamental concepts • in: • the dynamics of system of particles, • motion of rigid body, • Lagrangian and Hamiltonian formulation of mechanics • To represent the equations of motion for complicated mechanical systems using the • Lagrangian and Hamiltonian formulation of classical mechanics. • To develop math skills as applied to physics.
BO3511 Medicinal Botany	• Know importance of medicinal plants . • Understand concept of Indigenous Medicinal Sciences. • Know History, concept of Unani • Explore plants used in ayurvedic treatments • Explore plantsused in Siddha medicine. • Conserve endangered and endemic medicinal plants.
MT3511 Ordinary Differential Equations	• Understand the genesis of ordinary differential equations. • learn various techniques of getting exact solutions of solvable first order differentialequations and linear differential equations of higher order. • Grasp the concept of a general solution of a linear differential equation of an arbitrary orderand also learn a few methods to obtain the general solution of such equations
ZO3511 Biological Chemistry	• Define the basic concepts and significance of biochemistry. • Understand the basic concepts pH and Buffers • Explain chemical structures of carbohydrate, and their biological and clinical significance. • Describe structure and importance of proteins and lipids • Discuss the variations in enzyme activity and kinetics • Relate activity of enzyme at different pH.

	• Interpret structure and importance of proteins, carbohydrates and lipids
SIXTH SEMESTER	
BED 3620 Inclusive education	• To understand historical aspects of Inclusive Education • 2. To review various policies for Inclusive Education • To understand the concept, need and principles of Inclusive Education • To know the importance of development of competencies for successful Inclusive Education • To understand the idea of inclusive school • To know the importance of collaboration among various factors of society for inclusive Education.
BED 3621 Research in education	• To understand the concept, need and importance of Research. • To make them aware of the various methods of types of research. • To help the learner to realize the research problem and try to find solutions through research. • Use the library, on line sources & other sources of knowledge for educational research. • To help the learner to prepare tools & techniques of educational research.
CH 3613 Organic I Chemistry	• Define and classify polynuclear and hetreonuclear aromatic hydrocarbons. • Understand the E1, E2 and E1cB mechanism with evidences of these reactions. • Understand synthetic applications ethyl acetoacetate and malonic ester • Understand different types of intermediate in rearrangement reactions.

	• Understand stereochemistry by using models and learn reactivity of geometrical isomers. • Explain the synthesis of chemical reactions of polynuclear and hetreonuclear aromatic Hydrocarbons. • Explain Hoffmann and Saytzeff's Orientation . • Explain effect of factors on the rate elimination reactions. • Draw the structure, synthesis of polynuclear and hetreonuclear aromatic hydrocarbons.
PHY 3613 Atomic and Molecular Physics	• To describe the atomic spectra of one and two valance electron atoms. • To Describe electron spin and nuclear magnetic resonance spectroscopy and their applications.. • To explain the change in behavior of atoms in external applied electric and magnetic field. • To explain rotational, vibrational, electronic and Raman spectra of molecules.
MT 3613 Operations Research	• Analyze and solve linear programming models of real-life situations. • The graphical solution of LPP with only two variables, and illustrate the concept of convex set and extreme points. The theory of the simplex method is developed. • The relationships between the primal and dual problems and their solutions with applications • transportation, assignment and two-person zero-sum game problem.
BO 3613 Archegoniate	• Know introduction to Archegoniate. • Know Introduction, general characters, distribution of Bryophytes to land habit. • Know Vascular Cryptogams, General characteristics, Classification

	according to K.R. Sporne • Know Ecological and Economical Importance of Pteridophytes • Understand classification of Bryophytes according to G.M. Smith. • Understand Range of thallus organization, Pteridophytes and Algal hypothesis, evolution of sporophyte • Understand Life Cycle of Bryophytes with respect to Taxonomic position. • Understand Study of Life Cycle of Pteridophytes with respect to Taxonomic position
ZO 3613 Genetics	• Know classical and modern concept of gene, Cistron, Muton and Recon. • Know Hardy Weinberg law and its equilibrium. • Define Mendel's law of Inheritance. • Explain exceptions to mendelian Inheritance. • Describe Gene mutation, types of mutation, mutagenic agents. • Explain types of sex determination and Parthenogenesis, Hypodiploidy and Gynandromorphism. • Describe population genetics. • Explain human population genetics and sex-linked inheritance in human
CH 3614 Industrial Chemistry	• Know the physico-chemical principals involved in manufacturing process. • Know the concept of basic chemicals their uses and manufacturing process. • Understand classification and general properties of pigment. • Understand the important of Sugar industry, Fermentation industry, Soap industry. • Understand production processes of zinc oxide and iron oxide.

	• Explain the synthesis of chemical reactions of polynuclear and hetreonuclear aromatic Hydrocarbons. • Explain washing action of soap and detergents . • Explain synthesis, Structures, properties and applications of dyes.
PHY 3614 Computational Physics	• Identify modern programming methods and describe the extent and limitations of computational methods in physics, • Identify and describe the characteristics of various numerical methods. • Independently program computers using leading-edge tools, • Formulate and computationally solve a selection of problems in physics, • Use the tools, methodologies, language and conventions of physics to test andcommunicate ideas and explanations.
MT 3614 Differential Geometry	• Gain an understanding to solve problems with the use of differential geometry to diverse situations in mathematical contexts. • Develop different properties associated with curves and surfaces. • Demonstrate a depth of understanding in advanced mathematical topics in relation to geometry of curves and surfaces Learn to analyze mappings between spaces. • Apply the theory of differential geometry to specific research problems in mathematics orother fields.
BO 3614 Genetics	• Know History, Definition, Concept, branches and applications of Genetics. • Define, Concept, Characters of multiple alleles. • Define Concept, and types Mutation. • Know Concept of Sex chromosomes and autosomes. • Understand Mendelism. • Understand Genetic interaction, Epistatic interactions. • Understand Linkage, Recombination and Crossing Over.

	• Understand Cytoplasmic & Quantitative Inheritance.
ZO 3614 Developmental Biology	• Know definition and scope of Developmental biology. • Know theories of Developmental biology. • Explain concepts in Developmental biology. • Understand Gametogenesis and its structure. • Explain Cleavage and Blastula. • Describe basic cell movements in gastrulation and concept of organizer. • Describe chick embryology
CH 3615 Environmental Chemistry	• Know hydrological Cycle , Organic and inorganic pollutants • Know importance and conservation of environment. • Know importance of biogeochemical cycles • Understand the Importance and conservation of environment. • Understand the water quality parameters. • Explain the water resources Hydrological Cycle, Organic and inorganic pollutants.
PHY 3615 Elements of Material Science	• To know Material properties like mechanical electrical and thermal • To identify Defects in solids • To study Single phase alloys, Deformation of metals • To know about ceramic materials and electromagnetic behavior of ceramics. • To study phase diagram • To identify smart materials
MT 3615 Number theory	• Know roots, quadratic residues, and quadratic non-residues. • Solve problems related to prime numbers. • Explain about number theoretic functions and modular arithmetic. • Explain the Law of Quadratic Reciprocity and other methods to

	classify numbers as primitive
BO 3615 Plant Diversity and Human Health	• Know scope of plant diversity at the ecosystem level. • Know Loss of Biodiversity. • Know Role of plants in relation to Human Welfare. • Understand concept of Agrobiodiversity. • Understand Management of Plant Biodiversity
ZO 3615 Parasitology	• Identify basic terminologies in parasitology. • Understand the concepts of animal association with examples. • Understand the morphology and life cycle of common parasites (Protists and Platyhelminthes). • Explain the phenomenon of Host-parasite relationship. • Explain the importance of arthropod vectors with examples. Describe parasitic worm
SEVENTH SEMESTER	
BED 4724 Assessment and Evaluation for Learning	• To understand Introduction to Assessment and Evaluation. • To understand. Concept of Cognitive, Affective, Psychology domain of learning • To know about Revised taxonomy of objectives (2001) and its implications for assessment. • To know Need of CCE its importance • To aware Portfolio assessment. • To know implications Construction, Interpretation and reporting of student's performance • To assess portfolios for understanding students' progress, andevaluate the techniques used for group processes.
CH 4717 Physical II Chemistry	• Know the electrochemical cells: Explanation of Daniell cell, Conventions to represent electrochemical cells.

	• Know thermodynamic conditions of reversible cell, Explanations of reversible and irreversible electrochemical cell with suitable example. • Know the Weston standard cell. • Understand Weiss and Millers Indices, determination of Miller Indices. • Understand Bravais lattices, space groups, seven crystal systems and fourteen Bravais lattices. • Distinguish between crystalline and amorphous solids / anisotropic and isotropic solids. • Explain the term crystallography and laws of crystallography. • Explain Cubic lattice and types of cubic lattice
PHY4717 Solid State Physics	• To know importance of crystal structure for study the materials properties. • Understand the complex structure of various materials. • Understand the concept of partial differentiation. • Understand use of the X ray diffraction and various experimental methods . • To know the types of magnetic materials. • Understand the concept and use of superconductivity. • Apply basic knowledge of semiconductor to design circuit
MT 4717 Real Analysis - II	• Know the families and properties of Riemann integrable functions, and the applications of the fundamental theorems of integrations. • Explain beta and gamma functions and their properties. • Recognize the difference between pointwise and uniform convergence of a sequence of functions. • Illustrate the effect of uniform convergence on the limit function

	with respect tocontinuity, diffrentiability and integrability.
BO 4717 Biochemistry	• Know Structure, classification, properties and functions of amino acids. • Define enzyme, nature of enzymes and co-factors • Define Carbohydrates, Monosaccharides, lipids, Vitamine. • States Commercial applications of lipids • Understand Foundation of Biochemistry. • Explain Water as solvent of life. • Explain Enzyme inhibition: Competitive, uncompetitive, non-competitive.
ZO 4717 Medical & Forensic Zoology	• Know scope, need and History of Forensic Science. • Understand the role of different institutes & allied institutes of Forensic Science. • Identify various branches of Forensic Sciences from Life Sciences. • Understand human physiology, post mortal investigations. • Describe handling of different types of evidences and their examinations. • Illustrate medico-legal autopsy
CH 4718 Inorganic II Chemistry	• Know the abundance of elements in living system and earth crust. • Know the metalloproteins of iron • Understand the structure and bonding using valence electron count (18 ele. rule). • Understand the catalytic reactions used in industries around. • Understand M-C bond and to define organometallic compounds • Understand the principle of heterogeneous catalyst. • Explain the essential properties of homogeneous catalysts • Identify the biological role of inorganic ions & compounds.

	• Draw the structure of Vit.B_{12} and give its metabolism.
PHY 4718 Quantum Mechanics	• To know history and origin of quantum mechanics. • To know various laws and experiment of quantum mechanics. • To study the Schrodinger equations. • Understand the various operators using in quantum mechanics. • Understand the functions of operational amplifiers. • Apply Schrodinger steady state equation for various applications.
MT 4718 Ring Theory	• Know fundamental concept of Rings, Fields, subrings, integral domains and the corresponding morphism. • Learn in detail about polynomial rings, fundamental properties of finite field extensions and classification of finite fields. • Appreciate the significance of unique factorization in rings and integral domains.
BO 4718 Plant Pathology	• Know Fundamentals of Plant Pathology. • Know Concept of disease cycle, Disease Development. • Know fungi & bacteria as plant pathogens. • Explains Defense Mechanisms. • Explains different methods of Studying Plant Diseases. • Explains Principles of plant diseases control. • Identifies Mycoplasmal Plant Diseases, Nematodal, Viral Plant Diseases.
ZO 4718 Animal Physiology	• Know scope of Physiology. • Draw nutrition and energy requirement. • Identify physiology and endocrinology of Reproductive System. • Explain about nervous system, origin and conduction of nerve impulse, synapse, ultra structure and transmission of Nerve impulse, etc. • Describes physiology and endocrinology of alimentary canal. • Understand respiration, organ involve in respiration and mechanism

	of respiration, transport of oxygen and carbon dioxide, respiratory Quotient and BMR. • Understand about physiology of excretion role of ADH and Renin Angiotensin , and clinical significance of renal failure, renal calculi,etc. • Illustrate about circulation by cardiac cycle, systole and diastole blood pressure, etc. • Prepare ultra-structure of striated Muscle and response of muscle to stimulation, response of muscle to stimulation, etc. • Illustrate Electrocardiogram, color Doppler, etc.
CH 4719 Organic II Chemistry	• know the stability of geometrical isomers of decalin. • Understand the principle of mass spectroscopy, its instrumentation and nature of mass spectrum. • Understand the principle of UV spectroscopy and the nature of UV spectrum. • Understand the principle of IR spectroscopy, types of vibrations and the nature of IR spectrum. • Understand the principle of NMR spectroscopy and will understand various terms used in NMR spectroscopy. • Explain the geometrical isomerism in disubstitutedcyclohexanes. • Interpret the NMR data and they will be able to use it. • Determine the structure of simple organic compounds on the basis of spectral data such as λ max values, IR frequencies, chemical shift (δ values). • Draw different types of conformational isomers of decalin in chair form.

PHY 4719 Thermodynamics and Statistical Physics	• To know importance of thermodynamics. • Understand the concept of statistics. • Understand the concept of partial differentiation. • Understand the various derivations of Maxwell relations. • Understand the concept of quantum statistics. • Apply laws of thermodynamics for various applications.
MT 4719 Partial Differential Equations	• Formulate, classify and transform partial differential equations into canonical form. • Solve linear partial differential equations using various methods and apply these methodsin solving some physical problems.
BO 4719 Plant Breeding and Seed Technology	• Knows History of Plant breeding in India. • States Role of seed technology. • Know Seed legislation in India (Seed Act) • Define seed certification, General procedure of seed certification. • Explains Techniques and practices of plant breeding • Explains Advanced techniques in Plant breeding like Mutation breeding, Tissue Culture. • Explains General procedure for Seed Production. • Explains Seed Pathology, Entomology & Seed Storage.
ZO 4719 Molecular Biology	• Know underlying molecular mechanisms of various biological processes in cells and organisms. • Identify basic understanding of structure-function relationships of nucleic acids and proteins. • Understand the Structure of DNA and RNA, DNA and RNA as genetic material • Understand the Central Dogma of Molecular Biology • Understand the concept of gene regulation • Describe the DNA Damage and Repair
EIGHT SEMESTER	

BED 4826 Advance Pedagogy and ICT in Education	• Understand the concept of Advanced Pedagogy and its implementation in classroom • Use of Pedagogical methods to meet the needs of diverse learners. • Understand the concept, need and importance of ICT and its application in education • Understand ICT based teaching-learning strategies & resources. • Create awareness about appropriate use of ICT • Develop educational material using advanced pedagogical strategies and ICT tools.
BED 4827 Guidance and Counseling	• Understand the concept of need and importance of guidance. • To get familiar with the guidance areas and the role of school in guidance • Understand the meaning and importance of the counselling. • Able to differentiate guidance and counselling. • Identify the types of counselling
CH 4821 Physical III Chemistry	• Know meaning of the terms-Solution, electrolytes, nonelectrolytes and colligative properties. • Understand freezing point depression, Beckmann's method Osmosis and Osmotic pressure, Berkeley and Hartley method, • Understand Conductors and insulators – Its correlation with Extent of energy in energy bands • Understand Semiconductors – Role of impurity in transformation of insulator into semiconductor. • Explain phenomena of photoconductivity • Explain relation between Vant Hoff's factor and degree of dissociation of electrolyte by colligative property.

	• Explain classification of polymers and chemical bonding & Molecular forces in Polymer • Apply the colligative properties to determine molecular weight of nonelectrolyte, abnormal molecular weight.
PHY 4821 Nuclear Physics	• To know importance properties of nuclear materials. • Understand the radioactivity of various nuclear materials. • To study various types of particle accelerator. • Understand use of the various nuclear detectors. • To study nuclear reaction and various nuclear models. • Understand the concept and use of superconductivity. • Apply basic knowledge of semiconductor to design circuit.
MT 4821 Complex Analysis	• To understand the significance of differentiability of complex functions leading to the understanding of Cauchy-Riemann equations. • To Evaluate the contour integrals and understand the role of Cauchy-Goursat theorem and the Cauchy integral formula. • Expand some simple functions as their Taylor and Laurent series, classify the nature of singularities, find residues and apply Cauchy Residue theorem to evaluate integrals. • Represent functions as Taylor, power and Laurent series, classify singularities andpoles, find residues and evaluate complex integrals using the residue theorem.
BO 4821 Advanced Plant Biotechnology	• Know traditional and modern Biotechnology. • Know Concepts of Cell theory & Cellular totipotency, Landmarks in plant tissue culture. • Define Cryopreservation and Germplasm Conservation. • Elaborate about Transgenic Plants as Bioreactors • Explains Techniques of Genetic Engineering and Methods of gene transfer in Plants.

	• Applies of nanotechnology in agriculture.
ZO 4821 Entomology	• Know the scope of Entomology and general characters of Insects. • Study the morphology and anatomy of Insects. • Study the economically important insects and Pest management of harmful insects. • Learn the concept of social organization in Insects. • Understand metamorphosis in Insects. • Understand insect anatomy. • Describe systems of insect. • Illustrate insect ecology
CH 4822 Organic III Chemistry	• Understand the retrosynthesis and synthesis of target molecules. • Understand different terms used – Disconnection, Synthons, Synthetic equivalence, FGI, TM. • Understand Wolff rearrangement (Step up),Hofmann rearrangement, Simmons-Smith reaction, Michael reaction, Wittig reaction. • Understand the retrosynthesis of Acetophenone, Crotonaldehyde, Cyclohexene, Benzylbenzoate, and Benzyl diethyl malonate. • Understand Ephedrine- structure determination using chemical methods. • Explain the chemistry of reactive intermediates. • Explain the synthesis of Citral by Barbier and Bouveault Synthesis. • Draw functional group interconversions and structural problems using chemical reactions.
PHY 4822 Electronics-II	• To study different types of semiconductor devices. • To know various applications of semiconductor devices.

	• To study the combinational and sequential circuits. • Understand the various Integrated circuits. • Understand the functions of operational amplifiers.
MT4822 Optimization Techniques	• To understand fundamentals of Network Analysis using CPM and PERT. • To solve a sequencing Problem for various jobs and machines
BO 4822 Nursery and Gardening Management	• States objectives and scope of Nursery. • Define Gardening and its objectives and scope • Explains Seed Structure and types. • Explain Vegetative propagation methods. • Explain Sowing/raising of seeds and seedlings.
ZO 4822 Techniques in Biology	• Know the scope of Entomology and general characters of Insects. • Study the morphology and anatomy of Insects. • Study the economically important insects and Pest management of harmful insects. • Learn the concept of social organization in Insects. • Understand metamorphosis in Insects. • Understand insect anatomy. • Describe systems of insect. • Illustrate insect ecology
CH 4823 Analytical II Chemistry	• Define basic terms in solvent extraction, basics of chromatography, HPLC, GC, and AAS and AES. • Understand quantitative calculations depending upon equations. • Explain different principles involved in the analyses using solvent extraction, basics of instrumental chromatography, HPLC, GC, and atomic spectroscopic techniques • Identify important parameters in analytical processes or estimations.

	• Apply whatever theoretical principles he has studied in theory during practical
PHY 4823 Physics of Nanomaterials	• To know importance of nanomaterials. • Understand the various methods of synthesis of nanomaterials. . • Understand the various application of nanaomaterials. • Understand the manufacturing of special nanomatirals.. • Apply characteristics to know properties of nanaomaterials.
MT 4823 Lebesgue Integration	• To understand the concept of measure and properties of Lebesgue measure. • To study the properties of Lebesgue integral and compare it with Riemann integral.
BO 4823 Biofertilizers	• Tell Scope and importance of Biofertilizers. • Tell Occurrence and Distribution of Mycorrhizal association. • Know Benefits of vermicompost, field applications • Explain classification and characteristics of Azotobacter. • Describe Azolla - Anabaena relationship • Understand Mycorrhizal applications in agriculture. • Illustrate applications of Azospirillum, BGA.
ZO 4823 Evolutionary Biology	• Provide comprehensive overview of Concept of Evolution. • Know adequate knowledge about Micro-evolutionary changes, Speciation and Adaptive Radiation • Explain Origin of Life especially Prokaryotes as well as Eukaryotes in detail. • Explore salient features of various theories of evolution comprising of Lamarckism, Darwinism and Neo-Darwinism. • Impart detailed understanding of Analogy, Homology, Paleontological Evidences, Embryological Evidences and Molecular Phylogeny. • Understand adequate information about Geological Time Scale and

	Neutral Theory of Molecular Evolution. • Illustrate comprehensive knowledge regarding various Sources of Variations and their role in evolution. • Explain concepts of Population Genetics in terms of HardyWeinberg Law, Genetic Drift and Types of Natural Selection.