



## **Programme Outcomes**

### **Course Outcomes**

**Academic Session-2024-2025**

**Faculty of Bachelor of Arts, Bachelor  
of Commerce and Bachelor of Science**

**Bhiwapur Mahavidyalaya, Bhiwapur**  
**Course Outcomes and Programme Outcomes**  
**Index**

**Department of Arts**

| Session   | Course | Semester | Sr. No. | Subject   | Page No. |
|-----------|--------|----------|---------|---|----------|
| 2024-2025 | B. A   | First    | 1       | English Language                                      |          |
|           |        |          | 2       | Marathi   |          |
|           |        |          | 3       | Political Science                                     |          |
|           |        |          | 4       | Economics   |          |
|           |        |          | 5       | English Literature                                    |          |
|           |        |          | 6       | Sociology   |          |
|           |        |          | 7       | History   |          |
|           |        |          | 8       | Marathi Literature                                    |          |
|           |        |          | 9       | Ambedkar Thought                                      |          |
|           |        |          | 10      | <b>CC-<br/>NSS/NCC/Sports/Cultural<br/>Activities</b> |          |
|           |        | Second   | 11      | English Language                                      |          |
|           |        |          | 12      | Marathi   |          |
|           |        |          | 13      | Political Science                                     |          |
|           |        |          | 14      | Economics   |          |
|           |        |          | 15      | English Literature                                    |          |
|           |        |          | 16      | Sociology   |          |
|           |        |          | 17      | History   |          |
|           |        |          | 18      | Marathi Literature                                    |          |
|           |        |          | 19      | Ambedkar Thought                                      |          |
|           |        | Third    | 20      | English   |          |
|           |        |          | 21      | Marathi   |          |
|           |        |          | 22      | Political Science                                     |          |
|           |        |          | 23      | Economics   |          |
|           |        |          | 24      | English Literature                                    |          |
|           |        |          | 25      | Sociology   |          |
|           |        |          | 26      | History   |          |
|           |        |          | 27      | Marathi Literature                                    |          |
|           |        |          | 28      | Ambedkar Thought                                      |          |
|           |        | Fourth   | 29      | English   |          |
|           |        |          | 30      | Marathi   |          |
|           |        |          | 31      | Political Science                                     |          |
|           |        |          | 32      | Economics   |          |
|           |        |          | 33      | English Literature                                    |          |
|           |        |          | 34      | Sociology   |          |
|           |        |          | 35      | History   |          |
|           |        |          | 36      | Marathi Literature                                    |          |

|  |  |       |    |                    |  |
|--|--|-------|----|--------------------|--|
|  |  |       | 37 | Ambedkar Thought   |  |
|  |  | Fifth | 38 | English            |  |
|  |  |       | 39 | Marathi            |  |
|  |  |       | 40 | Political Science  |  |
|  |  |       | 41 | Economics          |  |
|  |  |       | 42 | English Literature |  |
|  |  |       | 43 | Sociology          |  |
|  |  |       | 44 | History            |  |
|  |  |       | 45 | Marathi Literature |  |
|  |  |       | 46 | Ambedkar Thought   |  |
|  |  | Sixth | 47 | English            |  |
|  |  |       | 48 | Marathi            |  |
|  |  |       | 49 | Political Science  |  |
|  |  |       | 50 | Economics          |  |
|  |  |       | 51 | English Literature |  |
|  |  |       | 52 | Sociology          |  |
|  |  |       | 53 | History            |  |
|  |  |       | 54 | Marathi Literature |  |
|  |  |       | 55 | Ambedkar Thought   |  |

### Department of Commerce

| Session   | Course | Semester | Sr. No. | Subject  | Page No.                                   |  |
|-----------|--------|----------|---------|--|--|--|
| 2024-2025 | B. Com | First    | 1       | <b>Major- Principle of Business Management</b> |  |  |
|           |        |          | 2       | <b>OE 1- Economic Systems</b>                  |  |  |
|           |        |          | 3       | <b>OE 2- Elements of Business Environment</b>  |  |  |
|           |        |          | 4       | <b>AEC- English</b>                            |  |  |
|           |        |          | 5       | <b>VEC- Environmental Studies</b>              |  |  |
|           |        |          | 6       | <b>IKS- Indian Economic and Business Model</b> |  |  |
|           |        |          |         | 7  | <b>VSC- Content Writing</b>                |  |
|           |        |          |         | 8  | <b>SEC- Start-up Support Executive</b>     |  |
|           |        |          |         | 9  | <b>C-SS/NCC/Sports/Cultural activities</b> |  |
|           |        |          | Second  | 10   | <b>Major- Commercial Law</b>               |  |
|           |        | 11       |         | <b>Minor- Introduction to Commerce</b>         |  |  |
|           |        | 12       |         | <b>OE 1- Elements of Statistics</b>            |  |  |
|           |        | 13       |         | <b>OE 2- E-Commerce and M-</b>                 |  |  |

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|--|--------|----|---|--|
|  |        |    | <b>Commerce</b>                                       |  |
|  |        | 14 | <b>VSC- Office Management</b>                         |  |
|  |        | 15 | <b>SEC- Mutual Fund Agent</b>                         |  |
|  |        | 16 | <b>AEC- Marathi</b>                                   |  |
|  |        | 17 | <b>VEC- Constitution of India</b>                     |  |
|  |        | 18 | <b>CC-<br/>NSS/NCC/Sports/Cultural<br/>Activities</b> |  |
|  | Third  | 19 | <b>English</b>  |  |
|  |        | 20 | <b>Marathi</b>  |  |
|  |        | 21 | <b>Financial Accounting -I</b>                        |  |
|  |        | 22 | <b>Company Law</b>                                    |  |
|  |        | 23 | <b>Holistic Development</b>                           |  |
|  |        | 24 | <b>Monetary Economics-I</b>                           |  |
|  | Fourth | 25 | English   |  |
|  |        | 26 | Marathi   |  |
|  |        | 27 | Financial Accounting-III                              |  |
|  |        | 28 | <b>Banking Procedure &amp;<br/>Practice</b>           |  |
|  |        | 29 | <b>Secretarial Practice</b>                           |  |
|  |        | 30 | <b>Monetary Economics-II</b>                          |  |
|  | Fifth  | 31 | <b>Financial Accounting-III</b>                       |  |
|  |        | 32 | Cost Accounting                                       |  |
|  |        | 33 | <b>Human Resource<br/>Management</b>                  |  |
|  |        | 34 | <b>Agricultural Economics</b>                         |  |
|  |        | 35 | <b>Company Audit</b>                                  |  |
|  |        | 36 | <b>Tax Procedure &amp; Practice</b>                   |  |
|  | Sixth  | 37 | <b>Financial Accounting-IV</b>                        |  |
|  |        | 38 | Management Accounting                                 |  |
|  |        | 39 | Advanced Statistics                                   |  |
|  |        | 40 | <b>International Economics</b>                        |  |
|  |        | 41 | <b>Marketing Process</b>                              |  |
|  |        | 42 | <b>Financial Management</b>                           |  |

**Department of Science**  
**(Physics, Chemistry, Mathematics, Zoology and Botany)**

| Session   | Course | Semester | Sr. No. | Subject            | Page No. |
|-----------|--------|----------|---------|--------------------|----------|
| 2024-2025 | B.Sc.  | First    | 1       | English            |          |
|           |        |          | 2       | Chemistry I & II   |          |
|           |        |          | 3       | Physics I & II     |          |
|           |        |          | 4       | Mathematics I & II |          |
|           |        |          | 5       | Zoology I & II     |          |
|           |        |          | 6       | Botany I & II      |          |
|           |        | Second   | 7       | AEC-Marathi        |          |
|           |        |          | 8       | Chemistry I & II   |          |
|           |        |          | 9       | Physics I & II     |          |
|           |        |          | 10      | Mathematics I & II |          |
|           |        |          | 11      | Zoology I & II     |          |
|           |        |          | 12      | Botany I & II      |          |
|           |        | Third    | 13      | Chemistry I & II   |          |
|           |        |          | 14      | Physics I & II     |          |
|           |        |          | 15      | Mathematics I & II |          |
|           |        |          | 16      | Zoology I & II     |          |
|           |        |          | 17      | Botany I & II      |          |
|           |        | Fourth   | 18      | Chemistry I & II   |          |
|           |        |          | 19      | Physics I & II     |          |
|           |        |          | 20      | Mathematics I & II |          |
|           |        |          | 21      | Zoology I & II     |          |
|           |        |          | 22      | Botany I & II      |          |
|           |        | Fifth    | 23      | Chemistry I & II   |          |
|           |        |          | 24      | Physics I & II     |          |
|           |        |          | 25      | Mathematics I & II |          |
|           |        |          | 26      | Zoology I & II     |          |
|           |        |          | 27      | Botany I & II      |          |
|           |        | Sixth    | 28      | Chemistry I & II   |          |
|           |        |          | 29      | Physics I & II     |          |
|           |        |          | 30      | Mathematics I & II |          |
|           |        |          | 31      | Zoology I & II     |          |
|           |        |          | 32      | Botany I & II      |          |

## Academic session-2024- 2025 Programme Outcomes and Course Outcomes

### Faculty of Arts

#### Programme Outcomes:

- Students gain a comprehensive understanding of the subject’s fundamental concepts.
- There is a clear enhancement of knowledge and intellectual growth.
- Learners develop a strong and serious engagement with the subject and course content.
- Critical thinking matures, supporting professional readiness and employability.
- Creative abilities are nurtured and encouraged.
- Emotional intelligence, along with teamwork and collaboration skills, is developed.
- Students acquire an understanding of the social, political, economic, psychological, and literary contexts that shape developments and trends.

| Sr. No.                 | Subject                                     | Programme Outcome  | Course Outcomes  |
|-------------------------|---|--|--|
| <b>First - Semester</b> |   |  |  |
| 1                       | <b>English Language</b>                     |  |  |
|                         | <b>Major – (T1 and T2) English Language</b> | <p>1. The English Language Major course aims to develop the learners' ability to comfortably use English language skills while listening, speaking, reading, and writing.</p> <p>2. A systematic implementation of this course can develop the ability</p> | <p>1. By the end of the course, the students can read and understand any text in English and effectively listen to the inputs given by the teacher in the classroom.</p> <p>2. A successful delivery of this course can help the students imbibe the rules of language unconsciously and train them to deduce language structure and usage.</p> <p>3. By the completion of this course, the student's ability to</p> |

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|  |                                    | <p>to write and speak good English in all situations.</p> <p>3. The course will enhance the ability to develop speech and writing style and hone the student's ability to use the language tools for effective communication</p> <p>4. The course ensures exposure to the learners in good prose texts and poems and introduces the learners to value-based ideas.</p> <p>5. The course will facilitate the students' enhancement of their language skills, especially in the areas of grammar and pronunciation.</p> | <p>write paragraphs, essays, and letters will be strengthened.</p> <p>4 Students will decipher the mechanism of language and use it for success in competitive examinations and job-related speaking and writing tasks.</p>   |
|  | <p><b>OE- English Language</b></p> |   | <p>1.Learners will be motivated through the Life Sketches of successful sportspersons</p> <p>2.Learners will understand the structure of sentences through prescribed grammar</p> <p>3.Learners will be able to draft an impressive application and resume for a job</p> <p>4.Learners will develop</p> |

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|  |                                  |  | confidence in grasping and understanding the English language and its usage   |
|  | <b>English Language</b><br>VSC-1 | <p>Learning Objectives:</p> <p>To teach the learners about giving personal information.</p> <p>To enable the learners to know about using a dictionary.</p> <p>To teach the learners about the Art of Small Talk</p> | <p>Learning Outcomes:</p> <ol style="list-style-type: none"> <li>1.The learners will learn about giving personal information.</li> <li>2.The learners will get to know about using a dictionary.</li> <li>3.The course will help learners to learn the Art of Small Talk.</li> </ol>  |
|  | <b>English Language</b><br>SEC-1 |  | <ol style="list-style-type: none"> <li>1.The course comprises of significant elements such as vocabulary enhancement, visual communication, dialogue writing, drafting advertisements and journalistic reports etc. and intends to train the students in tasks like professional documentation,</li> <li>2.The program will strengthen the areas like vocabulary enrichment, drafting, and editing</li> <li>3.Program will develop fine nuances of journalistic skills, professional language skills, media skills for the digital age, etc.</li> <li>4.This course will develop competence in professional writing among the learners and hone their basic life skills.</li> </ol> |

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|  |   |  | <p>5.By the end of the program, the learner would have cultivated imaginative capacities as expected of a professional.</p> <p>6.This program is planned to equip the learners with the required language skills which can eventually make them job ready.</p>   |
|  | <p><b>Compulsory English</b><br/><b>AEC-1</b></p>                       |  | <p>Course Outcomes:</p> <ol style="list-style-type: none"> <li>1.The students can interpret, summarize, describe, and narrate in English.</li> <li>2. The students will learn comprehension, communication skills, and collaboration.</li> <li>3.The students will get practical exposure to language learning.</li> <li>4.The lessons prescribed will help in molding the character of the students.</li> <li>5.The students will develop critical thinking on various aspects of life</li> </ol> |
|  | <p><b>English Language</b><br/><b>VEC-1 (Environmental Studies)</b></p> |  |  |
|  | <p><b>English Language</b><br/><b>IKS</b></p>                           |  | <p>Course Outcomes:</p> <ol style="list-style-type: none"> <li>1. To facilitate the students with the concepts of Indian traditional knowledge</li> <li>2. To make the students understand the importance of the roots of the Indian Knowledge System.</li> </ol>  |

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|   |                          |   | <p>3. To acquaint students with the facets of traditional knowledge &amp; their relevance in their day-to-day life.</p> <p>4. To help students develop analytical skills and learn to approach knowledge from diverse perspectives with scholarly agility</p> <p>5. To promote all aspects of Indian Knowledge Systems for research and societal application.</p> <p>6. To foster interdisciplinary research resulting in a harmonious blend of various knowledge systems as part of modern education.</p> |
| 2 | <b>Marathi</b>           | <p>१- मराठी भाषेच्या समृद्धीची जाणीव करून देणे</p> <p>२- भाषेच्या व साहित्याच्या अभ्यासाद्वारे भारतीय सांस्कृती आणि इतिहासाची ओळख करून देणे-</p> <p>३- साहित्यप्रकारांची ओळख करून देणे-</p> <p>४- विद्यार्थ्यांची भाषिक कौशल्ये विकसित करणे व त्यांना रोजगाराभिमुख बनविणे</p> <p>५- भाषेचे तसेच साहित्याचे आकलन आणि जीवनव्यवहारात उपयोजन करण्यास प्रवृत्त करणे.</p> <p>६- नैतिक मूल्ये रुजविणे.</p> | <p>१- विद्यार्थी भाषेचे सुयोग्य उपयोजन करू शकेल-</p> <p>२- पत्रलेखन, साराशलेखन यासारखी भाषिक कौशल्ये व कार्यालयीन भाषा तसेच जीवनव्यवहारात उपयुक्त ठरतील-</p> <p>३- एकाग्रतेने वाचन करण्याची सवय लागेल-</p> <p>४- भाषिक संवाद व्यवहारामुळे विद्यार्थ्यांचा सामाजिक व वैयक्तिक विकास होईल-</p> <p>५- अचूक आणि अविलंब विचार करण्याची क्षमता निर्माण होईल-</p> <p>६- विचारांचा नेमका वेध घेण्याची क्षमता निर्माण होईल</p> <p>७- अभ्यासक्रमाची उद्दिष्टे साध्य होतील-</p>                                       |
| 3 | <b>Political Science</b> |   |  |

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|  | <p><b>B.A.FIRST YEAR:<br/>SEMESTER</b></p> <p><b>POLITICAL THEORY</b></p> <p>(Major Mandatory 04 Credits)</p> <p>(Code-UGPO1MM1)</p>                                |  | <p><b>COURSE LEARNING OUTCOMES: After completing this course students will be able to:</b></p> <p><b>Understand the nature and relevance of Political Theory</b></p> <p><b>Understand different concepts i.e. power, authority, rights, liberty, equality and justice</b></p> <p><b>Understand present situation of concepts</b></p>   |
|  | <p><b>B.A.FIRST YEAR:<br/>SEMESTER</b></p> <p><b>Modern Indian Political Thought-1</b></p> <p>(Major Mandatory 02 Credits)</p> <p>(Code-UGPO1MM2)</p>               |  | <ol style="list-style-type: none"> <li><b>1. Students can know the political ideas, views and concerns of leading Indian thinkers.</b></li> <li><b>2. Students can know about the Political and Social Thinkers.</b></li> <li><b>3. Students take positive inspiration from the thoughts of great thinkers.</b></li> <li><b>4. Students will be able to better understand the fundamental concepts of Indian Political thought.</b></li> </ol> |
|  | <p><b>B.A.FIRST YEAR:<br/>SEMESTER</b></p> <p><b>Political Reporting-1</b></p> <p>(Vocational Skill Course (Activity Based) 02 Credits)</p> <p>(Code-UGPO1VSC1)</p> |  | <p><b>Course Outcomes:</b></p> <p><b>Students at the successful completion of the course will be able to:</b></p> <ol style="list-style-type: none"> <li><b>1. Understand the need, scope and concepts in Political Reporting.</b></li> <li><b>2. Identify various sources for Political Reporting.</b></li> <li><b>3. Provide an overview of interpreting the political</b></li> </ol>  |

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|          |   |  | <p>phenomena from the gross roots level to the Parliament.</p> <p>4. Develop insights and enhance skills in a professional manner in the age of mass media.</p> <p>5. Learn skills related to reporting, enlarge job opportunities and make it a career.</p>   |
|          | <p>B.A.FIRST YEAR:<br/>SEMESTER – I</p> <p>Indian Cinema and Politics</p> <p>PAPER-I (Indian Knowledge System 02 Credits)</p> <p>(Code-UGPO1IKS1)</p> |  | <p><b>COURSE OUTCOME:</b></p> <p>1. The students will be able to analyze political concepts and events, public policy, political behaviour and visions of politics and society as presented in films.</p> <p>2. The students can understand how the use of power in general and use of political power in particular is connected with their day to day life</p> <p>3. It will help develop critical thinking skills of description, appreciation and interpretation and promote independent thinking.</p> |
| <b>4</b> | <b>Economics</b>  |  |  |

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|  | <p>Major-1-Introduction of Micro Economics</p>                               | <p>Course Objectives:</p> <p>The basic objective of this course is to familiarize the studies about the various concepts of microeconomics. This course intends to provide basics of microeconomics and macroeconomics and various concepts of micro economics, Consumer behavior, Laws of demand and Supply. The course is designed such that the students are able to explain the various functions of production and price determination and different theories of Distribution.</p> | <p>Course Outcome:</p> <p>After successful completion of this course, students will be able to</p> <ol style="list-style-type: none"> <li>1. Use various basic concepts of microeconomics</li> <li>2. Understand consumer behaviors in different situations and measurement of elasticity and its determinants</li> <li>3. Know different factors of production, production function, law of variable proportion, price and output determination in different market situations,</li> <li>4. Use their knowledge to understand different theories of distribution.</li> </ol> |
|  | <p>Major-2</p> <p>RETAIL MARKETING</p>                                       | <p>Course Objectives:</p> <ol style="list-style-type: none"> <li>1. Students will understand the basic concept of Retail Marketing,</li> <li>2. Students will understand the strategic planning and tools used in Retailing.</li> </ol>   | <p>Course Outcomes:</p> <p>Equip the student with overall idea and role of Retail marketing. Students will get the knowledge about the strategies used in retail marketing</p>  |
|  | <p><b>Indian Knowledge System (IKS) Course</b></p> <p>KAUTILYA'S ECONOMY</p> |   | <p>Course Outcomes (COs): At the end of the course the student should be able to</p> <ol style="list-style-type: none"> <li>1. This course will enlighten the students about the ancient</li> </ol>   |

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|  |  |  | <p>fundamentals about political and economic constituents, which will frame out a basic land of understanding the modern trends. This will help them to understand the upcoming needs in the area of policy making for states at national and international level.</p> <p>2. This treatise deals with the science of Governance, so it projects out all the dimensions needed to be understood by students about the present socio-economic and political rules and regulations of the</p>      |
|  | <p><b>Vocational Skill Course/VEC in Economics</b></p> <p><b>PERSONAL FINANCE AND PLANNING</b></p> |  | <p>Course Outcomes: After completion of the course, learners will be able to:</p> <ol style="list-style-type: none"> <li>1. Examine the meaning and appreciate the relevance of financial planning.</li> <li>2. Demonstrate the concept of investment planning and its methods.</li> <li>3. Examine the scope and ways of personal tax planning.</li> <li>4. Analyse insurance planning and its relevance.</li> <li>5. Interpret insight into retirement planning and its relevance.</li> </ol> |
|  | <p><b>Skill Enhancement Course (SEC)</b></p> <p><b>SHARE MARKET</b></p>                            |  | <p>Course Outcomes (Cos): After going through the course, learners will be able to:</p> <ol style="list-style-type: none"> <li>1. Identify the stock market functions</li> <li>2. Identify the practical</li> </ol>   |

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|   |   |   | <p>applicability of different investment tools</p> <p>3. Integrate the analytical skill for the techniques of fundamental and technical analysis</p> <p>4. Develop the analytical skills needed to make informed investment decisions in the stock market</p>   |
|   | <p><b>OE in Economics</b></p> <p><b>ENTREPRENEURIAL ECONOMICS</b></p> |   | <p>Course Outcomes (Cos): After the successful completion of the course, the student will be able to:</p> <p>1. Start own business as Entrepreneur</p> <p>2. Enabling the students to find career opportunities in business</p> <p>3. To enable the students to gain knowledge and skills needed to run a business successfully.</p>                      |
| 5 | <b>English Literature</b>   |   |   |
|   | <p><b>Major – (T1 and T2) English Literature</b></p>                  | <p>Course Objectives:</p> <p>1. The NEP Curriculum for English Literature aims at imparting creativity and utility of the English language through the study of literature and cultural studies.</p> <p>2. The course aims at enhancing</p> | <p>Course Outcome:</p> <p>1. By the end of the course, the students will be able to write creatively due to the exposure and influence of various literary and cultural concepts.</p> <p>2. The students will be more equipped to face global challenges with their developed intellectual flexibility, creativity, and learning of cultural nuances.</p> |

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|  |  | <p>creative as well as critical acumen among the learners which is an essential attribute in the globalized world.</p> <p>3. The syllabus assists students in the development of intellectual flexibility, creativity, and cultural learning that they may use for their life-long learning.</p> <p>4. The syllabus aims to familiarize the students with representative literary and cultural texts within a significant number of historical, geographical, and cultural contexts.</p> <p>5. The contents will enable the students to apply critical faculties and theoretical approaches to analyze literary and cultural texts in multiple genres.</p> | <p>3. The students will have gained fair ideas about representative literary and cultural texts within a significant number of historical, geographical, and cultural contexts.</p> <p>4. They will acquire expertise in writing essays, research papers, reflective writing, and critical reviews.</p> <p>5. The students will learn to understand and critically appreciate human experiences through literary representations.</p> |
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|  |                                     | <p>6. The contents will enable the students to write analytically in a variety of formats, including essays, research papers, reflective writing, and critical reviews of secondary sources</p> <p>7. The contents will enable the students to understand the process of communicating and interpreting human experiences through literary representations using historical contexts and varied methodologies.</p> |  |
|  | <p>English Literature<br/>VSC-1</p> | <p>Learning Objectives:</p> <p>To teach the learners about English Poetry as a literary genre.</p> <p>To enable the learners to know about different forms of English Poetry..</p> <p>To teach the learners about the Origin and Development of</p>  | <p>Learning Outcomes:</p> <p>The learners will learn about English Poetry as an art form.</p> <p>The learners will get to know the different narrative techniques employed.</p> <p>The course will help learners appreciate the application of different poetic devices.</p> |

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|  |                             | English Prose. |   |
|  | English Literature<br>SEC-1 |                | <p>1.The course comprises of significant elements such as vocabulary enhancement, visual communication, dialogue writing, drafting advertisements and journalistic reports etc. and intends to train the students in tasks like professional documentation,</p> <p>2.The program will strengthen the areas like vocabulary enrichment, drafting, and editing</p> <p>3.Program will develop fine nuances of journalistic skills, professional language skills. media skills for the digital age, etc.</p> <p>4.This course will develop competence in professional writing among the learners and hone their basic life skills.</p> <p>5.By the end of the program, the learner would have cultivated imaginative capacities as expected of a professional.</p> <p>6.This program is planned to equip the learners with the required language skills which can eventually make them job ready.</p> |
|  | AEC-1 Compulsory English    |                | <p>Course Outcomes:</p> <p>1.The students can interpret, summarize, describe, and narrate in English.</p>   |

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|  |                        |  | <p>2. The students will learn comprehension, communication skills, and collaboration.</p> <p>3.The students will get practical exposure to language learning.</p> <p>4.The lessons prescribed will help in molding the character of the students.</p> <p>5.The students will develop critical thinking on various aspects of life</p>  |
|  | IKS-English Literature |  | <p>Course Outcomes:</p> <p>1. To facilitate the students with the concepts of Indian traditional knowledge</p> <p>2. To make the students understand the importance of the roots of the Indian Knowledge System.</p> <p>3. To acquaint students with the facets of traditional knowledge &amp; their relevance in their day-to-day life.</p> <p>4. To help students develop analytical skills and learn to approach knowledge from diverse perspectives with scholarly agility</p> <p>5. To promote all aspects of Indian Knowledge Systems for research and societal application.</p> <p>6. To foster interdisciplinary research resulting in a harmonious blend of various</p> |

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|          |                  |   | knowledge systems as part of modern education.   |
| <b>6</b> | <b>Sociology</b> |   |  |
|          | Sociology        | <ul style="list-style-type: none"> <li>• <b>Basic Introduction to Sociology:</b><br/>Students can understand the meaning, origin and development of the subject of Sociology.</li> <li>• <b>Knowledge of Basic Concepts:</b> Basic concepts such as society, community, social groups, institutions, culture, socialization, social control and social change can be explained.</li> <li>• <b>Structure of Indian Society:</b> Basic features of Indian society, such as multicultural nature, caste system, rural and urban society, family marriage and kinship can be understood.</li> <li>• <b>Understanding of Social Problems:</b> The ability to identify and analyze major social problems in Indian society (e.g. poverty, pollution, social inequality) is developed.</li> <li>• <b>Theoretical Approach:</b> Social phenomena can be analyzed by understanding various sociological approaches and theories (e.g. functionalism, conflict theory).</li> <li>• <b>Introduction to Research Methods:</b> Basic methods of social research (e.g. survey, observation, interview)</li> </ul> | <ol style="list-style-type: none"> <li>1. <b>Society and culture instill a sense of duty in student.</b></li> <li>2. <b>Necessary knowledge and resources are available to solve social problem.</b></li> <li>3. <b>Social entrepreneurship promotes sustainable development.</b></li> <li>4. <b>Group work increases the ability to work together and collaborate with people from different backgrounds.</b></li> <li>5. <b>Reformist movements not only provide students with bookish knowledge but also make them citizens who are aware in thought, active in action and contribute to society.</b></li> <li>6. <b>To provide knowledge about human behavior within groups and social systems.</b></li> <li>7. <b>To help students apply a sociological perspective to understand how society shapes individual lives, distinguishing between common-sense knowledge and sociological knowledge.</b></li> </ol> |

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|   |   | <p>and data collection techniques can be understood.</p> <ul style="list-style-type: none"> <li>• <b>Social Awareness and Values:</b> Social awareness, scientific approach and social values are instilled in students, which enables them to look at the developments in society with greater sensitivity.</li> <li>• <b>Analytical and critical thinking:</b> Develops the ability to critically evaluate and analyze human behavior and social phenomena.</li> </ul> |  |
| 7 | <b>History</b>  |  |  |
|   | <p><b>History</b></p> <p><b>Major Mandatory -1</b></p> <p>HIS1MM1-HISTORY OF INDIA:(FROM EARLIEST TIMES TO 550A.D.)</p> | <p><b>Course Objective:</b></p> <p>As a history student will learn about the historiographical trends,interpretation of the historical courses of ancient India as well.They can acquire knowledge about the Vedic Period and the rise of Jainism and Buddhism culture in ancient times of India.</p>  | <p><b>Course Outcomes:</b></p> <p><b>Co1.</b> The student will learn literary sources of Ancient India.</p> <p><b>CO2.</b> The students will acquire knowledge on Vedic period and the rise of Jainism and Buddhism culture.</p> <p><b>CO3.</b> The student will know the rise of Empires.</p> <p><b>CO4.</b> The student will learn administration,and know about art and architecture.</p> |
|   | Major Mandatory-(2Credit)   | Course Objectives: Students will acquire knowledge   | Course Outcome:  |

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|  | <p>HIS1MM2-IDIA OF BHARAT</p>   | <p>regarding the primitive life and cultural status of the people of ancient India. They can gather knowledge about the society, culture, religion and political history of ancient India. They will also acquire the knowledge of changing socio-cultural scenarios of India.</p>   | <p>CO1. The student will understand the concept of Bharatvarsha, its geography and Akhand Bharat.</p> <p>CO2. The student will know their cultural roots and ancient Indian philosophy.</p>   |
|  | <p>Open Elective</p> <p>OE1 (4 Credits)</p> <p>HISIOEL-INDIAN FREEDOM STRUGGLE: 1885 to 1947 AD</p> | <p><b>Course Objectives: The contents of the syllabus are designed to cover core issues pertaining to a vast canvass of nationalist history so that the student at the undergraduate level is equipped to focus upon the core ideas of the national movement in its conceptuality. India's quest for independence and nation-building are interwoven scripts of history, debated most widely at the global level from various angles. Indeed, India's national</b></p> | <p>Course Outcome:</p> <p>CO1. The student will understand the making of Indian constitution and to know the salient features of Indian constitution.</p> <p>CO2. The student will know the new economic initiatives propagated in independent India.</p> <p>CO3. The student will critically analyse the international relations of India with its neighbours.</p> <p>CO4. The students will be enabled to analyse development of democratic culture in the princely states.</p> |

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|  |   | <p><b>movement has a vast and divergent ideological base with inner contradictions.</b></p>   |  |
|  | <p>VSC-1 (2 Credit)</p> <p>HIS1VSC1-ARCHIVES IN INDIA</p>               | <p><b>Course Objectives:</b></p> <p><b>The aim of introducing this paper is to highlight the facts pertaining to the nature and importance of Archives. The students will learn the preservation of records and records management. The student will also understand the functions and administration of National Archives and regional Archives.</b></p> | <p>Course Outcome:</p> <p>CO1. The student will understand the meaning and definition of Archive. The student will know the history, uses and importance of Archive.</p> <p>CO2, The students will come to know the best Museums in India. The student will also know the various government &amp; private Archives.</p> |
|  | <p>SEC-1 (2 Credit)</p> <p>HISISEC1-ARCHIVAL SOURCES AND TECHNIQUES</p> | <p><b>Course Objectives: The Students after successful completion of the course will be able to understand the archival sources and techniques as professional tools. They will Identify the intellectual and physical content in</b></p>   | <p>Course Outcomes:</p> <p>CO1-Develop the ability to preserve and create access for a historic record.</p> <p>CO2- Recognize the importance of archives in history writing.</p>   |

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|  |   | <p><b>historical sites and records. The students will learn to Manage, budget and implement projects.</b></p> |   |
|  | <p>VALUE EDUCATION COURSE (VEC)<br/>HIS1VEC1- ENVIRONMENTAL STUDIES</p> |   | <p>COURSE OUTCOMES:</p> <p>At the end of the course, students shall be able to:</p> <ol style="list-style-type: none"> <li>1. Explain the basics of Environmental Science and Atmospheric Science along-with the components of Environment</li> <li>2. Explicate the importance of Environmental Education.</li> <li>3. Elucidate the fundamentals of atmospheric science including formation, depletion and effects of ozone layer and acid rain on environment.</li> <li>4. Describe the various physical and chemical characteristics and properties of Water and Soil</li> <li>5. Understand the Ecology and its allied branches</li> <li>6. Comprehend about Population and Community Ecology</li> </ol> |

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|   |  |  | 7. Study the changes in Population by understanding the concept of Population ecology   |
|   | MINOR-IKS (2 Credit)<br>HIS1IKS1 -ANCIENT KNOWLEDGE SYSTEM | <b>Course Objectives: This paper aims at introducing the students to the Ancient Indian wisdom preserved in the Sanskrit and Pali texts, It also introduces the students to the important ethical ideas contained in the Indian traditions. It also investigates if there are certain epistemic ideas in those texts that addresses present concerns like environmental degradation.</b> | Course Outcome:<br><br>COL. The students will understand the Ancient Indian wisdom preserved in ancient texts. The students will know important ethical ideas contained in the Indian traditions. CO2. The student will be able to investigate certain epistemic ideas in those texts. The learner will be able to relate the nature and human relations. |
| 8 | <b>Marathi Literature</b>                                  |  |   |
|   | <b>Marathi Literature</b>                                  | <p>1 मराठी वाङ्मय प्रकारांची ओळख करून देणे-</p> <p>2- आत्मचरित्र या वाङ्मय प्रकाराचे स्वरूप व वैशिष्ट्ये यांचे आकलन करून देणे-</p> <p>3- माझी जन्मठेप या वि-दा-सावरकरांच्या आत्मचरित्राचा आढावा घेणे-</p> <p>4- साहित्यातून व्यक्त विषेशांची माहिती देणे-</p>  | <p>1- मराठीतील कविता] कथा] नाटक] चरित्र- आत्मचरित्र या वाङ्मय प्रकारांची ओळख विद्यार्थ्यांना झाली-</p> <p>2- आत्मचरित्र या वाङ्मय प्रकाराचे स्वरूप व वैशिष्ट्ये व घटकांची माहिती विद्यार्थ्यांना मिळाली-</p> <p>3- वि- दा- सावरकरांच्या जिवनाचा वृतांत माझी जन्मठेप या आत्मचरित्रातून समजून आला-</p>  |

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| <b>9</b> | <b>Ambedkar Thought</b>  |  |  |
|          | <p>Major -1 (ATH)</p> <p><b>LIFE AND MISSION OF DR. AMBEDKAR</b></p>                         | <p>The subject provides substantive knowledge about Dr. Ambedkar's life, their trouble and his way out of the search by them. It provides the objective of their humanistic mission.</p> | <ol style="list-style-type: none"> <li>1. It gives the students an opportunity to know and understand Dr. Ambedkar's life and work.</li> <li>2. Provides critical knowledge to the students regarding political movements.</li> <li>3. A critical study of Dr. Ambedkar's social and political movements develops the ability of students to meet most challenges they come across.</li> </ol> |
|          | <p>Major -2 (ATH)</p> <p><b>Military History of Untouchables</b></p>                         | <p>This paper bring across the students to the martial character of untouchables in India.</p>   | <ol style="list-style-type: none"> <li>1. The students will know the status of untouchables in ancient time</li> <li>2. It teaches the students social condition in Indian society..</li> <li>3. The students become to know the military skill of untouchables..</li> </ol>   |
|          | <p>Open Elective- (ATH)</p> <p><b>Dr. Ambedkar's Social Struggle and Nation building</b></p> | <p>This subject aims to develop students' understanding of Dr. Ambedkar's struggle with the existing unequal social system. This paper aims to</p>                                       | <ol style="list-style-type: none"> <li>1. To make the student know Dr. Ambedkar's childhood in social hardship.</li> <li>2. To know the educational dominance of higher caste and difficulties in the way of untouchables.</li> </ol>  |

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|  |  | raise students' awareness of Dr. Ambedkar's contribution to nation-building and development                    | <p>3. The students will learn what Dr. Ambedkar took at the Round Table conference.</p> <p>4. The students will know Dr. Ambedkar's thoughts on birth control</p> <p>5. The students will know Dr. Ambedkar's work in power generation and irrigation.</p>  |
|  | VSC-(ATH)<br>Organising Social Survey                      | This paper teaches how to organise social research on various societal problems and get the results.           | <p>1. The students know and understand the process of social research.</p> <p>2. It develops skills for organising social research.</p> <p>3. It also develops skills for social research projects.</p>   |
|  | SEC - Buddhist Tourism - (ATH)                             | This paper make the student understand need and importance of tourism.   | <p>1. The students will learn, meaning of tourism in concern with human heritage.</p> <p>2. The students will find the archeological importance of Buddhist places.</p> <p>3. Various Buddhist sites will make the student know ancient Indian humanist Society, Culture it's development and downfall.</p> |
|  | Indian Knowledge System<br>Social Reformers in India-(ATH) | This paper about social reformers and social reforms in India aims to educate students about the reformers who | <p>1. The students will learn about the great Jotirao Fule, who fought tooth and nail against the caste system in India.</p> <p>2. The students will come across the self-respect</p>   |

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|                         |  | fought against social evils using Ambedkar's principles of social movements.   | movement of Periyar E.V. Ramaswami and his critique on religion.<br><br>3. The students will learn about the social movements of Shahu Maharaj.   |
| 10                      | CC-<br>NSS/NCC/Sports/Cultural<br>Activities | <b>To ensure the holistic development of learners.</b>   | <b>Students will be able to develop social skills, intellectual skills, moral values, and character appeal in students.</b>   |
| <b>Second- Semester</b> |  |  |   |
| 11                      | <b>English Language</b>                      |  |   |
|                         | <b>Major – (T3 and T4) English Language</b>  | <p>1. The English Language Major course aims to develop the learners' ability to comfortably use English language skills while listening, speaking, reading, and writing.</p> <p>2. A systematic implementation of this course can develop the ability to write and speak good English in all situations.</p> <p>3. The course will enhance the ability to develop speech and writing style and hone the student's ability to use the language tools for</p> | <p>1. By the end of the course, the students can read and understand any text in English and effectively listen to the inputs given by the teacher in the classroom.</p> <p>2. A successful delivery of this course can help the students imbibe the rules of language unconsciously and train them to deduce language structure and usage.</p> <p>3. By the completion of this course, the student's ability to write paragraphs, essays, and letters will be strengthened.</p> <p>4 Students will decipher the mechanism of language and use it for success in competitive examinations and job-related speaking and writing tasks.</p> |

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|  |  | <p>effective communication</p> <p>4. The course ensures exposure to the learners in good prose texts and poems and introduces the learners to value-based ideas.</p> <p>5. The course will facilitate the students' enhancement of their language skills, especially in the areas of grammar and pronunciation.</p>   |   |
|  | <p><b>English Language Minor (T4 and Minor-1 Same)</b></p> | <p>1. The English Language Major course aims to develop the learners' ability to comfortably use English language skills while listening, speaking, reading, and writing.</p> <p>2. A systematic implementation of this course can develop the ability to write and speak good English in all situations.</p> <p>3. The course will enhance the ability to develop speech and writing style and</p> | <p>1. By the end of the course, the students can read and understand any text in English and effectively listen to the inputs given by the teacher in the classroom.</p> <p>2. A successful delivery of this course can help the students imbibe the rules of language unconsciously and train them to deduce language structure and usage.</p> <p>3. By the completion of this course, the student's ability to write paragraphs, essays, and letters will be strengthened.</p> <p>4 Students will decipher the mechanism of language and use it for success in competitive examinations and job-related speaking and writing tasks.</p> |

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|  |  | <p>hone the student's ability to use the language tools for effective communication</p> <p>4. The course ensures exposure to the learners in good prose texts and poems and introduces the learners to value-based ideas.</p> <p>5. The course will facilitate the students' enhancement of their language skills, especially in the areas of grammar and pronunciation.</p> |   |
|  | <p><b>English Language</b></p> <p><b>OE-2</b></p>  |  | <p>Course Outcomes</p> <p>Learners will be able to apply the basics of the English language.</p> <p>Learners will be able to ascend towards more complex reading and comprehension.</p> <p>There will be an enhancement in learner's vocabulary skills of the learners.</p> <p>Learners will have improved drafting skills.</p> |
|  | <p><b>English Language</b></p> <p><b>VSC-2</b></p> |  | <p>Learners will be able to Listen to a Story and Summarizing.</p> <p>Learners will be able for Reading and Summarizing.</p>  |

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|           |  |  | <p>Learners will be able for Reading News Articles and Summarizing.</p> <p>Learners will be able for Summarizing and Note Making.</p> <p>Learners will be able for Reading Comprehension.</p>   |
|           | <p><b>English Language</b></p> <p><b>SEC-2</b></p> |  | <p>Course Outcome</p> <p>By the end of this course, the undergraduate students will develop the basics required for technical communication and drafting skills at primary and advanced levels</p> <p>The course will help hone the learners' drafting skills and make them professionally efficient.</p> <p>The learners will be able to draft personal and official letters and develop the skills to describe what they see.</p> |
| <b>12</b> | <b>Marathi</b>                                     |  |   |
|           |  | <p>१ मराठी भाषेच्या समृद्धीची जाणीव करून देणे</p> <p>२ भाषेच्या व साहित्याच्या अभ्यासाद्वारे भारतीय सांस्कृती आणि इतिहासाची ओळख करून देणे-</p> <p>३ साहित्यप्रकारांची ओळख करून देणे-</p> <p>४ विद्यार्थ्यांची भाषिक कौशल्ये विकसित करणे व त्यांना रोजगाराभिमुख बनविणे-</p> | <p>१- विद्यार्थी भाषेचे सुयोग्य उपयोजन करू शकेल-</p> <p>२- पत्रलेखन, साराशलेखन यासारखी भाषिक कौशल्ये व कार्यालयीन भाषा तसेच जीवनव्यवहारात उपयुक्त ठरतील-</p> <p>३- एकाग्रतेने वाचन करण्याची सवय लागेल.</p> <p>४- भाषिक संवाद व्यवहारामुळे विद्यार्थ्यांचा सामाजिक व वैयक्तिक विकास होईल.</p> <p>५- अचूक आणि अविलंब विचार करण्याची क्षमता निर्माण होईल.</p> <p>६- विचारांचा नेमका वेध घेण्याची क्षमता</p>                            |

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|           |  | <p>५- भाषेचे तसेच साहित्याचे आकलन आणि जीवनव्यवहारात उपयोजन करण्यास प्रवृत्त करणे.</p> <p>६- नैतिक मूल्ये रुजविणे.</p> | <p>निर्माण होईल.</p> <p>७- अभ्यासक्रमाची उद्दिष्टे साध्य होतील.</p>  |
| <b>13</b> | <b>Political Science</b>   |   |  |
|           | <p>WESTERN. POLITICAL THOUGHTS (Major Mandatory 04 Credits) (Code-UGPO2MM3)</p>  |   | <p>COURSE LEARNING OUTCOMES: This course will help students to:</p> <ol style="list-style-type: none"> <li>1. Understand fundamental concepts of Plato, Aristotle, Mill and Marx's philosophy</li> <li>2. Understand these concepts in a critical and analytical manner</li> </ol>   |
|           | <p>B.A.FIRST YEAR: SEMESTER II</p> <p>Modern Indian Political Thought-1</p> <p>(Major Mandatory 02 Credits)</p> <p>(Code-UGPO2MM4)</p> |   | <p>COURSE OUTCOMES:</p> <ol style="list-style-type: none"> <li>1. Students can know the political ideas, views and concerns of leading Indian thinkers.</li> <li>2. Students can know about Indian Political and Social Thinkers.</li> <li>3. Students take positive inspiration from the thoughts of great thinkers.</li> <li>4. Students will be able to better understand the fundamental concepts of Indian Political Thoughts.</li> </ol> |

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|  | <p>B.A.FIRST YEAR:<br/>SEMESTER II<br/>(Vocational Skill<br/>Course) 02 Credits</p> <p>(Code- UGPO2VSC2)</p> |  | <p>Course Outcomes:</p> <p>Students at the successful completion of the course will be able to:</p> <ol style="list-style-type: none"> <li>1. Understand the need, scope and concepts in Political Reporting.</li> <li>2. Identify various sources for Political Reporting.</li> <li>3. Provide an overview of interpreting the political phenomena from the grass roots level to the Parliament.</li> <li>4. Develop insights and enhance skills in a professional manner in the age of mass media.</li> <li>5. Learn skills related to reporting, enlarge job opportunities and make it a career.</li> </ol> |
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|           | <p>B. A. SECOND YEAR:<br/>SEMESTER – III<br/>INDIAN NATIONAL<br/>MOVEMENT AND<br/>CONSTITUTIONAL<br/>DEVELOPMENT<br/>(Major Mandatory-II I0 4<br/>Credits)<br/>(Code-UGPO3MM5)<br/>Open Elective</p> |   | <p>Course Outcome</p> <p>At the end of the course the students will be:</p> <ol style="list-style-type: none"> <li>1. Be able to reflect on the nature of Indian nationalism and the Constitution with historical perspective.</li> <li>2. Understand and appreciate the values and design of the Indian Constitution resulting from the diverse intellectual traditions, ideas and concerns of freedom fighters.</li> <li>3. Have a nuanced understanding of the stages and settings in which Constitutional measures and reforms were initiated, contested and modified culminating in the Indian Constitution.</li> <li>4. Have a lucid understanding of the intentions and visions of constitution makers in the design and inclusion of distinct aspects in the Indian constitution.</li> </ol> |
| <b>14</b> | <b>Economics</b>   |   |  |
|           | <p>Economics-Major-1</p> <p>INTRODUCTORY<br/>MACROECONOMICS</p>  | <p><b>Course Objectives:</b></p> <p>The basic objective of this course is to familiarize the students about the various concepts of macroeconomics.</p> | <p><b>Course Outcome:</b></p> <p>After successful completion of this course, students will be able to</p> <ol style="list-style-type: none"> <li>1. Use various basic concepts of national income and method of income measurement.</li> </ol>   |

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|  |                                      | <p>This course intends to provide basics concepts of national income, functions of money and value determination. The course is designed such that the students are able to explain the phases of business cycle, its determining factors and employment theory. This course will also familiarize with the revenue and expenditure of government and its impact.</p> | <p>2. Understand role and functions of money in the economy, students will also understand the concepts of inflation, deflation their types and effects with controlling measures economy</p> <p>3. Know different factors responsible for the business cycle and its effect on different sectors of</p> <p>4. Use their knowledge to understand role of government in the economy, sources of revenue and principals of expenditure,</p>  |
|  | <p>Major-2</p> <p>RURAL ECONOMIC</p> | <p>Course Objectives:</p> <ol style="list-style-type: none"> <li>1. To enable the students to understand Rural Environment,</li> <li>2. To enrich the students about components of the Rural Economy</li> <li>3. To enable the students to understand occupational structure.</li> </ol>  | <p><b>Course Outcomes:</b></p> <p><b>After the cut completion of the course, the students will be able so</b></p> <ol style="list-style-type: none"> <li><b>1. To understand the basics of rural development.</b></li> <li><b>2. To study the characteristics, problems, and programmes of rural development.</b></li> <li><b>3. To study the trends and patterns of economic activities in rural areas.</b></li> <li><b>4. To study the role of infrastructural facilities and programmes in rural development</b></li> <li><b>5. To the to know about significance of rural enterprises and agricultural allotted activities.</b></li> </ol> |

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|  | <p><b>ECONOMICS AS A MINOR SUBJECT</b></p> <p><b>PRINCIPLES OF ECONOMICS</b></p> | <p>Course Objective</p> <p>The basic objective of this course is to familiarize the students about the various basic concepts of Microeconomics &amp; Macroeconomics. This course intends to provide basics functions of money, types of inflation and consumption function.</p> | <p><b>Course Outcome</b></p> <p><b>After successful completion of this course, students will be able to</b></p> <ol style="list-style-type: none"> <li><b>1. Use various basic concepts of Micro and Macro Economic.</b></li> <li><b>2. Understand meaning of national income, function of money and consumption Function</b></li> </ol>  |
|  | <p><b>OE-</b></p> <p><b>ECONOMICS OF HUMAN DEVELOPMENT</b></p>                   |  | <p><b>Course Outcomes (Cos): After the successful completion of the course, the student will be able to:</b></p> <ol style="list-style-type: none"> <li><b>1. Differentiate between Human Resource Development (HRD), Human Development (HD) and HRM</b></li> <li><b>2. Understand the concepts of Human Security, describe dimensions of human development, and appreciate various practices and policies of human development, HDI and India</b></li> </ol> |
|  | <p><b>VEC-</b></p> <p><b>TOURISM &amp; HOSPITALITY MANAGEMENT SKILL</b></p>      |  | <p><b>Course Outcomes: After completion of the course, learners will be able to:</b></p> <ol style="list-style-type: none"> <li><b>1. Plan, Lead, Organic and control resources for effective and efficient tourism operations.</b></li> <li><b>2. Create, apply and evaluate marketing strategies for tourism destinations and organizations</b></li> <li><b>3. Develop and evaluate tourism</b></li> </ol>  |

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|           |   |  | <p><b>policy and planning initiatives</b></p> <p><b>4. Demonstrate effective communication skills</b></p> <p><b>5. Evaluate diversity and ethical considerations relevant to the hospitality industry</b></p>   |
|           | <p><b>SEC-<br/>ECONOMIC SURVEY AND<br/>UNION BUDGET</b></p> |  | <p><b>Course Outcomes (COs):<br/>Students will have the capability to understand government policies and will be informed participants in economic decision-making.</b></p> <p><b>The course seeks to familiarize students and deepen their knowledge with regards to the basic concepts related to the Economic Survey and the Union Budget. It proposes to enhance their capability to understand government policies and be informed participants in economic decision making.</b></p> |
| <b>15</b> | <b>English Literature</b>                                   |  |   |
|           | <b>Major – (T3 and T4) English Literature</b>               | <p>Course Objectives:</p> <p>1. The NEP Curriculum for English Literature aims at imparting creativity and utility of the English language through the study of literature and cultural studies.</p> | <p>Course Outcome:</p> <p>1. By the end of the course, the students will be able to write creatively due to the exposure and influence of various literary and cultural concepts.</p> <p>2. The students will be more equipped to face global challenges with their developed intellectual flexibility, creativity, and learning of cultural nuances.</p>   |

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|  |  | <p>2. The course aims at enhancing creative as well as critical acumen among the learners which is an essential attribute in the globalized world.</p> <p>3. The syllabus assists students in the development of intellectual flexibility, creativity, and cultural learning that they may use for their life-long learning.</p> <p>4. The syllabus aims to familiarize the students with representative literary and cultural texts within a significant number of historical, geographical, and cultural contexts.</p> <p>5. The contents will enable the students to apply critical faculties and theoretical approaches to</p> | <p>3. The students will have gained fair ideas about representative literary and cultural texts within a significant number of historical, geographical, and cultural contexts.</p> <p>4. They will acquire expertise in writing essays, research papers, reflective writing, and critical reviews.</p> <p>5. The students will learn to understand and critically appreciate human experiences through literary representations.</p> |
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|  |  | <p>analyze literary and cultural texts in multiple genres.</p> <p>6. The contents will enable the students to write analytically in a variety of formats, including essays, research papers, reflective writing, and critical reviews of secondary sources</p> <p>7. The contents will enable the students to understand the process of communicating and interpreting human experiences through literary representations using historical contexts and varied methodologies.</p> |   |
|  | <p><b>Minor- English Literature ( T4 and Minor-1 Same)</b></p> | <p>Course Objectives:</p> <p>1. The NEP Curriculum for English Literature aims at imparting creativity and utility of the English language through the study</p>  | <p>Course Outcome:</p> <p>1. By the end of the course, the students will be able to write creatively due to the exposure and influence of various literary and cultural concepts.</p> <p>2. The students will be more equipped to face global challenges with their developed</p> |

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|  |  | <p>of literature and cultural studies.</p> <p>2. The course aims at enhancing creative as well as critical acumen among the learners which is an essential attribute in the globalized world.</p> <p>3. The syllabus assists students in the development of intellectual flexibility, creativity, and cultural learning that they may use for their life-long learning.</p> <p>4. The syllabus aims to familiarize the students with representative literary and cultural texts within a significant number of historical, geographical, and cultural contexts.</p> <p>5. The contents will enable the students to apply critical faculties and theoretical approaches to analyze literary and cultural texts</p> | <p>intellectual flexibility, creativity, and learning of cultural nuances.</p> <p>3. The students will have gained fair ideas about representative literary and cultural texts within a significant number of historical, geographical, and cultural contexts.</p> <p>4. They will acquire expertise in writing essays, research papers, reflective writing, and critical reviews.</p> <p>5. The students will learn to understand and critically appreciate human experiences through literary representations.</p> |
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|  |                                     | <p>in multiple genres.</p> <p>6. The contents will enable the students to write analytically in a variety of formats, including essays, research papers, reflective writing, and critical reviews of secondary sources</p> <p>7. The contents will enable the students to understand the process of communicating and interpreting human experiences through literary representations using historical contexts and varied methodologies.</p> |   |
|  | <p>English Literature<br/>VSC-2</p> | <p>Learning Objectives:</p> <p>To enable the learners of this course to know about English Prose as a literary genre.</p> <p>To enable the learners of this course to know about different forms of English Prose.</p>  | <p>Learning Outcomes:</p> <p>The learners will get to know about English Prose as an art form.</p> <p>The learners will get to know the different narrative techniques employed.</p> <p>The course will help learners get jobs as editors, content writers.</p> |

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|           |                             | To enable the learners of this course to know about the Origin and Development of English Prose.   |  |
|           | English Literature<br>SEC-2 |  | <p>Course Outcome</p> <p>By the end of this course, the undergraduate students will develop the basics required for technical communication and drafting skills at primary and advanced levels</p> <p>The course will help hone the learners' drafting skills and make them professionally efficient.</p> <p>The learners will be able to draft personal and official letters and develop the skills to describe what they see.</p>  |
| <b>16</b> | <b>Sociology</b>            |  |  |
|           | Sociology                   | <ul style="list-style-type: none"> <li>• Developing Sociological Thinking:<br/>Understanding the basic concepts and theories of sociology</li> <li>• Knowledge of Social Institutions:<br/>Understanding the function and importance of major social institutions such as family, marriage, education, religion, economy.</li> </ul> | <ul style="list-style-type: none"> <li>• Society and culture instill a sense of duty in student.</li> <li>• Necessary knowledge and resources are available to solve social problem.</li> <li>• Social entrepreneurship promotes sustainable development.</li> <li>• Group work increases the ability to work together and collaborate with people from different backgrounds.</li> <li>• Reformist movements not only provide students with bookish knowledge but also make them citizens who are aware in thought, active in action and</li> </ul> |

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|           |   | <ul style="list-style-type: none"> <li>• Study of Social Processes:<br/>Study of the processes of socialization, social change and social control</li> <li>• Understanding Social Diversity:<br/>Identifying the cultural and ethnic diversity in Indian society.</li> <li>• Analysis of Social Problems:<br/>Understanding social problems and their solutions.</li> <li>• Understanding the definition, scope and importance of sociology.</li> </ul> | <p>contribute to society.</p> <ul style="list-style-type: none"> <li>• To provide knowledge about human behavior within groups and social systems.</li> <li>• To help students apply a sociological perspective to understand how society shapes individual lives, distinguishing between common-sense knowledge and sociological knowledge.</li> </ul> |
| <b>17</b> | <b>History</b>  |   |   |
|           | <p>SEMESTER- II<br/>MAJOR<br/>MANDATORY-3 (4<br/>Credit) HIS2MM3 -<br/>HISTORY OF INDIA:<br/>550 TO 1206 A.D.</p> | <p>Course Objectives:<br/>Students will learn and analyze about the transition from historic centuries to the early medieval. They will be able to delineate changes in the realm of</p>  | <p>Course outcome: CO1. The students will learn and able to analyse the transition of Indian society. CO2. The students will be able to delineate changes in the realm of polity and culture. CO3. The students will know the administration and art and architecture of south India. C04. The students will understand the society and</p>             |

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|  |   | polity and culture; puranic religion; the growth of vernacular languages and newer forms of art and architecture.   | religion of medieval India.  |
|  | MOJOR MANDATORY-4 (2 Credit) HIS2MM4 - UNDERSTANDING HERITAGE | Course Objectives: The objective of this course is to sensitize the learners on the heritage value of Indian archaeology and its cultural diversity. The students would learn the various policy measures in India for the conservation and preservation of heritage values and approaches. | Course Outcome: CO1. The learner will be able to access the core concepts of heritage conservation and management. C02. The learner will examine various products and contemporary stakeholders shaping the heritage tourism of India. |
|  | MINOR (Other than Major) (2 Credit) HIS2M1 - IDEA OF BHARAT   | Course Objectives: Students will acquire knowledge regarding the primitive life and cultural status of the people of ancient India. They can gather knowledge about the society, culture, religion and political history of ancient India. They will also acquire the                       | Course Outcome: C01. The student will understand the concept of Bharatvarsha, its geography and Akhand Bharat. C02. The student will know their cultural roots and ancient Indian philosophy.  |

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|  |   | knowledge of changing socio-cultural scenarios of India   |   |
|  | <p>Open Elective OE2 (4 Credits)</p> <p>HIS20KE2 - INDEPENDENT INDIA: 1948-2010 A</p> | <p>Course Objectives: The paper is designed to understand the process of integration of Princely state in India, making of Indian constitution and to know the salient features of Indian constitution. It further focuses on the new economic initiatives propagated in independent India. The paper aims to enhance student's knowledge on international relations of India with its neighbours and introduced to establishment of regional political entities. Students are enabled to analyse development of democratic culture in the princely states.</p> | <p>Course Outcome: COL. The student will understand the making of Indian constitution and to know the salient features of Indian constitution. CO2. The student will know the new economic initiatives propagated in independent India. CO3. The student will critically analyse the international relations of India with its neighbours. CO4. The students will be enabled to analyse development of democratic culture in the princely states.</p> |
|  | <p>VSC-2 (2 Credit)</p> <p>HIS2VSC2 - MUSEUMS IN INDIA</p>                            | <p>Course Objectives: The paper has been designed to help the students to</p>   | <p>Course Outcome: CO1. The course will equip the student with practical knowledge in Museology along with theory. CO2. The course will enhance</p>   |

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|  |   | acquire knowledge on different types of museums.  | the awareness about heritage preservation and its institutional methods.   |
|  | SEC2 (2 Credits)<br>HIS2SEC2-<br>HISTORICAL<br>TOURISM                  | Course Objectives: The Heritage tourism is quite a recent development; focused on combination of activities from conservation, preservation and promotion of historical sites. The paper is designed to make the students know their heritage. The paper will also serve the purpose of making awareness about importance of historical monuments and various tourist places in Maharashtra | Course Outcome: COL. The student will know the cultural roots of Indian people. CO2. The students will survey the community's historic resources. CO3. The students will know the importance of Historical monuments as tourist destination. CO4. The student will learn about the various tourist resources of Maharashtra. |
|  | VALUE EDUCATION<br>COURSE(VEC)<br>HIS2VEC2-<br>CONSTITUTION OF<br>INDIA | Course Objectives: The paper is designed for students to make them know the constitutional developments in India. To enrich the knowledge of the students with the form of Government by which they are governed. To  | Course Outcome: COL. The students will understand the constitutional development of India during the British rule. CO2. The students will understand the development of democratic institutions in India.  |

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|           |   | incite a deep interest in the preservation of unity, integrity and solidarity of our nation.  |   |
| <b>18</b> | <b>Marathi Literature</b>   |   |   |
|           | Marathi Literature  | <p>1- नाटक या वाङ्मय प्रकाराचा आढावा घेऊन स्वरूप व वैशिष्ट्ये यांचे आकलन करून देणे--</p> <p>2-वि- वा शिरवाडकरांच्या नटसम्राट या शोकात्म नाटकाची माहिती देणे-</p> <p>3- कथा व कविता वाङ्मय प्रकारांची ओळख करून देणे-</p>   | <p>1 मराठीतील विविध वाङ्मय प्रकारांची माहिती विद्यार्थ्यांना मिळाली-</p> <p>2- नाटक या वाङ्मय प्रकाराची स्वरूप व यांची जाणीव विद्यार्थ्यांना झाली-</p> <p>3- नटसम्राट या शोकात्म नाटकाच्या आधारे वि- वा शिरवाडकरांच्या साहित्याचे रहस्य कळून आले-</p>   |
| <b>19</b> | <b>Ambedkar Thought</b>   |   |   |
|           | <p>Semester – II</p> <p>Major T- 2</p> <p><b>SOCIAL THOUGHT OF DR. AMBEDKAR (ATH)</b></p> | <p>This course aims to develop students' understanding of Dr. Ambedkar's view on Indian social structure and his theories of caste, origin, social features of the caste system, and theories of Untouchability. The course will focus on the social, cultural, and religious aspects of the caste system as well as the economic aspects</p> | <p>1. Student's abilities are developed to understand and examine Dr. Ambedkar's Caste-Class theory.</p> <p>2. Students can critically examine Dr. Ambedkar's thoughts on eradicating the caste system.</p> <p>3. Students can analyse and explain Dr. Ambedkar's thoughts on the origin and eradication of untouchability.</p> |

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|  |   | of the caste system.   |  |
|  | Semester – II<br>Mandatory Minor<br>Dr. Ambedkar’s Thought on Land Reform (ATH)               | This paper make the student know ownership and distribution of agricultural land in India  | <ol style="list-style-type: none"> <li>1. The students become to know the agricultural system in India.</li> <li>2. The students will know problems of landless masses and need of land reform.</li> <li>3. The students will know about the landless movement with it’s objectives.</li> </ol>  |
|  | MINOR T-1<br>ROLE OF DR. AMBEDKAR IN ROUND TABLE CONFERENCE (ATH)                             | <p>The purpose of the subject is to understand the historical context of the Round Table conferences</p> <p>and Dr. Ambedkar’s role in them and analyse Dr. Ambedkar’s political and social philosophy as evidenced by his speeches and writings at the Round Table conferences.</p> | <p>The student shall be able to –</p> <ol style="list-style-type: none"> <li>1. Evaluate the impact of Dr. Ambedkar’s participation in the Round Table Conferences on Indian independence and the development of the Indian Constitution.</li> <li>2. Critically examine Dr. Ambedkar’s legacy as a social justice and equality champion.</li> <li>3. Articulate Dr. Ambedkar’s key arguments favour separate electorates for Dalits and other marginalised groups.</li> </ol> |
|  | Semester – II, Open Elective paper<br>Dr. Ambedkar’s Social movement and caste struggle (ATH) | To make the students aware of the social stratification and caste system based on inequality in India and their  | <ol style="list-style-type: none"> <li>1. The students will learn about the meaning, nature, aims and objects of social movement in the interest of neglected and exploited masses.</li> <li>2. The students will learn the</li> </ol>   |

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|                        |   | demerits. To develop students' understanding of social movements in their true sense and of Dr. Ambedkar's principles of social movements. | <p>difference between social change and revolution.</p> <p>3. The students will learn about various social movements of Dr. Ambedkar.</p> <p>4. The students will come across the origin of the caste system.</p> <p>5. The students will learn the demerits of the caste system, untouchability and struggle against it.</p> |
|                        | <p>Vocational Skill Course: BAAT2VSC02</p> <p>Framing Questionnaire (ATH)</p> | <p>It makes the students know how to develop skill for framing questionnaire on the concerned subjects to reach to the required goal.</p>  | <p>1. It develops sociological thinking in the students.</p> <p>2. It cultivate the research attitude among students.</p> <p>3. The students come across the problems of society and learn to understand them.</p>  |
|                        | <p>Semester – II</p> <p>SEC - Social Service: The Ambedkarite way (ATH)</p>   | <p>This paper will teach the students about the social service in concern with the positive social transformation.</p>                     | <p>1. The students will come across the meaning of social service in true sense.</p> <p>2. The students will understand the need of Socio-Economic-radical changes.</p> <p>3. The students will learn the need political participation, problems and to workout solutions.</p>  |
| <b>Third -Semester</b> |   |  |   |
| <b>20</b>              | <b>English</b>  | On the completion of the Programme:  | <p>1. To nurture aspirations to be successful in their lives by finding a profession of</p>   |

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|    |                   | <p>Students will be able to apply the human values, the grammar , vocabulary to respond to the questions and in daily lives and will espouse the values through the biographies of people who by their hard braved life and succeeded.</p>  | <p>their choice.</p> <ol style="list-style-type: none"> <li>2. To make aware of civic sense and inspire to inculcate compassion towards others.</li> <li>3. To develop consciousness for environmental preservation.</li> <li>4. To introduce the idea of 'Work is Worship' and realize the importance of hard work.</li> </ol>  |
| 21 | Marathi           | <p>१ मराठी भाषेच्या समृद्धीची जाणीव करून देणे व प्राचीन तसेच आधुनिक साहित्याचा परिचय घडविणे</p> <p>२ भाषेच्या व साहित्याच्या अभ्यासाद्वारे राष्ट्रीय आणि सामाजिक प्रश्नांची जाणीव करून देऊन त्यावरील उपायाचा शोध घेण्यास प्रवृत्त करणे.</p> <p>३ मानवतावाद व जीवनव्यवहाराची सांगड घालणे व मानवतावादी दृष्टिकोन निर्माण करणे.</p> <p>४ विद्यार्थ्यांची लेखनकौशल्ये विकसित करणे व त्यांना रोजगारा भिमुख बनविणे</p> <p>५ ग्रामजीवन, लोकसंस्कृती व श्रमसांस्कृती याविषयी आदराची भावना निर्माण करणे.</p> | <p>१ साहित्याचा आस्वाद घेण्याची क्षमता विकसित होईल.</p> <p>२ सांपादन काया, संवादलेखन यासारखी भाषिक संवाद कौशल्ये भाषाव्यवहारात तसेच जीवनव्यवहारात उपयुक्त ठरतील.</p> <p>३ मुद्रण व्यवहारात परिचय होईल.</p> <p>४ मानवतावाद व जीवनमुल्यांची व विदयांची जोपासना करतील</p> <p>५ श्राव्य,दकृ श्राव्य व दकृ माध्यमासाठी सांवादलेखन कसे करावे याची जाण निर्माण होईल.</p> <p>६ देशप्रेम व देशभक्तीची भावना निर्माण होईल.</p> <p>७ अभ्यासक्रमाची उद्दिष्टे साध्य होतील.</p> |
| 22 | Political Science |   | <p><b>The students will be able:</b></p> <ol style="list-style-type: none"> <li>1. To understand the</li> </ol>  |

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|    |                  |   | <p><b>processes and dynamics of Indian government and politics</b></p> <p><b>2. To understand the strengths and weaknesses of Indian political processes, both in terms of their effectiveness in responding to public policy needs.</b></p> <p><b>3. To attentive current political issues in context of wider debates about democratic life in India and the capacity of political institutions</b></p> <p><b>4. To understand the basic concept and issues concerning the Right to Information Act, Human Rights and challenges.</b></p>  |
| 23 | <b>Economics</b> | <p>On the completion of the course:</p> <p>Economics subject enables the learners to build up a professional carrier as economists, financial advisors, economics planners and policy makers. It prepares them to cope up with the stress and strain involved in the process of</p> | <p>1. This course will enable the students to analyse to various trends in Banking and Financial institutions.</p> <p>2. Students will be able to compare different types of banking institutions for their efficiency in providing finance to the various categories f industries and businesses.</p> <p>3. The study the technology of core banking and retail banking will make students to be employable in banking systems and they will find opportunities to seek the jobs in banking and finance sector.</p> <p>4. The students will be able to understand the role of various</p> |

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|    |                           | <p>economic development. Department supports the education and training of students, teachers and research in economics.</p> | <p>types of banking and financial institutions and shall be give suggestions for improvement.</p> <p>5. The course will make students understand major policy debates on monetary policy nd shall be able to give suggestions.</p> <p>6. The study of money markets and financial markets will help to understand basis theoretical foundations of their working and promote to study the methodological functioning of these markets which will open opportunities for them to get employments.</p>            |
| 24 | <b>English Literature</b> | <p>On completion of the Programme:</p> <p>Students will become experts in the studied text.</p>                              | <p>The students will be able to:</p> <ol style="list-style-type: none"> <li>1. To apply critical and theoretical approaches to the reading and analysis of literary and cultural texts in multiple genres</li> <li>2. To describe the critical ideas, values, and themes.</li> <li>3. To write analytically, using language competencies.</li> <li>4. To understand the different varieties of literature.</li> <li>5. To inculcate in their academics ethical, moral, national and cultural values.</li> </ol> |
| 25 | <b>Sociology</b>          |  | <ol style="list-style-type: none"> <li>1. To know in detail about Sociology as a Discipline</li> <li>2. To know in detail about</li> </ol>  |

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|    |                           |   | <p>August Comte, Harbary Spencer</p> <p>3. To know in detail about Charles Horton Cooley, Emile Durkhim</p> <p>4. To know in detail about Karl Marx, Max Weber.</p>  |
| 26 | <b>History</b>            |   | <p>1. The Battle of Buxar and how the British implemented their policy in India</p> <p>2. Gained information about working methods, Kayamdihara ,ryotwari and Mahalwari and Lord Wellesley deployment forces.</p> <p>3. The uprising of 1857 (independent war) result was known</p> <p>4. Learned how nationalism emerged in India</p> |
| 27 | <b>Marathi Literature</b> | <p>1- स्वातंत्र्योत्तर मराठी कविता या पुस्तकातील कवितांचा व कविंचा आढावा घेणे-</p> <p>2- अभिनव काव्यप्रकाश या साहित्य ग्रंथातील काव्याची लक्षणे व काव्याचे प्रयोजन याविषयी माहिती देणे-</p> | <p>2- स्वातंत्र्योत्तर मराठी कविता मधील निवडक कवी व कवितांचा भावार्थ विद्यार्थ्यांना समजून आले-</p> <p>3- अभिनव काव्यप्रकाश मधील कवितेची लक्षणे व कवितेची प्रयोजने याविषयीची माहिती मिळाली-</p>  |
| 28 | <b>Ambedkar Thought</b>   |   | <p>Students will be able to understand Dr. Ambedkar's Thoughts on Religion.</p> <p>Students will be able to understand Dr. Ambedkar's Views on : a) Renouncement of Siddhartha. b) Enlightenment of Siddhartha. c) First "Dhamma-Chakka-</p>   |

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|                         |                |  | <p>Pavattan”.</p> <p>Students will be able to understand Dr. Ambedkar’s View on : a) Four Nobel Truth. b) Eight Fold path of Buddha. c) “Anishwarwada” and “Anityatawada”. d) Rebirth and Nibhan.</p>  |
| <b>Fourth- Semester</b> |                |  |  |
| <b>29</b>               | <b>English</b> | <p>On the completion of the Programme:</p> <p>Students will be able to apply the human values, the grammar , vocabulary to respond to the questions and in daily lives and will espouse the values through the biographies of people who by their hard braved life and succeeded.</p>                    | <p>The students will be able:</p> <ol style="list-style-type: none"> <li>1. To develop the personality of the students.</li> <li>2. To lift themselves through motivational texts.</li> <li>3. To develop an understanding of gender sensitization.</li> <li>4. To improve learner's reading speed, presentation skills, and understanding of ethics, and values.</li> </ol> |
| <b>30</b>               | <b>Marathi</b> | <p>१ मराठी भाषेच्या समृद्धीची जाणीव करून देणे व प्राचीन तसेच आधुनिक साहित्याचा परिचय घडविणे</p> <p>२ भाषेच्या व साहित्याच्या अभ्यासाद्वारे राष्ट्रीय आणि सामाजिक प्रश्नांची जाणीव करून देऊन त्यावरील उपायाचा शोध घेण्यास प्रवृत्त करणे.</p> <p>३ मानवतावाद व जीवनव्यवहाराची सांगड घालणे व मानवतावादी</p> | <p>१ साहित्याचा आस्वाद घेण्याची क्षमता विकसित होईल.</p> <p>२ सांपादन काया, संवादलेखन यासारखी भाषिक संवाद कौशल्ये भाषाव्यवहारात तसेच जीवनव्यवहारात उपयुक्त ठरतील.</p> <p>३ मुद्रण व्यवहारात परिचय होईल.</p> <p>४ मानवतावाद व जीवनमुल्यांची व विदयांची जोपासना करतील</p> <p>५ श्राव्य,दकृ श्राव्य व दकृ माध्यमासाठी सांवादलेखन कसे करावे याची जाण निर्माण होईल.</p>            |

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|    |                   | <p>दृष्टिकोन निर्माण करणे.</p> <p>४ विद्यार्थ्यांची लेखनकौशल्ये विकसित करणे व त्यांना रोजगारा भिमुख बनविणे</p> <p>५ ग्रामजीवन, लोकसंस्कृती व श्रमसांस्कृती याविषयी आदराची भावना निर्माण करणे.</p> | <p>६ देशप्रेम व देशभक्तीची भावना निर्माण होईल.</p> <p>७ अभ्यासक्रमाची उद्दिष्टे साध्य होतील.</p>   |
| 31 | Political Science |   | <p><b>The students will be able:</b></p> <ol style="list-style-type: none"> <li><b>1. To understand the vital contemporary emerging issues of center-state relation, political parties, emergence of new leadership at different levels, demand for autonomy movement, ethnic conflicts etc.</b></li> <li><b>2. To understand the changing nature of the Indian State</b></li> <li><b>3. To understand the Religion and Politics, Cast and Politics, Affirmative Action policies.</b></li> </ol> |
| 32 | Economics         | <p>On the completion of the course:</p> <p>Economics subject enables the learners to build up a professional carrier as economists, financial advisors, economics</p>                             | <ol style="list-style-type: none"> <li>1. This course will use appropriate analytical frameworks to review major trends in economic indicators in the India in post-independence period.</li> <li>2. It will examine various paradigm shifts and turning points in policy debates in India.</li> <li>3. It enables students to examine sector specific policies and their impacts in shaping trends in key economic indicators in India. And</li> </ol>  |

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|           |                           | planners and policy makers. It prepares them to cope up with the stress and strain involved in the process of economic development. Department supports the education and training of students, teachers and research in economics. | they will be able to give constructive suggestion for further developments.<br><br>4. The course will be able to highlight major policy debates and evaluate the Indian empirical evident to update the major changes of Indian Economy.  |
| <b>33</b> | <b>English Literature</b> | On completion of the Programme:<br><br>Students will become experts in the studied text.  | Students will be able :<br><br>1. To apply critical and theoretical approaches to the reading and analysis of literary and cultural texts in multiple genres<br>2. To describe the critical ideas, values, and themes.<br>3. To write analytically, using language competencies<br>4. To understand the different varieties of literatures<br>5. To inculcate in their academics ethical, moral, national and cultural values |
| <b>34</b> | <b>Sociology</b>          |   | 1. To know in detail about Founders of theoretical Root's of caste in India B.R. Ambedkar and G.S. Gurye<br>2. To know in detail about Social change from   |

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|    |                           |  | <p>Indian perspective M.N. Shrinivas &amp; D.P. Mukharjee</p> <p>3. To know in detail about Indian Society and Contemporary Chenges R.K. Mukherjee and S.C. Dube</p> <p>4. To know in detail about Gender and Society in India Tarabari Shinde, Jyotirao Fule and Savitribai Fule</p> |
| 35 | <b>History</b>            |  | <p>1. Learned about the establishment of the National Congress</p> <p>2. Understood the role of Jahal and Mawal</p> <p>3. Information was received about non-cooperation, civil disobedience movement</p> <p>4. Gained detailed knowledge of how India became independent</p>         |
| 36 | <b>Marathi Literature</b> | <p>1- स्वातंत्र्योत्तर मराठी कथा या पुस्तकाच्या आधारे कथाकार व कथेचा आढावा घेणे-</p> <p>2- अभिनव काव्यप्रकाश या पुस्तकातील शब्दाच्या तीन शक्ती व अलंकाराचा आढावा घेणे-</p> | <p>1- स्वातंत्र्योत्तर मराठी कथाकारांच्या कथांची माहिती विद्यार्थ्यांना प्राप्त झाली-</p> <p>2- अभिदा। व्यंजना व लक्षणा या शब्दाच्या तीन शक्ती विद्यार्थ्यांना समजून आल्या-</p>   |
| 37 | <b>Ambedkar Thought</b>   |  | <p>Students will be able to understand Economic Thought in India : a) Ancient: Vedic &amp; Buddhist period.</p> <p>b: Medieval Muslim Period</p>  |

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|                        |                |  | <p>c) Modern:Jyotirao Phuley, Shahu Maharaj, M.K.Gandhi.</p> <p>Students will be able to understand the views of Dr. B. R. Ambedkar on Economics of Caste System.</p> <p>Students will be able to understand Economics of Untouchability.</p>   |
| <b>Fifth- Semester</b> |                |  |   |
| <b>38</b>              | <b>English</b> | <p>Upon successful completion of the B.A. Programme, students will be competent enough to internalize the subsequent qualities, which will facilitate their pursuit of envisioned objectives in their future lives: (a) Grasping of ethical principles (b) Development of a spirit of community engagement (c) Becoming a conscientious and accountable member of society (d) Cultivation of analytical disposition (e) Enhancement of innovative aptitude</p> | <ol style="list-style-type: none"> <li>1. Students will adopt and put into practice the principles of tolerance and simplicity as part of their everyday routines.</li> <li>2. During a time characterized by widespread unemployment, students will find inspiration in the stories of three prominent personalities, motivating them to consider self-employment as a viable option.</li> <li>3. The impactful messages aimed at the general public, as communicated through the poetry segment, will exert a favorable influence on the students' attitudes.</li> <li>4. Engaging with the Grammar and Composition segment will enhance their self-assurance, leading to the development of proficient communication abilities.</li> </ol> |
| <b>39</b>              | <b>Marathi</b> | १ मराठी साहित्यातील  | १ साहित्यातील विविध प्रवाहांची जाणीव  |

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|    |                   | <p>विविध प्रवाहांची जाणीव करून देणे.</p> <p>२ भाषेच्या व साहित्याच्या अभ्यासाद्वारे भारतीयत्वाच्या सांकल्पनेची ओळख करून देणे.</p> <p>३ विविध साहित्य प्रकारांची ओळख करून देणे.</p> <p>४ व्यावहारिक मराठीच्या माध्यमातून लेखन कौशल्ये विकसित करणे व रोजगाराभिमुख बनविणे</p> <p>५ भारतीय सांस्कृती – कालची ,आजची आणि उद्याची या संदर्भात समन्वयाची भावना रुजवणे.</p> | <p>होईल.</p> <p>२ संत, पंत आणि तंत साहित्याची जा ओळख होईल. साहित्य आणि समाज यांच्या परस्पर संबंधाची जाणिव होईल</p> <p>३ मुद्रितशोधन यासारखी भाषिक कौशल्ये विकसित होवून कार्यालयीन भाषा व्यवहारात व जीवनव्यवहारात उपयुक्त ठरतील</p> <p>४ अचूक लेखन करण्याची सवय लागेल.</p> <p>५ दकु श्राव्य माध्यमासाठी लेखन, मुद्रितशोधन, भाषांतर कौशल्ये विकसित झाल्यामुळे रोजगाराच्या संधी उपलब्ध होतील.</p> <p>६ सामाजिक व राष्ट्रीय प्रश्नांवर विचार करण्याची क्षमता निर्माण होईल.</p> <p>७ देशातील वेगवेगळ्या सांस्कृतीचा आदर करण्याची क्षमता निर्माण होईल.</p> <p>८ अभ्यासक्रमाची उद्दीष्टे साध्य होतील.</p> |
| 40 | Political Science |  | <p><b>The students will be able to:</b></p> <ol style="list-style-type: none"> <li><b>1. Comparative understanding of specific world constitutions such as U. K. and U.S.A.</b></li> <li><b>2. To analyze contemporary problems in the countries (U. K. and U. S. A.) under consideration in light of the conceptual frameworks presented in class.</b></li> </ol>   |
| 41 | Economics         | <p>On the completion of the course:</p>  | <ol style="list-style-type: none"> <li>1. This course will use appropriate analytical frameworks to review major trends in economic indicators in the India in post-</li> </ol>  |

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|    |                           | <p>Economics subject enables the learners to build up a professional carrier as economists, financial advisors, economics planners and policy makers. It prepares them to cope up with the stress and strain involved in the process of economic development. Department supports the education and training of students, teachers and research in economics.</p> | <p>independence period</p> <ol style="list-style-type: none"> <li>2. The course will be able to highlight major policy debates and evaluate the Indian empirical evident to update the major changes of Indian Economy.</li> <li>3. It will examine various paradigm shifts and turning points in policy debates in India.</li> </ol> <p>It enables students to examine sector specific policies and their impact trends in key economic indicators in India</p> |
| 42 | <b>English Literature</b> | <p>On completion of the course :<br/>Students will be able to understand varieties of literature in all the forms available.</p>  | <p>The students will be able to:</p> <ol style="list-style-type: none"> <li>1. To apply critical and theoretical approaches to analysis of literary texts .</li> <li>2. To write analytically using language competencies.</li> </ol>  |
| 43 | <b>Sociology</b>          |   | <ol style="list-style-type: none"> <li>1. To know in detail about Indian Society, Structure and Inequality</li> <li>2. To know in detail about Family in contemporary India</li> <li>3. To know in detail about Tribal Issue and problems in India</li> <li>4. To know in detail about</li> </ol>  |

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|                        |                    |  | Rural Community in India  |
| 44                     | History            |  | <ol style="list-style-type: none"> <li>1. The French Revolution was also the first revolution in the world</li> <li>2. What are the reasons for imperialism?</li> <li>3. World War I - The Treaty of Versai</li> <li>4. Learned about the United Nations and its achievements and failures</li> </ol> |
| 45                     | Marathi Literature | <p>1- पुर्णामायची लेकरं या कादंबरीचा आढावा घेणे-</p> <p>2- दलित साहित्य वेदना व विद्रोह या पुस्तकातील दलित साहित्याचा आढावा घेणे-</p> <p>3- साहित्याच्या विविध प्रवाहाचा आढावा घेणे-</p> | <p>1- पुर्णामायची लेकरं या कादंबरीतील समाजजिवनाची माहिती विद्यार्थ्यांना मिळाली-</p> <p>2- दलित साहित्य वेदना व विद्रोह यातून दलितांच्या वेदनेचे व विद्रोहाचे विद्यार्थ्यांना आकलन झाले-</p> <p>3- प्राचीन साहित्यातील संत, पंत व तंत साहित्यप्रवाहाची माहिती विद्यार्थ्यांना प्राप्त झाली-</p>       |
| 46                     | Ambedkar Thought   |  | <p>Students will be able to understand the Foundation of Dr. Ambedkar's Political Thought.</p> <p>Students will be able to understand Dr. Ambedkar's views on Democracy.</p> <p>Students will be able to understand the Political Legacy of Dr. Ambedkar.</p>   |
| <b>Sixth- Semester</b> |                    |  |   |
| 47                     | English            | Upon successful  | 1. Students will grasp the  |

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|    |         | <p>completion of the B.A. Programme, students will be competent enough to internalize the subsequent qualities, which will facilitate their pursuit of envisioned objectives in their future lives: (a) Grasping of ethical principles (b) Development of a spirit of community engagement (c) Becoming a conscientious and accountable member of society (d) Cultivation of analytical disposition (e) Enhancement of innovative aptitude</p> | <p>idea that prioritizing friendships and human connections is more valuable than a self-centered focus on financial gains, as portrayed in the Prose section.</p> <ol style="list-style-type: none"> <li>1. After engaging with A.P.J. Abdul Kalam's reflections on resilience, students will witness a significant positive influence on their own lives.</li> <li>2. The remarkable accomplishments of renowned personalities will prompt learners to understand the truth that determination and hard work are the keys to success.'</li> <li>3. The Poetry Segment will enhance the promotion of spreading harmony and the message of serenity.</li> </ol> |
| 48 | Marathi | <p>१ मराठी साहित्यातील विविध प्रवाहांची जाणीव करून देणे.</p> <p>२ भाषेच्या व साहित्याच्या अभ्यासाद्वारे भारतीयत्वाच्या सांकल्पनेची ओळख करून देणे.</p> <p>३ विविध साहित्य प्रकारांची ओळख करून देणे.</p> <p>४ व्यावहारिक मराठीच्या माध्यमातून लेखन कौशल्ये विकसित करणे व रोजगाराभिमुख बनविणे</p>   | <p>१ साहित्यातील विविध प्रवाहांची जाणीव होईल.</p> <p>२ संत, पंत आणि तंत साहित्याची जा ओळख होईल. साहित्य आणि समाज यांच्या परस्पर संबंधाची जाणिव होईल</p> <p>३ मुद्रितशोधन यासारखी भाषिक कौशल्ये विकसित होवून कार्यालयीन भाषा व्यवहारात व जीवनव्यवहारात उपयुक्त ठरतील</p> <p>४ अचूक लेखन करण्याची सवय लागेल.</p> <p>५ दृक् श्राव्य माध्यमासाठी लेखन, मुद्रितशोधन, भाषांतर कौशल्ये विकसित झाल्यामुळे रोजगाराच्या संधी उपलब्ध होतील.</p>  |

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|    |                   | <p>५ भारतीय सांस्कृती – कालची ,आजची आणि उद्याची या संदर्भात समन्वयाची भावना रुजवणे.</p>   | <p>६ सामाजिक व राष्ट्रीय प्रश्नांवर विचार करण्याची क्षमता निर्माण होईल.</p> <p>७ देशातील वेगवेगळ्या सांस्कृतीचा आदर करण्याची क्षमता निर्माण होईल.</p> <p>८ अभ्यासक्रमाची उद्दीष्टे साध्य होतील.</p>  |
| 49 | Political Science |   | <p><b>The students will be able to:</b></p> <ol style="list-style-type: none"> <li><b>To understand the nature and development in International Politics</b></li> <li><b>To relate the basics of international relations and the new trends in the realm of international relations.</b></li> </ol>  |
| 50 | Economics         | <p>On the completion of the course:</p> <p>Economics subject enables the learners to build up a professional carrier as economists, financial advisors, economics planners and policy makers. It prepares them to cope up with the stress and strain involved in the process of economic development. Department supports the</p> | <ol style="list-style-type: none"> <li>It makes the students to understand the aspect of development process in low income counties. Its focus is on improving the potential for the mass of population through health and education.</li> <li>It makes learners to understand the economic functioning and conditions of our country in the context of past, present and future.</li> <li>Enable the students the pattern and nature of international trade and their contribution to economic development</li> </ol> <p>It also enables learners to know the role of public authorities in raising revenue and its spending.</p> |

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|           |                           | education and training of students, teachers and research in economics.  |   |
| <b>51</b> | <b>English Literature</b> | On completion of the course :<br>Students will be able to imbibe ethical , moral and cultural values in an academic context. | The students will be able to:<br><br>1. To comprehend the texts in different given contexts.<br>2. To understand the ideas , values and themes impacting culture and societies.   |
| <b>52</b> | <b>Sociology</b>          |  | 1. To know in detail about Education in contemporary<br>2. To know in detail about Displacement and Rehabilitation<br>3. To know in detail about Intolerance, Riot and Crime<br>4. To know in detail about Epidemic social issues & policy intervention             |
| <b>53</b> | <b>History</b>            |  | 1. Learned about Russia's Five Year Plan<br>2. Hitler - Mussolini's foreign policy in detail<br>3. Learned the reasons for the Second World War<br>4. Received information about the United Nations and the performance of the Suez Canal, NATO SEATO , Warsaw Pact |

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| 54 | <b>Marathi Literature</b> | <p>1-एक होता कार्कर या चरित्रातील कार्करचे चरित्र समजून घेणे-</p> <p>2- भाषाविज्ञान पुस्तकातील मराठीची वर्णमालेचा आढावा घेणे-</p> | <p>1- जॉर्ज वॉशिंग्टन कार्कर यांचे चरित्र विद्यार्थ्यांना समजून आले-</p> <p>2- मराठीची वर्णमालेतील स्वर व व्यंजनाची माहिती विद्यार्थ्यांना मिळण्यास मदत झाली-</p>   |
| 55 | <b>Ambedkar Thought</b>   |   | <p>Paper: Constitutional thought of Dr. Ambedkar</p> <p>Students will understand nature and objectives of constitution.</p> <ul style="list-style-type: none"> <li>· Students will be able to learn Fundamental rights and states policy.</li> <li>· Students will be able to learn about constitutional safe guards to SC and ST .</li> <li>· Students will be able to learn about Faderal system and constitutional morality</li> </ul> |

## **Programme Outcomes**

### **Course Outcomes**

#### **Faculty of Commerce**

#### **Academic session-2024-2025**

PO1.Students could work on their start- up projects .

PO2.Students will be exposed to the nuances of Finance and Commerce.

PO3.Students will be able to do their Masters in allied subjects and venture into Market Research .

PO4. On completion of graduation, Students will be equipped with required skills and various aspects of Managerial Tasks and over all Administration abilities of the Company.

PO5.Enables learners to get theoretical and practical exposure in the commerce sector which includes Accounts, Commerce, Management and Economics.

| <b>Sr. No.</b>         | <b>Subject</b>                                 | <b>Programme Outcomes</b> | <b>Course Outcomes</b>   |
|------------------------|--|---------------------------|--|
| <b>First- Semester</b> |  |                           |  |
| <b>1</b>               | <b>Major- Principle of Business Management</b> |                           | <b>The student will be able to identify different functions of management and management thoughts.</b><br><b>The student will be able to differentiate between Management and Administration as well as identify the skills required for a manager.</b><br><b>The student will be able to Outline and illustrate plans for various activities.</b><br><b>The Student will be able to develop competency of decision making while working in a group.</b> |

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|          |   |  | <b>The student will be able to apply various management principles in his/her day-to-day life</b>  |
| <b>2</b> | <b>OE 1- Economic Systems</b>                 |  | <p><b>The students will be able to understand various types of economic systems.</b></p> <p><b>The students will be able to understand socialist economic system.</b></p> <p><b>The students will be able to understand the working mechanism of Capitalist Economy.</b></p> <p><b>The students will be able to understand the structure of a mixed economy.</b></p>   |
| <b>3</b> | <b>OE 2- Elements of Business Environment</b> |  | <p><b>The Students will be able to compare and contrast internal and external environment of business.</b></p> <p><b>The students will be able to understand economic environment of business</b></p> <p><b>The students will be able to understand the socio-cultural environment of business and social responsibilities of business.</b></p> <p><b>The students will be able to understand technological business environment and its impact.</b></p> |
| <b>4</b> | <b>AEC- English</b>                           |  | <p><b>1. The students will be able to understand Reading Skills (Skimming, Scanning, Understanding graphs, charts, deciphering information)</b></p> <p><b>2. The students will be able to understand Customer-relation skills (Persuasion, justification, convincing, man-management)</b></p> <p><b>3. The students will be able to understand Leadership Skills (positivity,</b></p>  |

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|   |  |  | <p>confidence building , taking initiative &amp; Nonverbal Communication Skills — gesture, tone, language etc)</p> <p>4, <b>The students will be able to understand</b> Cross Cultural Communication Skills-understanding different cultures, people, global understanding</p>   |
| 5 | <b>VEC- Environmental Studies</b>              |  | <p><b>Explain the basics of Environmental Science and Atmospheric Science along-with the components of Environment.</b></p> <p><b>Explicate the importance of Environmental Education.</b></p> <p><b>Elucidate the fundamentals of atmospheric science including formation, depletion and effects of ozone layer and acid rain on environment.</b></p> <p><b>Describe the various physical and chemical characteristics and properties of Water and Soil.</b></p> <p><b>Understand the Ecology and its allied branches.</b></p> <p><b>Comprehend about Population and Community Ecology.</b></p> <p><b>Study the changes in Population by understanding the concept of Population ecology.</b></p> |
| 6 | <b>IKS- Indian Economic and Business Model</b> |  | <p><b>The students will be able to compare past and present Indian thoughts.</b></p> <p><b>The students will be able to understand Kautilya’s Economic thoughts.</b></p> <p><b>The students will be able to understand agriculture and manufacturing framework in ancient India.</b></p>   |

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|                         |   |  | <b>The students will be able to compare various Indian Business Models.</b>   |
| 7                       | <b>VSC- Content Writing</b>                   |  | <p>The student will be able to understand basic concepts of content writing.</p> <p>The student will be able to gain knowledge regarding types of content writing and editing.</p> <p>The student will be able to acquire knowledge on various writing styles.</p> <p>The student will be able to create plagiarism-free content.</p> <p>The student will be able to understand and write effective content without plagiarism.</p> |
| 8                       | <b>SEC- Start-up Support Executive</b>        |  | <p>Describe ideas and the legality of Start-up solutions.</p> <p>Discuss registrations and statutory compliances of Partnership.</p> <p>Identify Ideas and analyses the applicability of statutory filings</p> <p>Describe procedural codes of Registrar of Company</p> <p>Elaborate Preparation of documents.</p>  |
| 9                       | <b>CC- NSS/NCC/Sports/Cultural Activities</b> | <b>To ensure the holistic development of learners.</b> | <b>Students will be able to develop social skills, intellectual skills, moral values, and character appeal in students.</b>   |
| <b>Second -Semester</b> |   |  |   |
| 10                      | <b>Major- Commercial Law</b>                  |  | <p>The Student will be able to understand Various legal provisions related to Contract Act</p> <p>The students will be able to understand the</p>   |

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|    |                                 |  | <p>provision for special contracts.</p> <p>The students will be able to identify the legal provision of formations and management of the company</p> <p>The students will be able to understand and identify the rights of consumers and the redressal mechanism</p> <p>The students will be able to outline the scope of IT Act in business</p>   |
| 11 | Minor- Introduction to Commerce |  | <p><b>The students will be able to understand various verticals in commerce education.</b></p> <p><b>The students will be able to compare various career opportunities in Commerce.</b></p> <p><b>The students will be able to map various profiles to his/her individual interests</b></p> <p><b>The students will be able to choose suitable major, minor and other courses of study.</b></p>  |
| 12 | OE 1- Elements of Statistics    |  | <p><b>The students will be able to create different types of tables for data presentation and will also be identify different types of data series.</b></p> <p><b>The students will be able to compute measure of central tendency.</b></p> <p><b>The students will be able to compute various measures of dispersion using quartiles, standard deviation, coefficient of variation etc</b></p> <p><b>The students will be able to determine the skewness and tailedness of a data series.</b></p> |

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| 13 | <b>OE 2- E-Commerce and M-Commerce</b> |  | <p>The students will be able to explain various business models of E-Commerce</p> <p>The students will be able to describe E-Commerce Sales Product Life Cycle (ESLC) Model</p> <p>The students will be able to understand various facets of Consumer Oriented E Commerce</p> <p>The students will be able to grasp the knowledge about electronic payment models.</p>   |
| 14 | <b>VSC- Office Management</b>          |  | <p><b>The student will understand the concept and importance of office management.</b></p> <p><b>The student will be able Create mails and letter for internal and external communication.</b></p> <p><b>The student will be able to Prepare a policy and manuals for office.</b></p> <p><b>The student will be able to prepare document for office meetings.</b></p>  |
| 15 | <b>SEC- Mutual Fund Agent</b>          |  | <p><b>Conduct research on mutual funds.</b></p> <p><b>Keep up to date on the mutual fund market.</b></p> <p><b>Approach and market various mutual funds schemes to prospective customer identified Assist customer with determining most suitable mutual fund scheme according to needs Receive approval for initiating purchase process Assist customer with the application process for purchasing the mutual fund Collect and ensure payments are processed at the bank/organization Deliver proof of purchase and plan follow-up sessions Develop long-term relationships with customers Respond</b></p> |

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|    |              |   | to customer queries and clarifications and advise the customers on existing product and new schemes Assist in termination of investment   |
| 16 | AEC- Marathi | <p>* मराठी भाषेच्या समृद्धीची जाणीव करून देणे.</p> <p>* विद्यार्थ्यांमध्ये भाषा कौशल्याचा विकास करणे आणि त्यातून रोजगाराच्या संधीचा शोध घेणे आणि प्राप्त करणे.</p> <p>भाषेचा जीवन व्यवहारात योग्य पद्धतीने वापर करण्याचा प्रयत्न करणे.</p> <p>प्राचीन, अर्वाचीन साहित्याच्या आकलन, आस्वाद व चिकित्सेतून विद्यार्थ्यांची मानवी संवेदनशीलता, चारित्र्यसंपन्नता, मूल्याधिष्ठितता जागृत करणे आणि त्यांच्यात सामाजिक सेवेची व राष्ट्रप्रेमाची जाणीव जागृती निर्माण करणे.</p> <p>संत साहित्याच्या शिकवणुकीतून मानवता आणि मानवी व्यवहाराची सांगड घालणे आणि विद्यार्थ्यांत नैतिक मूल्य रूजविणे,</p> | <p>अभ्यासक्रमाचा परिणाम</p> <p>(Course Outcomes)</p> <p>* मराठी भाषा, साहित्य व संस्कृतीचे ऐतिहासिक मूल्याचे आकलन होणे,</p> <p>नैतिक मूल्याचे, सामाजिक व राष्ट्रीय उत्तरदायित्वाचे सजग भाग असणारा नागरिक निर्माण होणे.</p> <p>* मराठी भाषेचे संवर्धन आणि संरक्षण होण्यास मदत होणे.</p> <p>व्यावसायिक कौशल्याची प्रेरक बाट गवसणे,</p> <p>व्यावसायिक कौशल्य विकसित होणे, त्यातून समाजाभिमुख कार्य करणे.</p> <p>स्वतंत्र लेखनशैली विकसित होणे.</p> <p>मराठी भाषेवर प्रभुत्व निर्माण होऊन वस्तुव्यती विकसित होणे,</p> |

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|                       |   | <p>व्यावहारिक मराठीच्या माध्यमातून व्यावहारिक ज्ञानकौशल्य विकसित करणे.</p> <p>रोजगाराभिमुख मराठीच्या माध्यमातून विद्यार्थ्यांना रोजगाराभिमुख बनविणे</p> |  |
| 17                    | <b>VEC- Constitution of India</b>             |   | <p>Understanding the historical background of the Constitution-making process and its importance for building a democratic India.</p> <p>Explaining the functioning of the three wings of the government: executive, legislative, and judiciary.</p> <p>Recognizing the value of fundamental rights and duties for becoming a good citizen of India.</p> <p>Analyzing the decentralization of power between central, state, and local self-government.</p> <p>Applying knowledge to strengthen constitutional institutions like CAG, Election Commission, and UPSC for sustaining democracy.</p> |
| 18                    | <b>CC- NSS/NCC/Sports/Cultural Activities</b> | <b>To ensure the holistic development of learners.</b>  | <b>Students will be able to develop social skills, intellectual skills, moral values, and character appeal in students.</b>  |
| <b>Third-Semester</b> |   |   |  |
| 19                    | <b>English</b>                                |   | <b>1. Students acquired the skill of comprehending the English language by engaging</b>  |

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|    |         |  | <p>with recommended poems and prose.</p> <p>2. Students demonstrated the ability to read and understand moderately intricate English texts.</p> <p>3. Proficiency, with respect to English speaking, conversing, delivering speeches, narrating, and describing, has been cultivated among the students.</p> <p>4. Students are equipped to convey proficiently their emotions and thoughts, both verbally and in written English.</p> <p>5. Students are able to compose diverse letters and reports.</p> |
| 20 | Marathi |  | <p>By the end of this course, the students will be able to:</p> <ul style="list-style-type: none"> <li>• मातृभाषेची आवड व जाणीव निर्माण करणे</li> <li>• प्राचिन मराठीचे वैशिष्ट्ये स्पष्ट करणे.</li> <li>• विनोदी लेखनात खेळकरवृत्तीचे दर्शन ाडविणे.</li> <li>• संत साहित्यातून सामाजिक, सांस्कृतीक, आध्यात्मिक लोकशाहीचा पुरस्कार करणे.</li> <li>• स्त्री विषयक जाणिव जागृती करणे.</li> <li>• वृत्त लेखन व कल्पना विस्तार तंत्राची माहिती</li> <li>• अवगत करणे</li> </ul>                                 |

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| 21 | Financial Accounting -I |  | <p>CO1 Student will be able to gain knowledge about consignment, will be able to differentiate between consignment and sale and will be able to calculate Del-credere commission, Account sales and valuation of closing stock.</p> <p>CO2 Student will be able be aware of Hire Purchase system and installment system and Hire Purchase system</p> <p>CO3 Student will be able prepare identify different types of shares, will be familiarize with the procedure of issue of shares .</p> <p>CO4 student will be familiarize with Statutory provisions regarding preparation of companies final accounts</p> <p>CO5 student will be to prepare final accounts as per The Companies Act, 2013</p> |
| 22 | Company Law             |  | <p>CO1 The students will be able to get familiarise with the types and characteristics of company</p> <p>CO2 The student will be able to demonstrate the procedure of formation of company and will be able to distinguish between Article of Association and Memorandum of Association</p> <p>CO3 The students will be able to frame the prospectus of the company.</p> <p>CO4 The students will be able to identify different types of shares and debentures</p> <p>CO5 The students will be able to gain knowledge of management and administration of the company.</p>  |

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| 23                      | Holistic Development |  | <p>CO1 The students will be able to get familiarise with concept of holistic development</p> <p>CO2 The student will be able to manage their time effectively.</p> <p>CO3 The students will be able to identify causes of stress and will be helped in managing them.</p> <p>CO4 The student will be able to demonstrate the concept of spirituality and will be able analyses the relations between spirituality and health.</p> <p>CO5 The student will be able to improve their academic and overall performance in a holistic way</p>                                    |
| 24                      | Monetary Economics-I |  | <p>CO1 The students will be able to demonstrate nature and functions of money and will get familiarise with the methods of note issue. CO2 The students will get familiarise with the concept of Inflation and deflation and will able to identify their role.</p> <p>CO3 The students will be able to identify role of monetary policy and Fiscal policy.</p> <p>CO4 The students will get knowledge about public finance, and will also identify the types of taxation</p> <p>CO5 The students will gain knowledge about recent trends money market and public financé</p> |
| <b>Fourth -Semester</b> |                      |  |  |
| 25                      | English              |  | <p>3. Students are equipped with competence in utilizing information and communication technology (ICT) and social media in a productive manner.</p> <p>4. Students developed logical reasoning skills and aptitude for forming personal opinions and making decisions across various subjects.</p> <p>5. The ideas and activities delineated in the prescribed</p>  |

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|    |                          |  | texts fostered creativity and innovation among students.   |
| 26 | Marathi                  |  | <ul style="list-style-type: none"> <li>· मातृभाषेची आवड व जाणीव निर्माण करणे</li> <li>· प्राचिन मराठीचे वैशिष्ट्ये स्पष्ट करणे,</li> <li>· विनोदी लेखनात खेळकरवृत्तीचे दर्शन ाडविणे</li> <li>· संत साहित्यातून सामाजिक, सांस्कृतिक,</li> <li>· आध्यात्मिक लोकशाहीचा पुरस्कार करणे,</li> <li>· स्त्री विषयक जाणिव जागृती करणे,</li> </ul> <p>वृत्त लेखन व कल्पना विस्तार तंत्राची माहिती अवगत करणे</p>  |
| 27 | Financial Accounting-III |  | <p><b>CO1</b></p> <p>Student would be able to gain knowledge about functioning of bank, and will be able to prepare Annual accounts as per Banking Companies Regulation Act 1949.</p> <p><b>CO2</b></p> <p>Student would be able to identify the types of General insurance and terms like unexpired Risk, and will be able to the prepare Final accounts as per IRDA Regulation 2002.</p> <p><b>C03</b></p> <p>Student will be able to recognize the factors influencing the valuation of Goodwill and will be able to calculate it</p> |

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|    |   |  | <p>by different method.</p> <p><b>CO4</b></p> <p><b>Student will be able to gain knowledge about Process of Liquidation of Company, and will be able to prepare Liquidators Final Statement.</b></p> <p><b>CO5</b></p> <p><b>Students will be able to evaluate the financial statements of Banking and General Insurance companies.</b></p>   |
| 28 | <b>Banking Procedure &amp; Practice</b> |  | <p><b>CO1 The students will be able to get familiarise with types of banks and will get knowledge about its influence on economic development</b></p> <p><b>CO2 The students will be able to demonstrate with types of account and will get knowledge about opening of these account</b></p> <p><b>CO3 The student will relate with the concept of mobile banking</b></p> <p><b>CO4 The students will be able to understand types of cheques and cards and will able to use them.</b></p> <p><b>CO5 The student will be able to identify and avoid frauds in using mobile banking</b></p> |
| 29 | <b>Secretarial Practice</b>             |  | <p>CO1 The students will be able to demonstrate the rights and duties of company secretary</p> <p>CO2 The student will be able to gain knowledge about The companies Act.</p> <p>CO3 The students will be able to state powers of SEBI</p> <p>CO4 The student will be able to develop the knowledge about the appointment and removal of company auditor.</p> <p>CO5 The student will be aware about the</p>  |

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|    |                                 |  | procedure of winding up of the companies.  |
| 30 | <b>Monetary Economics-II</b>    |  | <p>CO1 The students will be able to get knowledge of commercial banks and identify causes of Non-performing Assets</p> <p>CO2 The students will be able to demonstrate Core banking and will be able to differentiate between different types of Cards.</p> <p>CO3 The students will be able to identify role of monetary policy and Fiscal policy.</p> <p>CO4 The students will get knowledge about bank and customer relationship and will be able to open any type of account in banks.</p> <p>CO5 The students will get familiarise with work of central bank and will able to calculate different ratios of credit control.</p> |
|    | <b>Fifth-Semester</b>           |  |  |
| 31 | <b>Financial Accounting-III</b> |  | <p><b>C01</b></p> <p><b>Student will be able to gain knowledge Amalgamation of Company, will be able to computation of purchase consideration and accounting Procedure of Amalgamation and Absorption.</b></p> <p><b>C02</b></p> <p><b>Student will be able to gain knowledge Reconstruction of Company, will be able to accounting Procedure of Reconstruction and Reorganization</b></p> <p><b>C03</b></p> <p><b>Student will be familiarized with Statutory provisions regarding preparation of Account of public Utility companies final accounts</b></p>  |

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|    |                        |  | <p><b>C04</b></p> <p><b>Student will be able prepare identify different types of shares, will be familiarize with the valuation of shares by different method.</b></p> <p><b>C05</b></p> <p><b>Student will be able to gain knowledge as per Indian Company Act,2013 and Preparation of Indian Company and Public Utility Companies.</b></p>  |
| 32 | <b>Cost Accounting</b> |  | <p>C01</p> <p>Student will be able to gain knowledge Meaning, importance, element and overhead allocation of cost of production.</p> <p>C02</p> <p>Student will be able to gain knowledge difference of cost account and financial account, will familiarized with the Preparation cost sheet and Tender.</p> <p>C03</p> <p>Student will be able finding the profit difference between Cost account and financial account, will be familiarize with the need of reconciliation of profit.</p> <p>C04</p> <p>Student will be able to gain knowledge Methods of costing, Job and Process costing.</p> <p>C05</p> <p>Student will be able to gain knowledge Meaning, Features, element and how to computed contract costing.</p> |

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| 33 | <b>Human Resource Management</b> |  | <p><b>C01</b></p> <p>The students will be able to Understand the concept of human resource management.</p> <p><b>C02</b></p> <p>The students will be able to critically analyse recruitment process.</p> <p><b>C03</b></p> <p>The students will be able to understand the labour welfare and collective bargaining process in the organization.</p> <p><b>C04</b></p> <p>Students will gain knowledge about talent management in the organization.</p> <p><b>C05</b></p> <p>The students will be able to know the latest trends in H.R.M.</p> |
| 34 | <b>Agricultural Economics</b>    |  | <p><b>C01</b></p> <p>Students will be able to understand the importance of agriculture in economic development.</p> <p><b>C02</b></p> <p>Students will be able to apply principles of farm management/agricultural production economics benefitting farm decision making.</p> <p><b>C03</b></p> <p>Students will be able to examine various policies (credit, input, pricing, food security, marketing, trade) pertaining</p>   |

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|    |                          |  | <p>to Indian agricultural sector</p> <p><b>C04</b></p> <p>Students will be able to enhance the awareness on contemporary debates of problems of agriculture sector.</p> <p><b>CO5</b></p> <p>Students will understand the concept of agricultural marketing.</p>   |
| 35 | Company Audit            |  | <p><b>C01</b></p> <p>Students will be able to learn about the concept of auditing.</p> <p><b>C02</b></p> <p>Students will able to understand the procedure of audit for limited companies.</p> <p><b>C03</b></p> <p>Students will able to learn about vouching, verification &amp; valuation of assets and liabilities.</p> <p><b>C04</b></p> <p>Students will able to critically analyse the uses of computer in audit.</p> <p><b>CO5</b></p> <p>Students will know the recent development in auditing system</p> |
| 36 | Tax Procedure & Practice |  | <p>The students will able to Understand types of Direct Taxes.</p> <p>The students will understand various types of ITR to be filed by Individual.</p>   |

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|           |                                |  | <p>The students will critically analyse difference between old and new tax regime.</p> <p>The students will able understand technical concept i.e. PAN, TAN, TDS, Tax Refund etc.</p> <p>The students will able to compute income from Business.</p>   |
|           | <b>Sixth- Semester</b>         |  |  |
| <b>37</b> | <b>Financial Accounting-IV</b> |  | <p><b>C01</b></p> <p><b>The student will be able to acquire the knowledge of the holding company, and will be able to prepare a consolidated balance sheet.</b></p> <p><b>C02</b></p> <p><b>Students will get information about how documents have to be submitted to the insurance company to get a claim after a warehouse fire.</b></p> <p><b>C03</b></p> <p><b>Students will get information about buying, selling, profit and loss in securities investment, their original cost, interest calculation.</b></p> <p><b>C04</b></p> <p><b>Students will get information about how pre and post incorporation profit of a newly formed company is calculated.</b></p> <p><b>CO5 Students will get complete information about how accounting is done as per the newly amended Companies Act 2013.</b></p> |

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| 38 | <b>Managerial Accounting</b> |  | <p><b>C01</b></p> <p><b>Student will gain knowledge about the meaning, scope, importance and role of managerial accounting.</b></p> <p><b>CO2</b></p> <p><b>Student will get knowledge about how business decisions are made based on no profit no loss</b></p> <p><b>C03</b></p> <p><b>The student will be able to prepare a budget while making decisions about future cash.</b></p> <p><b>C04</b></p> <p><b>The students will become familiar with how management uses ratios to make decisions.</b></p> <p><b>CO5</b></p> <p><b>Students will get information about how working capital and fund flow are derived in business and will be able to calculate it.</b></p> |
| 39 | <b>Advanced Statistics</b>   |  | <p><b>The student will be able to acquire the knowledge of the correlation, and will be able to computation of correlation.</b></p> <p><b>The student will be able to acquire the knowledge of the regression, and will be able to computation of regression.</b></p> <p><b>The student will gain knowledge about index number and their types, and be able to calculate index number.</b></p> <p><b>The student will gain knowledge about time series and their types, and be able</b></p>   |

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|    |                         |  | <p>to calculate time Series.</p> <p>The student will be able to understand the subject of statistics as well as its usefulness and application.</p>  |
| 40 | International Economics |  | <p>Students will be able to understand the importance of International Economics.</p> <p>Students will be able to Understand international trade theories.</p> <p>Students will be able to examine various exchange rate changes (devaluation, revaluation, depreciation, appreciation-over valuation and undervaluation).</p> <p>Students will be able to enhance the Foreign Direct Investment and Portfolio Investment.</p> <p>Students will gain the knowledge of balance of payment of the country.</p> |
| 41 | Marketing Process       |  | <p>C01</p> <p>Students will be able to learn about the concept of marketing.</p> <p>C02</p> <p>Students will be able to learn about the development of new product and distribution of channels</p> <p>C03</p> <p>Students will able to gain knowledge about the various pricing strategies for the product</p> <p>C04</p> <p>Students will able to understand the use</p>   |

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|    |                             |  | <p><b>of artificial intelligence in marketing.</b></p> <p><b>CO5</b></p> <p><b>Students will know the recent trends and development in marketing.</b></p>   |
| 42 | <b>Financial Management</b> |  | <p>C01</p> <p>The students will be able to understand the fundamentals of financial management.</p> <p>C02</p> <p>The students will understand different sources of finance to raise funds for business.</p> <p>C03</p> <p>The students will critically analyse the optimal working capital required for business</p> <p>C04</p> <p>The students will able to create skills in debtors' and creditors' management.</p> <p>C05</p> <p>The students will be able to compare dividend and retention policies for businesses.</p> |

## Programme Outcomes

### Course Outcomes

#### Faculty of Science

(Physics, Chemistry, Mathematics, Zoology, Botany)

Academic session-2024-2025

#### Programme Outcomes:

On completion of the Course:

- Students will be able to achieve what they want with tenacity and ambition.
- Bachelor of Science offers theoretical as well as practical knowledge about different subject areas.
- This course forms the basis of science for coherent understanding of the academic field to pursue multi and interdisciplinary science careers in future. These subject areas include Physics, Chemistry, Mathematics and Botany and Zoology.
- Able to plan and execute experiments or investigations, analyze and interpret data information collected using appropriate methods.
- It helps to develop scientific temper and thus can prove to be more beneficial for the society as the scientific developments can make a nation or society to grow at a rapid pace through research.
- Think critically; follow innovations and developments in science and technology.
- Students will be able to achieve what they want with tenacity and ambition.

| Sr. No.                | Subject     | Paper | Course Outcomes  |
|------------------------|-------------|-------|--|
| <b>First- Semester</b> |             |       |  |
| 1                      | AEC-English |       | The student will be able :<br><br>1. To understand the text through insights given on compassion and freedom.<br><br>2. To comprehend the values system as a Human Beings while discharging one's duties.<br><br>3. To summarize the given text. |

2

Chemistry

DSC-1  
Inorganic  
Chemistry-I  
BCH1T01

1. Understand and explain the different nature and behavior of organic compounds based on fundamental concepts learnt.
2. Formulate the mechanism of organic reactions by recalling and correlating the fundamental properties of the reactants involved.
3. Learn and identify many organic reaction mechanisms including Free Radical Substitution, Electrophilic Addition and Electrophilic Aromatic Substitution.
4. Understand the fundamental concepts of stereochemistry.
5. Elaborate various properties of aliphatic and aromatic hydrocarbons.
6. Experimentally identify extra elements and functional groups in the given organic compound.
7. Synthesize various organic compounds making use of selective reagents

DSC-2  
Organic Chemistry-II  
BCH1T02

1. Solve the conceptual questions using the knowledge gained by studying the quantum mechanical model of the atom, quantum numbers, electronic configuration, radial and angular distribution curves, shapes of s, p, and d orbitals, and periodicity in atomic properties.
2. Draw the plausible structures and geometries of molecules using VSEPR theory.
3. Explain geometries and properties of molecules based on VBT.
4. Understand the concept of lattice energy using Born-Haber Cycle.
5. Rationalize the metallic properties based on various theories.
6. Elaborate structures and properties of common compounds formed by main group elements.
7. Identify acidic and basic radicals in simple inorganic salts.

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| <p>OE-I<br/>Food Adulteration<br/>BGO1T01</p>    | <ol style="list-style-type: none"> <li>1. Understand the adulteration of common foods and their adverse impact on health.</li> <li>2. Comprehend certain basic skills of detecting adulteration in common foods.</li> <li>3. The students are able to understand the role and importance of food additives.</li> <li>4. Apply their knowledge of food safety and regulations.</li> <li>5. Prevent food adulteration in day-to-day life.</li> </ol>   |
| <p>OE-II<br/>Cosmetic Chemistry<br/>BGO1T02</p>  | <ol style="list-style-type: none"> <li>1. Understand the basic principles of cosmetic chemistry.</li> <li>2. Identify and describe the function of various cosmetic ingredients.</li> <li>3. Formulate and evaluate different types of cosmetic products.</li> <li>4. Apply knowledge of skin and hair biology to cosmetic product development.</li> <li>5. Understand the regulatory and safety considerations in the cosmetic industry.</li> </ol>   |
| <p>VEC<br/>Environmental Science<br/>BVE1T01</p> | <ol style="list-style-type: none"> <li>1. Explain the basics of Environmental Science and Atmospheric Science along-with the components of Environment</li> <li>2. Explicate the importance of Environmental Education.</li> <li>3. Elucidate the fundamentals of atmospheric science including formation, depletion and effects of ozone layer and acid rain on the environment.</li> <li>4. Describe the various physical and chemical characteristics and properties of Water and Soil</li> <li>5. Understand the Ecology and its allied branches</li> <li>6. Comprehend about Population and Community Ecology</li> <li>7. Study the changes in Population by understanding the concept of Population ecology</li> </ol> |
| <p><b>Chemistry</b></p>                          | <p><b>103 Verify theoretical principles experimentally</b></p>   |

|   |                | <b>Practical Course</b>   | <p style="text-align: center;"><b>Interpret the experimental data</b></p> <p style="text-align: center;"><b>Improve analytical skills</b></p> <p style="text-align: center;"><b>Correlate the theory and experiments and understand their importance</b></p>   |
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| 3 | <b>Physics</b> | <p><b>(DSC-1)</b><br/> <b>(BPH1T01)</b><br/> <b>(Measurements, Mechanics, and Properties of Matter)</b></p> | <p>After this course the students will be able to</p> <ol style="list-style-type: none"> <li>1. Develop interest in measurement with conceptual knowledge of physics.</li> <li>2. Develop practical skills in accurate measurements with minimal errors.</li> <li>3. Understand and practice these skills while performing physics practical.</li> <li>4. Understand the use of apparatus and their use without fear.</li> <li>5. Correlate their physics theory concepts with practical outcomes. 6. Understand the concepts of errors and their estimation.</li> </ol>   |
|   |                | <p><b>(DSC-2)</b><br/> <b>(BPH1T02)</b><br/> <b>(Kinetic theory of gases and Thermodynamics)</b></p>        | <p>After this course the students will be able to</p> <ol style="list-style-type: none"> <li>1. Understand the assumptions of kinetic theory of gases, ideal and real gases.</li> <li>2. Understand the nature of calorimetry by specific heat of solids and gases.</li> <li>3. Analyses different transport phenomena in gases</li> <li>4. Describe basic concepts of Thermodynamics.</li> <li>5. Analyses the laws of thermodynamics in different cases and entropy.</li> <li>6. Restate definition of system, surrounding, closed and open system, extensive and intensive variables and properties.</li> <li>7. Design various types of basic heat engines.</li> <li>8. Apply Maxwells thermodynamic relations.</li> </ol> |

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|   |                   |   | 9. Understanding the low temperature physics   |
|   |                   | <b>(GE/OE-1)<br/>(BGO1T01) (Space Science)</b>                                | <p>After the completion of this course students will be able to</p> <ol style="list-style-type: none"> <li>1. Get acquainted with the space related events</li> <li>2. Get knowledge about solar system and planets</li> <li>3. Determine the average distance and sizes of heavenly bodies</li> <li>4. Understand the concept of black hole and other giants</li> <li>5. Know the measurement related to large distance</li> <li>6. Understand the communication time requirement for longer distances</li> </ol> |
|   |                   | <b>(VSC - 1) Course Code (BVS1P01) (Electronic and Electrical Components)</b> | <p>After the completion of this course students will be able to</p> <ol style="list-style-type: none"> <li>1. Get acquainted hands-on practice for electronic components and their uses in electronic circuits.</li> <li>2. Apply the practical knowledge in conducting various practical during graduation.</li> <li>3. Apply the practical knowledge in repairing household electronic and electrical gadgets.</li> </ol>  |
|   |                   | Physics Practical   | <p>103.1- Apply and demonstrate the theoretical concepts of Physics and to develop scientific attitude.</p> <p>103.2- Interpret the experimental data</p>  |
| 4 | <b>Mathematic</b> | <b>DSC-I</b>  | Students will be able to update their basics of Set  |

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| <b>Algebra and Trigonometry</b>            | Theory, Matrices, Theory of equations and Complex variables and its applied aspects.   |
|  | Elementary Skills: Students will be able to understand the importance of hyperbolic functions and their relationships with trigonometric functions.    |
|  | The main outcome of the course is to equip students with necessary basic analytic skills for problem solving.  |
|  | By applying the principles of basic tools through the course curriculum, students can solve a variety of practical problems in science and engineering |
| <b>PRACTICAL: Algebra and Trigonometry</b> | Students will be able to learn implications of equivalence relations in determining equivalence classes.   |
|  | Students will understand properties of divisibility through problem solving.   |
|  | Students will be able to perform different operations on the given congruence.   |
|  | Solution of linear congruence will be studied by students.   |
|  | Students will be able to perform matrix operations to determine invertible matrices, row canonical and normal form of the matrices.                    |
|  | Students will be able to apply matrix operations to solve system of linear equations.  |
|  | Students will be able to find roots of a cubic and biquadratic equation.   |
|  | Students will be able to apply De Moivre's theorem to find n roots of a complex number find.   |
| <b>DSC-II Differential Calculus</b>        | Students will be able to update their basic knowledge of Maxima and Minima of functions of single variables and their application.                     |
|  | Students will undergo problem solving training by learning Indeterminate forms, and L' Hospital's Rule and their applicability.                        |

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|   | <p>Students will be able to learn new concept of functions of two variables, Taylor series, and maxima and minima of such functions.</p>   |
|   | <p>The problem-solving skills will bring forth the importance of Jacobian in understanding the existence of inverse transformation and other aspects of independence of pair of functions.</p> |
|   | <p>By applying the principles of basic tools through the course curriculum, students can solve a variety of practical problems in science and engineering.</p>                                 |
| <b>PRACTICAL:<br/>Differential<br/>Calculus</b> | <p>Students will be able to make out the maximum or minimum nature of the functions by applying different conditions on the functions.</p>   |
|   | <p>Working on Geometric interpretation of Mean value theorems through graphs of a function will make students grasp the subject admirably.</p>   |
|   | <p>Students will learn application of Leibnitz, Maclaurin's and Taylor's theorems.</p>   |
|   | <p>Students will be able to apply L' Hospital's Rule to solve the problems</p>   |
|   | <p>Solving problems when functions involved are homogeneous</p>  |
|   | <p>Students will able to solve Jacobians and learn properties due to Jacobian.</p>   |
|   | <p>Analyzing Maxima and Minima of functions of two variables</p>   |
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| <b>SAGE MATH<br/>SOFTWARE<br/>SYSTEM</b>        | <p>Students will be able<br/>to explore topics in Calculus, Applied Linear Algebra and Numerical Method along with several applications</p>  |
|   | <p>to learn an alternative software as against the commercial products Magna, Maple, Mathematica and</p>   |

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|   |         |   | MATLAB  |
|   |         |   | to learn the most recent algorithms and tools for many domains of mathematics   |
|   |         |   | to use as wonderful scientific and graphical calculator.  |
|   |         | <b>SEC<br/>Aptitude and<br/>Reasoning</b>   | On successful completion of the course the students will be able to:<br>Understand the basic concepts of quantitative ability   |
|   |         |   | Understand the basic concepts of logical reasoning Skills   |
|   |         |   | Acquire satisfactory competency in use of reasoning   |
|   |         |   | Solve campus placements aptitude papers covering Quantitative Ability, Logical  |
|   |         |   | Reasoning Ability   |
|   |         | <b>Indian Knowledge<br/>System (IKS)</b>  | This course will be enable the students to Improve speed and accuracy in numerical calculations   |
|   |         | <b>SEM 1: VEDIC<br/>MATHEMATICS</b>   | Acquire IQ skill and High-end technical knowledge   |
|   |         |   | Gain test taking skills and creativity of calculations  |
|   |         | <b>OE-2: BASIC<br/>STATISTICS</b>   | To discuss the interpretations of Statistics in numerical data.   |
|   |         |   | To give overview of Statistics in various sectors & disciplines   |
|   |         |   | To apply & use of Statistics Methods in various diverse fields  |
| 5 | Zoology | <b>DSC I<br/><br/>Life and<br/>Diversity of<br/>Animals – Non-<br/>chordates<br/>(Protozoa to<br/>Annelida)<br/>(BZO1T01)</b> | Students will be able to understand about early phyla viz., Protozoa, Porifera, Coelenterata, Platyhelminthes, Aschelminthes and Annelida.  |
|   |         |   | Students will be able to identify, classify and analyze different animals belonging to phylum Protozoa to Annelida on the basis of levels or grades of organization, symmetry, coelom etc. up to class. |
|   |         |   | Students will learn, analyze, describe a representative animal belonging to phylum Protozoa to Annelida   |

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|  |  | Students could elucidate and explain uniqueness of phylum Protozoa to Annelida and they could able to demonstrate peculiar tissues, organs of animals belonging to these phyla.   |
|  | <p><b>Practical</b></p> <p><b>Life and Diversity of Animals – Non-chordates (Protozoa to Annelida)</b></p> <p><b>(BZO1P01)</b></p> | <p>Students will be able to-</p> <p>Identify museum specimens.</p> <p>Identify permanent slides.</p> <p>Describe anatomical observation.</p> <p>Perform mounting.</p>   |
|  | <p><b>DSC- II</b></p> <p><b>Environmental Biology</b></p> <p><b>(BZO1T02)</b></p>  | <p>Students will be able to describe and explain the atmosphere, hydrosphere, lithosphere and energy resources.</p>   |
|  |  | Students could describe, elucidate different types and components of ecosystems. They could identify, describe and explain different biotic components and could explain and analyze their role in the ecosystem.   |
|  |  | Students will describe, explain and be aware about the significance and need of biodiversity conservation. They also understand, describe and explain legislations passed to conserve biodiversity and acquainted themselves with nearby National Parks and Wildlife Sanctuaries. |
|  |  | They will elucidate and differentiate causes of different types and hazards of pollution. Students will estimate the different physico-chemical parameters of water to analyze.   |
|  | <p><b>Practical</b></p> <p><b>Environmental Biology</b></p> <p><b>(BZO1P02)</b></p>  | <p>Will be able to perform-</p> <p>Estimation of dissolved oxygen (DO) of water.</p> <p>Estimation of soil organic carbon by Walkley and Black (Rapid Titration) method.</p>  |

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|  |  | <p>Estimation of total hardness of water.</p> <p>To demonstrate the functioning of Simple and Compound Microscope.</p> <p>Estimation of pH of water sample.</p> <p>Estimation of noise frequency by using dB meter.</p> <p>Quantitative analysis of plankton by Sedwick Rafter method.</p> <p>Estimation of free CO<sub>2</sub> of water.</p> <p>Preparation of permanent stained preparation of zooplanktons Collection of photographs and identification of producers, primary consumers, secondary consumers, tertiary consumers, decomposers.</p> <p>Preparation of permanent stained preparation of zooplanktons.</p> <p>Study and collection of different types of zooplanktons.</p> <p>Study nearby forest and to record faunal biodiversity of nearby forest.</p> | <p>Estimation of total hardness of water.</p> <p>To demonstrate the functioning of Simple and Compound Microscope.</p> <p>Estimation of pH of water sample.</p> <p>Estimation of noise frequency by using dB meter.</p> <p>Quantitative analysis of plankton by Sedwick Rafter method.</p> <p>Estimation of free CO<sub>2</sub> of water.</p> <p>Preparation of permanent stained preparation of zooplanktons Collection of photographs and identification of producers, primary consumers, secondary consumers, tertiary consumers, decomposers.</p> <p>Preparation of permanent stained preparation of zooplanktons.</p> <p>Study and collection of different types of zooplanktons.</p> <p>Study nearby forest and to record faunal biodiversity of nearby forest.</p> |
|  |  | <p><b>GE/OE</b></p> <p><b>Reproductive Biology (BGO1T02)</b></p>  | <p>After completion of the course, students will able to-</p> <p>Understand, describe and explain the male reproductive system.</p> <p>Understand, describe and explain the female reproductive system.</p> <p>Understand, describe and explain the menstrual cycle.</p> <p>Understand, describe and explain spermatogenesis, oogenesis and fertilization.</p>  |
|  |  | <p><b>VSC</b></p> <p><b>Vermicomposting (BVS1P01)</b></p>   | <p>After completion of this course, student will –</p> <p>Get acquainted with hand on training of vermicomposting.</p> <p>Get acquainted with hand on training of vermiwash.</p> <p>Able to understand and learn about the vermicompost</p>   |

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|   |                 |  | marketing.<br>Able to do an internship in any commercial vermicompost or vermiwash unit.   |
| 6 | <b>Botany</b>   | <b>DSC I<br/>( BB01T01)<br/>Microorganism -<br/>Viruses,<br/>Prokaryotes,<br/>Algae- Fungi</b> | <ul style="list-style-type: none"> <li>● To understand the nature of viruses, Ultra-structure and economic importance.</li> <li>● Understand the properties of Mycoplasma and its reproduction.</li> <li>● Understand general characteristics and reproduction in bacteria</li> <li>● To understand general characteristics and classification of algae</li> <li>● To understand the to understand general structure of Cyanobacteria and its reproduction</li> <li>● Understand life cycle of <i>Chara</i>, <i>Ectocarpus</i>, and <i>Oedogonium</i>.</li> <li>● To understand the general characteristics and importance of Fungi.</li> <li>● To understand the life cycle of <i>Albugo</i>, <i>Rhizopus</i> and <i>Agaricus</i>.</li> <li>● To understand the general account, types and reproduction in Lichens.</li> <li>● To understand the plant pathology, Pathogen study, control and causes of diseases : leaf curl of papaya, Citrus canker and red rot of sugarcane</li> </ul> |
|   | <b>Paper-II</b> | <b>DSC II ( BBO1T02)<br/>Paleobotany,<br/>Bryophyta and<br/>Pteridophyta</b>                   | <ul style="list-style-type: none"> <li>● Understand classification and general characteristics of Bryophyta.</li> <li>● Life history of <i>Marchantia</i>, <i>Anthoceros</i> and <i>Funaria</i></li> <li>● To make student understand fossils, Pseudofossils, and its importance.</li> <li>● Knowledge about types of fossils.</li> <li>● Details of Geological time scale.</li> <li>● Differentiation among the types of fossil.</li> <li>● Study the general characteristics of Pteridophytes and its classification.</li> </ul>   |

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|                                |   | <ul style="list-style-type: none"> <li>● Life history of <i>Selaginella</i>. And <i>Equisetum</i>.</li> </ul>  |
| <b>Botany Practical Course</b> | <b>DSCI And DSC II</b>  | <ul style="list-style-type: none"> <li>● Study Algal material</li> <li>● Study the fungal genera.</li> <li>● Study morphology and anatomy of pteridophytes (<i>Selaginella, Pteris</i>)</li> <li>● Study the lichens, thallus structure and types of lichens.</li> <li>● Plant pathological study.</li> <li>● Study of bryophytes and identification of its characteristics.</li> <li>● Fossil Study</li> </ul>  |
|                                | <b>VSC ( BVS1P01)</b><br><b>Identification of Higher Plants</b>                 | <ul style="list-style-type: none"> <li>● Describe morphological features of vegetative parts (root, stem, leaf) and their modifications using locally available plants.</li> <li>● Identify and classify types of inflorescence and explain structure and variations of flowers.</li> <li>● Recognize family-specific characteristics, floral whorls (calyx, corolla, androecium, gynoecium) and different types of fruits.</li> <li>● Perform taxonomic description, prepare identification keys, and identify plants using flora, mobile applications, and digital databases.</li> </ul> |
|                                | <b>GE/OE -II</b><br><b>(BGO1T02)</b><br><b>Indoor Gardening and Landscaping</b> | <p>Understand the principles and importance of indoor gardening and landscaping.</p> <p>Identify suitable indoor plants and understand their growth requirements (light, water, soil, temperature, humidity).</p> <p>Develop practical skills in potting, propagation, maintenance, terrarium making, and vertical gardening.</p> <p>Design and prepare basic landscaping plans for indoor and small outdoor spaces.</p> <ul style="list-style-type: none"> <li>● <b>CO5:</b> Apply sustainable and eco-friendly practices in indoor gardening and landscape management.</li> </ul>        |

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|  |  | <p><b>SEC- Soil Analysis and Hydrobiology</b></p> | <p><b>To develop practical skills in soil sampling and preparation</b> for laboratory analysis.</p> <p><b>To perform basic soil analysis techniques</b> such as determination of soil pH, moisture content, texture, and organic matter.</p> <p><b>To analyze essential soil nutrients</b> and understand their role in soil fertility and plant growth.</p> <p><b>To learn methods for collection and preservation of water samples</b> from different aquatic habitats.</p> |

**Second- Semester**

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| 7 | AEC-<br>Marathi | <ol style="list-style-type: none"> <li>1. मराठी भाषेचे मूलभूत ज्ञान प्राप्त करणे.</li> <li>2. मराठी साहित्याचे प्रकार ओळखणे. (कविता, कथा, निबंध, नाटक इ.)</li> <li>3. वाचन कौशल्ये वाढविणे आणि मजकुराचा योग्य अर्थ समजून घेणे.</li> <li>4. लेखन कौशल्ये विकसित करणे. निबंध, पत्रलेखन, अहवाल लेखन इत्यादी.</li> <li>5. व्याकरणाचे नियम समजून घेणे आणि योग्य भाषेचा वापर करणे.</li> <li>6. संवाद कौशल्ये वाढविणे आणि विचार स्पष्टपणे मांडण्याची क्षमता वाढविणे.</li> <li>7. मराठी भाषेचे</li> </ol> | <ol style="list-style-type: none"> <li>1. विद्यार्थ्यांना मराठी भाषेचे मूलभूत ज्ञान प्राप्त होईल.</li> <li>2. मराठी साहित्याचे विविध प्रकार (कविता, कथा, निबंध, नाटक इ.) समजतील.</li> <li>3. विद्यार्थ्यांची वाचन व आकलन क्षमता विकसित होईल.</li> <li>4. विद्यार्थ्यांची लेखन कौशल्ये विकसित विकसित होतील. (निबंध, पत्रलेखन, अहवाल लेखन इत्यादी.)</li> <li>5. मराठी व्याकरणाचे नियम समजून योग्य भाषेचा वापर करता येईल.</li> <li>6. संवाद कौशल्ये विकसित होतील.</li> <li>7. मराठी भाषेच्या सामाजिक व सांस्कृतिक मुल्यांची जाणिव होईल.</li> </ol> |
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|   |           | सामाजिक व सांस्कृतिक महत्व समजून घेणे.     |  |
| 8 | Chemistry | DSC 5<br>Physical Chemistry-II<br>BCH3T05  | <ol style="list-style-type: none"> <li>1. Recollect the meanings of various thermodynamic terminology</li> <li>2. Evaluate the thermodynamic quantities</li> <li>3. Deduce and interpret the phase diagrams of binary and ternary systems</li> <li>4. Analyze and elaborate the conductance properties of electrolytes</li> <li>5. Evaluate the emf values and interpret the results in redox equilibria</li> <li>6. Understand the mechanisms and kinetics of chemical reactions.</li> </ol>          |
|   |           | DSC 6<br>Inorganic Chemistry-II<br>BCH3T06 | <ol style="list-style-type: none"> <li>1. Explain properties of diatomic molecules using MO theory</li> <li>2. Deduce the structures of various inorganic molecules formed by noble gases</li> <li>3. Explain the properties of f-block elements using electronic configuration concept</li> <li>4. Explain various reactions in non-aqueous media</li> <li>5. Discuss properties of compounds using HSAB principle</li> <li>6. Elaborate the geometries of compounds formed by noble gases</li> </ol> |

Minor 1  
Inorganic  
Chemistry-1  
BCH1T01

1. Solve the conceptual questions using the knowledge gained by studying the quantum mechanical model of the atom, quantum numbers, electronic configuration, radial and angular distribution curves, shapes of s, p, and d orbitals, and periodicity in atomic properties.
2. Draw the plausible structures and geometries of molecules using VSEPR theory.
3. Explain geometries and properties of molecules based on VBT.
4. Understand the concept of lattice energy using Born-Haber Cycle.
5. Rationalize the metallic properties based on various theories.
6. Elaborate structures and properties of common compounds formed by main group elements.
7. Identify acidic and basic radicals in simple inorganic salts

Minor 2  
Organic Chemistry-1  
BCH1T02

1. Understand and explain the different nature and behavior of organic compounds based on fundamental concepts learnt.
2. Formulate the mechanism of organic reactions by recalling and correlating the fundamental properties of the reactants involved.
3. Learn and identify many organic reaction mechanisms including Free Radical Substitution, Electrophilic Addition and Electrophilic Aromatic Substitution.
4. Understand the fundamental concepts of stereochemistry.
5. Elaborate various properties of aliphatic and aromatic hydrocarbons.
6. Experimentally identify extra elements and functional groups in the given organic compound.
7. Synthesize various organic compounds making use of selective reagents.

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|   |   | OE<br>Chemistry in everyday life<br>BGO3T05   | <ol style="list-style-type: none"> <li>1. Explain chemicals involved in food products</li> <li>2. Elaborate the structural basis of colour and constitution</li> <li>3. Evaluate the properties of various organic molecules in biosystems</li> <li>4. Understand the impact of toxicants on environment</li> <li>5. Identify and remove toxicants from water and air bodies.</li> </ol>   |
|   | <b>Chemistry</b><br><br><b>Practical course</b> |   | <b>203 Verify theoretical principles experimentally</b><br><br><b>Interpret the experimental data</b><br><br><b>Improve analytical skills</b><br><br><b>Correlate the theory and experiments and understand their importance</b>   |
| 9 | <b>Physics</b>                                  | <b>(DSC-III) - (BPH2T03) (Acoustic and Ultrasonics)</b>                             | <ol style="list-style-type: none"> <li>1. Understand the different aspects and attributes of a musical sounds. Also response of ear to sound and audible limits of human ear</li> <li>2. Learn about various musical scales and musical instruments</li> <li>3. Learn about acoustics of a hall and requirement of a good acoustic of a hall</li> <li>4. Learn about different microphones their design and action and also about loudspeaker.</li> <li>5. Learn about the characteristics and production method as well as detection of USW.</li> <li>6. Learn about different applications of USW like SONAR, soldering, cleaning and medical applications like sonography etc.</li> </ol> |
|   |   | <b>(DSC-4)-PHYSICS - Paper-IV (BPH2T04) (Oscillations and Black body radiation)</b> | <ol style="list-style-type: none"> <li>1. Understand the simple harmonic motion, and properties of different oscillatory motion of an object</li> <li>2. Understand the damped and forced oscillation</li> <li>3. Understand mechanical waves in a medium and wave equation of the transverse waves on string and longitudinal waves in a fluid.</li> <li>4. Understand black body radiation and development of quantized nature of blackbody radiation.</li> <li>5. Understand the temperature of heavenly bodies</li> </ol>  |

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|    |                               | <b>(VSC) - PHYSICS<br/>Course Code<br/>(BVS2P03)<br/>(Instrumental<br/>Errors in<br/>Measurement)</b>          | <ol style="list-style-type: none"> <li>1. Understand the function of different instruments.</li> <li>2. Choose and apply proper instrument for the measurement.</li> <li>3. Handle the instrument carefully and apply the practical knowledge in his further study.</li> <li>4. Find the different man made and instrumental errors in doing different</li> </ol>   |
|    |                               | <b>(SEC - 2) -<br/>PHYSICS<br/>(BVS2P04)<br/>Fundamentals of<br/>Data Analysis and<br/>Data Interpretation</b> | <ol style="list-style-type: none"> <li>1) Collect a big data as per requirements and automatically get it in spreadsheet for further processing.</li> <li>2) Navigate on the spread sheet to edit text and values by inserting and deleting the ranges.</li> <li>3) Use various charts and formatting tables with row and column formatting.</li> <li>4) Use various mathematical functions to explore the necessary interpretations.</li> <li>5) Use various statistical functions to explore the necessary interpretations.</li> <li>6) Perform line / curve fitting for analysis.</li> </ol> |
|    |                               | <b>Indian Knowledge<br/>System (IKS)<br/><br/>SEM2: INDIAN<br/>ASTRONOMY<br/>(BIK2T02)</b>                     | <ol style="list-style-type: none"> <li>1. It is possible to create a map of the intellectual growth of culture using astronomy as a probe.</li> <li>2. The growth of Indian astronomy occurs in distinct stages analogous to phase transitions of the evolution of cultures</li> <li>3. Indian Astronomy therefore provides an excellent window to the past dramatic transitions.</li> </ol>  |
|    | Physics<br>Practical<br>(203) |  | Apply and demonstrate the theoretical concepts of Physics and to develop scientific attitude.   |
| 10 | <b>Mathem<br/>atics</b>       | <b>DSC-3<br/><br/>Integral<br/>Calculus and<br/>ODE</b>  | <p>Students to update their knowledge of improper integrals, Beta and Gamma functions and their applicability.</p> <p>Students will be able to understand the importance of varied methods of solving differential equations of first and second order.</p> <p>The main objective of the course is to equip students with necessary analytic skills due to integrability and solutions of differential equations.</p>   |

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|  |  | By applying the principles of basic tools through the course curriculum, students can solve a variety of practical problems in science and engineering |
|  | <b>DSC-3</b><br><b>Integral</b><br><b>Calculus and</b><br><b>ODE Practical</b> | Students will be able to solve problems using reduction formulae, Beta and Gamma functions.  |
|  |  | Application of double integration in solving problems on area of a region.   |
|  |  | Students will able to solve problems by changing the order of integration  |
|  |  | Students will learn application of triple integration  |
|  |  | Students will be able to apply integrating factor in solving non-exact differential equations  |
|  |  | Students will be able to solve Euler's Equidimensional Eqs   |
|  |  | Students will able to use concept of Wronskian in solving problems by method of variation of parameters  |
|  | <b>DSC-4</b><br><b>Vector Analysis</b>   | To impart foundational knowledge of vector algebra and vector differentiation.   |
|  |  | To inculcate in students foundational base of gradient of a scalar function, divergence and curl.  |
|  |  | New concept of vector integration shall be introduced and problems of work done by force shall be solved.  |
|  |  | To solve variety of practical problems in science and engineering by applying Greens theorem, divergence theorem, Stokes theorem.                      |
|  |  | The course curriculum is so prepared that it has wide  |

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|  |  | application in physics, and in other Science and Engineering subjects.   |
|  | <b>DSC-4</b><br><b>Vector Analysis</b><br><b>Practical</b> | Students will be able to update themselves with foundational knowledge of vector algebra and vector differentiation by solving examples.   |
|  |  | The basic skills required in science will be ingrained in students through foundational base of gradient of a scalar function, divergence and curl by solving examples.            |
|  |  | . New concept of vector integration shall be learnt by students and problems of work done by force shall be solved by them.  |
|  |  | Students will be able to solve variety of practical problems in science and engineering by applying Greens theorem, divergence theorem, Stokes" theorem,                           |
|  |  | The course curriculum is so prepared that it has wide application in physics, and in other Science and Engineering subjects, and this will help students immensely in their future |
|  | <b>VSC- Maxima</b><br><b>Software System</b>               | Students will be able<br>to develop skills to deliver practical knowledge in its application   |
|  |  | to explore topics in Calculus, ordinary differential equations. systems of linear equations, polynomials, sets, lists, vectors, matrices   |
|  |  | to provide algorithms and tools for many domains of mathematics  |
|  |  | to use as wonderful scientific and graphical calculator  |

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| 11 | Zoology | <b>DSC- I</b><br><b>Life and Diversity of Animals – Non-chordates (Arthropoda to Hemichordata)</b><br><b>(BZO1T03)</b>        | Students will learn, identify, explain and analyze the taxonomic position of animals belonging to phylum Arthropoda to Hemichordata.  |
|    |         |   | They could describe, explain and analyze phylogeny to understand the course of evolution in animals from phylum Arthropoda to Hemichordata  |
|    |         |   | They will be able to describe, explain and differentiate various morphological, anatomical structures and functions of animals of phyla from Arthropoda to Hemichordata.  |
|    |         |   | Students will be able to understand , describe, explain and differentiate the larval forms and development of the invertebrates from phylum Arthropoda to Hemichordata.   |
|    |         |   | Students will be able to describe, explain and analyze the ecological and economic importance of invertebrates.   |
|    |         |   | Students will understand, be able to describe, explain and analyze the ecological role of invertebrates in biodiversity.  |
|    |         | <b>Practical DSC</b><br><b>Life and Diversity of Animals – Non-chordates (Arthropoda to Hemichordata)</b><br><b>(BZO1P03)</b> | Students will be able to-<br>Identify museum specimens.<br>Identify permanent slides.<br>Describe anatomical observation.<br>Perform mounting.<br>Collection of photograph of insect vectors.<br>Examination of pond water to identify aquatic Arthropods and Molluscs. |
|    |         | <b>DSC-II</b>   | Students will be able to describe, sketch, analyze, and   |

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|  |  | <p><b>Cell Biology</b><br/><b>(BZO1T04)</b></p>                   | <p>explain the structure and function of the cell organelles.</p> <p>Students could describe, sketch, analyze, and explain the structure and function of nucleus and chromatin structure, its location.</p> <p>Students will be able to describe, sketch, analyze, and explain the basic principle of life. They could also demonstrate and explain how a cell divides leading to the growth of an organism.</p> <p>Students could describe, sketch, analyze, and explain how a cell communicates with its neighbouring cells.</p> <p>Students will be able to describe, sketch, analyze, and explain the abnormality in structural and functional aspects of cells.</p> <p>Students will be able to handle and use microscopes and oculometer to elucidate and measure and explain the minor details of tissues.</p> <p>Students will be able to demonstrate osmosis. They could also demonstrate and explain mitochondria, salivary gland chromosomes and Barr body in cells.</p> |
|  |  | <p><b>Practical</b><br/><b>DSC-II</b><br/><b>Cell Biology</b></p> | <p>Students will be able to-</p> <p>Study of Osmosis in human RBCs (Hypertonic, hypotonic and isotonic).</p> <p>Demonstration of Mitotic cell division in Allium cepa.</p> <p>Demonstration of Salivary gland chromosome in Mosquito/ Chironomous larvae.</p> <p>Demonstration of Barr body in blood smear.</p> <p>Use of Ocular micrometer and measurement of Micro objects.</p> <p>Demonstration of Meiotic cell division in Tradescantia</p>   |

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|  |  | <p>buds or Grasshopper Testis (Virtual/Pictorial).</p> <p>Demonstration of mitochondria in buccal epithelium by Janus green B method.</p>   |
|  | <p><b>GE/OE</b><br/><b>Fish Farming</b><br/><b>(BGO2T04)</b></p>                           | <p>After completion of the course, students will able to-</p> <p>Understand, describe and explain suitable aquaculture fish on specific criteria.</p> <p>Understand, describe and explain construction and management of fish pond.</p> <p>Understand, describe and explain breeding techniques.</p> <p>Comprehend the status of freshwater resources.</p> <p>Evaluate economically important freshwater biological resources for their commercial utilization.</p> <p>Adjudge different types of rearing process and steps along with procedure involved in preparation and management of nursery and rearing pond of fish culture.</p> <p>Understand, describe and explain the marketing of fish.</p> <p>Understand, describe and explain various diseases in fishes.</p> |
|  | <p><b>VSC</b><br/><b>Culture of Indian</b><br/><b>Major Carps</b><br/><b>(BVS1P03)</b></p> | <p>After completion of this course, student will–</p> <p>Able to sketch, describe, Identify and classify the Indian major carps.</p> <p>Design the layout of the various types of ponds for the rearing of various stages of IMC.</p> <p>Get acquainted with hands-on training of various breeding techniques.</p> <p>Get acquainted with hands-on training of rearing fry to fingerlings.</p> <p>Able to understand the different types of crafts and gears used in fish harvesting (Catching).</p> <p>Get hands-on training of handling various gear, crafts</p>  |

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|    |               |  | used in fish harvesting (Catching).<br>Able to do internship and work in any commercial breeding centre .  |
| 12 | <b>Botany</b> | <b>DSC- III</b><br><b>Spermatophyte -</b><br><b>Gymnosperms</b><br><b>and</b><br><b>Angiosperms</b><br><b>Morphology</b> | <ul style="list-style-type: none"> <li>● Classify the Gymnosperms, its characteristics and economic importance.</li> <li>● Understand the fossil gymnosperm.</li> <li>● Study the life cycle of <i>Cycas</i> and <i>Pinus</i></li> <li>● Explain different types of roots (tap and adventitious) and their modifications for storage and respiration.</li> <li>● Describe stem branching (monopodial and sympodial) and stem modifications (runner, sucker, rhizome, tuber, bulb).</li> <li>● Identify leaf types (simple and compound), phyllotaxy, venation patterns, and leaf modifications (tendrils and phyllodes).</li> <li>● Classify inflorescence types (racemose, cymose, and special types) and describe the structure of a typical flower including floral whorls and thalamus variations (androphore, gynophore, gynandrophore).</li> <li>● Explain floral whorls (calyx, corolla, androecium, gynoecium), their cohesion, adhesion, aestivation, placentation, and classify different types of fruits (simple, aggregate, composite).</li> </ul> |
|    | <b>Botany</b> | <b>DSC - IV</b><br><b>( BBO2T04)</b><br><b>Cell Biology and</b><br><b>Genetics</b>                                       | <ul style="list-style-type: none"> <li>● Explain the definition of cell, describe Schleiden and Schwann's Cell Theory, and compare prokaryotic and eukaryotic cells.</li> <li>● Describe the ultra-structure and functions of plant cell organelles including cell wall, cell membrane (Fluid Mosaic Model), ER, Golgi complex, ribosomes, mitochondria, chloroplast, lysosome, peroxisomes, glyoxysomes and vacuole.</li> <li>● Explain nuclear structure, chromosome morphology, karyotype, idiogram, nucleosome</li> </ul>  |

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|                                |  | <p>model, and sex chromosomes in plants; and describe the cell cycle.</p> <ul style="list-style-type: none"> <li>● Describe mitosis and meiosis in plants and explain their significance.</li> <li>● Apply principles of Mendelism to solve monohybrid and dihybrid crosses and explain the Laws of Inheritance (Law of Segregation and Law of Independent Assortment).</li> </ul>   |
| <b>OE-2</b>                    | <b>Hydroponics and Plant Growth Regulators</b> | <p><b>To introduce the concept and principles of Hydroponics</b>, including soilless cultivation techniques and their advantages in modern agriculture.</p> <p><b>To understand different hydroponic systems</b> such as nutrient film technique (NFT), deep water culture (DWC), wick system, and drip systems used for plant production.</p> <p><b>To study the role of plant nutrients and nutrient solutions</b> in hydroponic crop cultivation and their management for optimal plant growth.</p> <p><b>To explain the concept of Plant Growth Regulators (PGRs)</b> and their physiological effects on plant growth and development.</p> |
| <b>Botany Practical course</b> | <b>DSC III and IV</b>                          | <ul style="list-style-type: none"> <li>● Study of different root and stem modification and branching patterns.</li> <li>● Study the types of leaf and its phyllotaxy, venation and modification.</li> <li>● Understand the flower structure and position of calyx, corolla, androecium and gynoecium.</li> <li>● Identify and describe various cell organelles using photographs and prepared slides.</li> <li>● Observe and explain stages of mitosis in suitable plant materials.</li> </ul>   |

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|  | VSC | <p style="text-align: center;"><b>Horticulture</b></p> | <ul style="list-style-type: none"> <li>● Observe and explain stages of meiosis in suitable plant materials.</li> <li>● Solve numerical problems based on monohybrid and dihybrid ratios.</li> <li>● Apply Chi-square test to verify Mendel’s Law of Segregation using coloured beads.</li> <li>● Apply Chi-square test to verify Mendel’s Law of Independent Assortment using coloured beads.</li> <li>● Study and identify morphology of eukaryotic chromosomes.</li> <li>● Demonstrate monohybrid cross using pea</li> <li>● Student will understand the fundamentals of horticulture and its branches such as pomology, olericulture, floriculture, landscaping, and plantation crops.</li> <li>● Study the scientific cultivation of fruits, vegetables, and flowers for higher yield and quality production.</li> <li>● Learn plant propagation techniques including seed propagation, cutting, layering, grafting, and budding.</li> <li>● Develop skills in nursery management and production of healthy planting materials.</li> <li>● Understand soil management and nutrient practices for sustainable crop production.</li> <li>● Gain knowledge of pest and disease management in horticultural crops.</li> <li>● Study post-harvest technology including harvesting, grading, storage, packaging, and marketing of produce.</li> <li>● Understand protected cultivation techniques such as greenhouse and polyhouse cultivation.</li> <li>● Develop landscaping and garden designing skills for aesthetic and functional purposes.</li> <li>● Promote entrepreneurship and self-employment</li> </ul> |
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opportunities in horticulture and allied sectors.

**Third- Semester**

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| 13  | Chemistry I & II  |  | 301.1 Understand the concept of molecular orbital theory and VSEPR theory<br>301.2 Understand the properties of d and f block elements.<br>301.3 Understand the role of nonaqueous solvents. Understand concept of errors and evaluation in chemical analysis.<br><br>301.4. Understand the concept of chemistry of Lanthanides and Actinides series.                      |
|     | <b>Paper-II</b><br><b>Organic Chemistry</b><br><b>(302)</b>                 |  | 302.1 Understand the structure and chemical bonding in aryl, alkyl halides, aldehydes<br><br>302.2 Understand the structure and chemical bonding in alcohols and phenols.<br><br>302.3 Understand the nomenclature, structure of the carbonyl group, synthesis of aldehydes and ketones<br><br>302.4 Understand chemical reaction of carboxylic acids and its derivatives. |
|     | <b>Chemistry Practical Course</b>   |  | 303· Verify theoretical principles experimentally<br><br>Interpret the experimental data<br><br>Improve analytical skills<br><br>Correlate the theory and experiments and understand their importance  |
| 14. | Physics<br><b>Paper 1:</b><br>Sound Waves, Applied Acoustic, Ultrasonic and |  | 301.1- Understand the concept of group and phase velocities, formation of standing waves and diagrammatic introduction of human ear and its responses.<br><br>301.2- Understand the working of transducers and their characteristics and the concept of acoustic and its applications.   |

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|                 | Power Supply (301)   |   | 301.3- Understand the production and applications of ultrasonic waves.<br><br>301.4- Understand the concept of voltage regulation and working of half, full and bridge rectifier. |
|                 | Paper 2: Physical Optics and Electromagnetic Waves (302)                           |   | 302.1- Understand the concept of interference of light through thin film<br>Apply the concept of interference of light through thin film in wavelength determination.             |
|                 |  |   | 302.2- Understand the concept of diffraction, Resolving Power of grating and Rayleigh's criterion for resolution.   |
|                 |  |   | 302.3- Understand the concept of polarization and double refraction   |
|                 |  |   | 302.4- Understand the origin and characteristics of EM waves, Physical significance of Maxwell's equations, Characteristics impedance of dielectric and Poynting theorem.         |
|                 | Physics Practical (303)  |   | 303-Apply and demonstrate the theoretical concepts of Physics and to develop scientific attitude.   |
| 15. Mathematics |  | <b>DSC-5</b><br><br><b>PARTIAL DIFFERENTIAL EQUATIONS</b> | Students will have the opportunity to enhance their understanding of the fundamental concepts of partial differential equations.  |
|                 |  |   | Students will gain an understanding of the significance of integral curves and surfaces associated with vector fields.  |
|                 |  |   | The primary objective of the course is to provide students with essential foundational analytical skills for effective problem-solving.   |
|                 |  |   | By applying the principles of basic tools through the course curriculum, students can solve a variety of practical problems in science and engineering.                           |
|                 |  | <b>DSC-5</b><br><br><b>PARTIAL DIFFERENTIAL EQUATIONS</b> | Students will be able to solve simultaneous differential equations of first order and first degree in three variables.  |
|                 | Students will be able to solve Pfaffian differential equations in three variables. |   |   |

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|  | <b>Practical</b>   | Students will be able to form the Partial differential equations of first and second order.   |
|  |  | Students will be able to differentiate between first order linear and non-linear PDEs and solve them accordingly.   |
|  |  | Students will be able to identify and solve homogeneous and non-homogeneous second order Partial differential equations with constant coefficients.   |
|  |  | Students will get the introduction of PDE with variable coefficients.   |
|  | <b>DSC-6<br/>ANALYTICAL<br/>SOLID<br/>GEOMETRY</b>               | To understand concepts on Two and Three-Dimensional Geometry.   |
|  |  | To find equations of Right lines, Planes, Spheres, Cones and Cylinders.   |
|  |  | To find the Direction cosines of any line under the different given conditions.   |
|  |  | To understand the intersection of any two or three, three dimensional geometrical figures.  |
|  | <b>PRACTICAL:<br/>BMT3P06:<br/>Analytical Solid<br/>Geometry</b> | Students should develop a strong understanding of the concepts and properties of various three-dimensional geometric objects such as planes, lines, spheres, cylinders using analytical methods and able to solve related problems. |
|  |  | Students should be able to identify and sketch various geometric objects including planes, straight lines, spheres, cones, and cylinders.   |
|  |  | Students should be able to derive equations of planes, lines, spheres, and other geometric objects.   |
|  |  | Students should be able to apply the concepts of analytical solid geometry to solve problems in other areas of mathematics and science.   |
|  | <b>Vocational Skill<br/>Course (VSC):<br/>BVS3P05:</b>           | After successful completion of this course student will be able to: Gain experimental, problem-oriented and research-oriented skills of learning of mathematics   |

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|  | <b>GeoGebra</b>  | Create interactive work sheets and learning materials   |
|  |  | Create interactive learning resources as web pages  |
|  | <b>Sem III Minor- I<br/>Code: BMT1T01<br/>Algebra and<br/>Trigonometry</b>           | Students will be able to update their basics of Set Theory, Matrices, Theory of equations and Complex variables and its applied aspects.                |
|  |  | Students will be able to understand the importance of hyperbolic functions and their relationships with trigonometric functions.                        |
|  |  | The main outcome of the course is to equip students with necessary basic analytic skills for problem solving.   |
|  |  | By applying the principles of basic tools through the course curriculum, students can solve a variety of practical problems in science and engineering. |
|  | <b>Sem III Minor- I<br/>PRACTICAL:<br/>BMT1P01:<br/>Algebra and<br/>Trigonometry</b> | Students will be able to learn implications of equivalence relations in determining equivalence classes.  |
|  |  | Students will understand properties of divisibility through problem solving.  |
|  |  | Students will be able to perform different operations on the given congruence.  |
|  |  | Solution of linear congruence will be studied by students.  |
|  |  | Students will be able to perform matrix operations to determine invertible matrices, row canonical and normal form of the matrices.                     |
|  |  | Students will be able to apply matrix operations to solve system of linear equations.   |
|  |  | Students will be able to find roots of a cubic and biquadratic equation.  |
|  |  | Students will be able to apply De Moivre's theorem to find nth roots of a complex number find.  |

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|  | <b>Sem III Minor- II</b><br><b>Code: BMT1T02</b><br><b>Differential</b><br><b>Calculus</b>                  | <p>Students will be able to update their basic knowledge of Maxima and Minima of functions of single variables and their application.</p>  |
|  |   | <p>Students will undergo problem solving training by learning Indeterminate forms and L' Hospital's Rule and their applicability.</p>  |
|  |   | <p>Students will be able to learn new concept of functions of two variables, Taylor series, and maxima and minima of such functions.</p>   |
|  |   | <p>The problem-solving skills will bring forth the importance of Jacobian in understanding the existence of inverse transformation and other aspects of independence of pair of functions.</p> |
|  |   | <p>By applying the principles of basic tools through the course curriculum, students can solve a variety of practical problems in science and engineering.</p>                                 |
|  | <b>Sem III Minor - II</b><br><b>PRACTICAL:</b><br><b>BMT1P02:</b><br><b>Differential</b><br><b>Calculus</b> | <p>Students will be able to make out the maximum or minimum nature of the functions by applying different conditions on the functions.</p>   |
|  |   | <p>Working on Geometric interpretation of Mean value theorems through graphs of a function will make students grasp the subject admirably.</p>   |
|  |   | <p>Students will learn application of Leibnitz, Maclaurin's and Taylor's theorems.</p>   |
|  |   | <p>Students will be able to apply L' Hospital's Rule to solve the problems</p>   |
|  |   | <p>Solving problems when functions involved are homogeneous</p>  |
|  |   | <p>Students will able to solve Jacobians and learn properties due to Jacobian.</p>   |
|  |   | <p>Analyzing Maxima and Minima of functions of two variables</p>   |
|  | <b>Semester-III OE-5</b><br><b>Basic</b>  | <p>After completion of course, the student will be able:To apply mathematical logic to solve problems.</p>   |

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|    |  | <b>Mathematics for Coding</b> | <p>To apply mathematical concepts such as sets, relations and functions.</p> <p>To use logical notations.</p> <p>To know the types of relations.</p>  |
|    |  | <b>'FIELD PROJECT</b>         | <p>Student will be able to explain the profile of the institute/company/industry where the Field Project/Community Engagement Project/Internship/Apprenticeship has been carried out. OR Student will be able to describe the need for objective of undertaking the field project.</p> <p>The student will be able to assess its Strengths, Weaknesses, Opportunities and Challenges (SWOC). OR Student will be able to list the outcomes of the Field Project.</p> <p>Student will be able to determine the challenges and future potential of Field Project/Internship. OR Student will be able to describe the profile of respondents / community involved in the 'Field Project' or 'Community Engagement Project'.</p> <p>Student will be able to correlate theoretical classroom learning and its application in practical situations by accomplishing the tasks undertaken during Internship/Apprenticeship, Field Project, or Community Engagement Project.</p> <p>Student will be able to apply various soft skills such as time management, positive attitude, and communication skills, scientific temperament during Internship/apprenticeship/FP/CEP.</p> <p>Student will be able to suggest improvements in processes/systems based on his experiences during Internship/apprenticeship/FP/CEP.</p> |
| 16 | Zoology I & II<br><br><b>Paper-I</b><br><br>Life and |                               | <b>301.1</b> Understand the Protochordata : General characters and classification up to order, <i>Herdmania</i> : Structure, digestive system, ascidian tadpole and retrogressive metamorphosis, <i>Amphioxus</i> : Structure, digestive system, circulatory system, sense organs and protonephridia, Agnatha : General characters of Cyclostomata  |

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| Diversity of Animals - Chordates<br><br>(Protochordata to Amphibia)<br><br><b>(301)</b> | ( <i>Petromyzon</i> and <i>Myxine</i> )  |
|   | <b>301.2</b> Understand the Pisces : Salient features of Chondrichthyes and Osteichthyes, Origin of paired fins in fishes, Migration and Accessory respiratory organs in fishes, Amphibia : General characters and classification up to order, Parental care and Neotony in Amphibia   |
|   | <b>301.3</b> Understand the Gametogenesis and type of eggs, Fertilization of egg, Post fertilization development of fish, Types of scales of fishes, Development of placoid scales   |
|   | <b>301.4</b> Understand the Frog Embryology - Cleavage , blastulation and gastrulation, Fate map, Morphogenetic movements in gastrula of frog, Development of respiratory organs in frog, Development of Aortic arches of frog   |
| <b>Paper-II</b><br><br><b>Organic Zoology</b><br><br><b>(302)</b>                       | <b>302.1</b> Understand the Mendelian Principles- Dominant recessive relationships, Mendelian laws, Interaction of genes- Epistasis - dominant and recessive, codominance, incomplete dominance, Quantitative genetics – Polygenic traits, inbreeding and outbreeding, hybrid vigor, Extracellular genome – Presence and functions of mitochondrial DNA, plasmids  |
|   | <b>302.2</b> Understand the concept of Cytoplasmic inheritance- <i>Kappa</i> particles in <i>Paramecium</i> , CO <sub>2</sub> sensitivity in <i>Drosophila</i> , milk factor in mice, Linkage and crossing over – Basic concepts of linkage, types and theories, Concepts of genes – Cistron , muton and recon, Genetic disorders in human beings – Haemoglobin disorders – Thalassemia and Sickle cell anemia. Metabolic disorder: Phenylketonurea  |
|   | <b>302.3</b> Understand the concept of Sex determination – ZZ, XY, XO, ZW pattern, Sex determination in <i>Drosiphila</i> – Genic balance theory, Environmental sex determination in <i>Bonellia</i> , Chromosomal aberrations: addition, deletion, duplication and inversion, Gene mutations- Spontaneous and induced mutations, mutagenic agents, Disorders related to chromosomal number- Turner syndrome, Klinefelter syndrome and Down syndrome |

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|    |  |   | <p><b>302.4</b> Understand the Lethal genes – Concepts and consequences, Population genetics: Basic concepts in population genetics, Hardy Weinberg equilibrium and its significance, Genetic counseling – Introduction , purpose, hereditary diseases and disorders, Applied genetics - DNA fingerprinting , amniocentesis, sperm banks, karyotyping</p>  |
| 17 | <p><b>Botany</b><br/><b>DSC- V</b></p> | <p><b>Fungi , Lichens and plant pathology</b></p>   | <ul style="list-style-type: none"> <li>● To understand the general characteristics, classification and reproduction of fungi and their ecological and economic importance. To study different groups of fungi including lower fungi and higher fungi with suitable examples.</li> <li>● To understand the structure, types and reproduction of lichens, and their role as bio-indicators and ecological pioneers.</li> <li>● To develop knowledge about symbiotic associations, especially lichen symbiosis between algae and fungi</li> <li>● To understand the basic concepts of plant pathology, including causes and types of plant diseases.</li> <li>● To study plant pathogens such as fungal, bacterial and viral diseases affecting crops. To learn disease symptoms, disease cycle and modes of infection in plants. To understand principles of plant disease management, including cultural, biological and chemical control methods.</li> </ul> |
|    | <p><b>DSC-VI</b></p>                   | <p><b>Angiosperms &amp; Angiosperm Taxonomy</b></p> | <p>To understand the origin and evolution of Angiosperms and their dominance</p> <p>To study the morphological characteristics of vegetative and reproductive parts of angiosperms. To identify and describe major angiosperm families based on diagnostic characters. To understand principles and systems of classification proposed by taxonomists such as:</p>   |

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|                                       |                              |  | <ol style="list-style-type: none"> <li>1. Bentham and Hooker</li> <li>2. Engler and Prantl</li> <li>3. Hutchinson <ul style="list-style-type: none"> <li>● To learn modern approaches in plant taxonomy, including phylogenetic classification and molecular systematics.</li> <li>● To understand rules of botanical nomenclature according to the International Code of Nomenclature for algae, fungi, and plants (ICN).<br/>To develop skills in plant identification using floras, manuals, and herbarium techniques.<br/>To understand economic importance of major angiosperm families.<br/>To enhance analytical skills for classification, comparison, and interpretation of plant relationships. To gain practical knowledge of herbarium preparation and field survey methods.</li> </ul> </li> </ol> |
| <p><b>Botany Practical Course</b></p> | <p><b>Paper V and VI</b></p> |  | <ol style="list-style-type: none"> <li>1. To study the general characteristics and classification of fungi.</li> <li>2. To identify and describe important fungi such as: <ul style="list-style-type: none"> <li>○ Rhizopus stolonifer</li> <li>○ Aspergillus niger</li> <li>○ Penicillium notatum</li> <li>○ Saccharomyces cerevisiae</li> <li>○ Agaricus bisporus</li> </ul> </li> <li>3. To study vegetative structures (mycelium, hyphae) and reproductive structures (spores).</li> <li>4. To prepare temporary slides of fungal specimens and observe under microscope.</li> <li>5. To understand economic importance of fungi (beneficial and harmful).</li> </ol>   |

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|  | <p><b>Minor 1</b><br/><b>(BBO1T01)</b></p> | <p><b>Microorganisms</b><br/><b>viruses,</b><br/><b>Prokaryotes, Algae</b></p> | <p>6. To study culture technique</p> <ol style="list-style-type: none"> <li>1. To study the <b>morphology and anatomy of lichens.</b></li> <li>2. To identify different types of lichens: crustose, foliose and fruticose forms.</li> <li>3. To study internal structure through section cutting and microscopic observation.</li> <li>4. To identify common lichen genera such as: <ul style="list-style-type: none"> <li>○ Parmelia</li> <li>○ Usnea</li> <li>○ Graphis</li> </ul> </li> <li>5. To perform simple chemical tests for lichen identification.</li> <li>6. To understand ecological and environmental significance of lichens (bioindicators) To study and identify different angiosperm families based on morphological characters.</li> </ol> <p>To observe and describe vegetative and floral parts of flowering plants.</p> <p>To understand the diversity and distribution of angiosperms in different habitats.</p> <p>To study floral symmetry, aestivation, placentation, and inflorescence types.</p> <p>To dissect flowers and write floral formula and draw flower</p> <p>To introduce students to the diversity of microorganisms, including viruses, prokaryotes, algae, and fungi.</p> |
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|  | <p><b>Minor 2<br/>(BBO1T02)</b></p> <p><b>O.E. II</b></p> | <p><b>and Fungi</b></p> <p><b>Cryptogam, Bryophyta, Paleobotany and Pteridophyta</b></p> <p><b>Nutraceuticals</b></p> | <p>To understand the structure and classification of viruses, with reference to examples such as Tobacco mosaic virus and Bacteriophage T4.</p> <p>To study the morphology, cell structure, and reproduction of prokaryotes, especially bacteria and cyanobacteria like Escherichia coli and Nostoc.</p> <p>To understand the economic and ecological importance of algae, including forms such as Chlamydomonas, Spirogyra, and Sargassum.</p> <p>To study the morphology, reproduction, and classification of fungi, with examples like Rhizopus stolonifer, Penicillium, and Agaricus.</p> <p>To explain the life cycles and reproductive strategies of selected microorganisms.</p> <ul style="list-style-type: none"> <li>• Understand the basic characteristics, life cycles, and classification of cryptogamic plants. Learn the ecological roles of cryptogams in various ecosystems.</li> <li>• Understand the life cycle (alternation of generations) and reproductive strategies of bryophytes.</li> <li>• Learn techniques for collection, preservation, and herbarium preparation of bryophytes.</li> <li>• Understand the morphology, anatomy, and reproduction of pteridophytes. Learn spore formation, alternation of generations, and evolutionary trends in vascular cryptogams. Develop skills for identification and classification of ferns and their allies. To introduce the fundamental concept of nutraceuticals, functional foods, and dietary supplements.</li> <li>• Differentiate nutraceuticals from conventional pharmaceuticals and food products.</li> </ul> |
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|                         |  |  | <ul style="list-style-type: none"> <li>Identify key bioactive compounds like vitamins, minerals, antioxidants, flavonoids, and probiotics.</li> </ul> <p>Understand their roles in human health, disease prevention, and therapeutic applications.</p>  |
| <b>Fourth- Semester</b> |  |  |   |
| 18                      | Chemistry I<br><br><b>Paper-I</b><br><br><b>Inorganic Chemistry</b><br><br>(401) |  | <p><b>401.1</b> Understand the properties of coordination compounds. Chelates: classification and their application and valence bond theory of complexes.</p> <p><b>401.2</b> Understand the concept of isomerism in coordination compounds. Concept of oxidation and reduction and balancing of redox reaction.</p> <p><b>401.3</b> Understand the concept of colorimetry and spectrophotometry.</p> <p>Understand the concept of separation technique like chromatography ion exchange and solvent extraction</p> <p><b>401.4</b> Understand the concept of inorganic polymers.</p> |
|                         | <b>Paper-II</b><br><br><b>Physical Chemistry</b><br><br>(402)                    |  | <p><b>402.1</b> Understand solid state and their classification and their laws.</p> <p>To understand the concept of determination of crystal structure</p> <p><b>402.2</b> Understand electrochemistry of reversible and irreversible cells.</p> <p>Understand the concept of electrical transport and transport number.</p> <p><b>402.3</b> Use spectroscopy for chemical analysis.</p> <p>Understand types of spectroscopy</p> <p><b>402.4</b> Understand the concept of quantum chemistry and wave function.</p>   |
|                         | <b>Chemistry</b>   |  | <b>403</b> Verify theoretical principles experimentally   |

|                                | <b>practical Course</b>   |   | <b>Interpret the experimental data</b><br><b>Improve analytical skills</b><br><b>Correlate the theory and experiments and understand their importance</b>   |
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| 19.<br>Physics                 | <b>Paper 1:</b><br>Solid State Physics, X-ray and Laser <b>(401)</b>              |   | 401.1- Understand the basic concept of crystallography, find various lattice parameters, find Miller Indices of the given plane and draw planes from the set of Miller Indices.   |
|                                |   |   | 401.2 Understand main feature of continuous X-ray spectra and Characteristics X-ray spectra<br>Apply Moseley's law to determine wavelength of X-ray.  |
|                                |   |   | 401.3 Understand the basic concept of solid state physics.<br>Apply Bragg's law for wavelength determination and simple cubic structure determination.<br>Calculate Miller indices of the given plane and identify the orientation of the plane from the given set of Miller indices. |
|                                |   |   | 401.4- Understand the concepts of LASER emission.<br>Understand the construction and working of various types of LASER.   |
|                                | <b>Paper 2:</b><br>Solid State Electronics, and Molecular Physics<br><b>(402)</b> |   | 402.1- Understand the construction and working and characteristics of various solid state devices.  |
|                                |   |   | 402.2- Understand the construction and working and characteristics of various FETs.   |
|                                |   |   | 402.3- Understand the concept of molecular physics.<br>402.4 Understand and apply the Raman spectroscopy.   |
| Physics Practical <b>(403)</b> |   | 403-Apply and demonstrate the theoretical concepts of Physics and to develop scientific attitude. |   |
| 20.                            | Mathematics   | <b>DSC-7</b><br><b>MATHEMATICAL METHODS</b>   | The student will be able to find the Laplace transform, inverse Laplace transform and Fourier transform. The course in mathematical methods basically develops a problem-solving skill in the students.   |
|                                |   |   | Upon successful completion, students will have the knowledge of various types of transformations, their   |

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|  |   | terminology and applications.   |
|  | <b>Semester-IV<br/>Paper-I</b><br><br><b>PRACTICAL:<br/>BMT4P07:<br/>Mathematical<br/>methods</b> | Students will be able to find the Laplace transforms of some standard and periodic functions.   |
|  |   | Students will be able to find the Laplace transforms of derivative and integral of a function.  |
|  |   | Students will be able to verify Convolution Theorem in case of Laplace transform and Fourier transform.   |
|  |   | Students will be able to find the inverse Laplace transform of simple functions.  |
|  |   | Students will be able to solve ordinary linear differential equation, simultaneous linear differential equations and partial differential equation using Laplace transform.   |
|  |   | Students will be able to find Fourier series of some simple functions with period 2, with period 2 divided into two or more segments and with period 2L.  |
|  |   | Students will be able to find Fourier series of even and odd functions, also Half range sine and cosine series of some simple functions,  |
|  |   | Students will be able to find Sine and Cosine Fourier transform.  |
|  |   | Students will be able to find the Fourier transforms of derivative of a function.   |
|  |   | Students will be able to established relationship of Fourier and Laplace transforms.  |
|  | <b>Semester-IV<br/>Paper-II</b><br><b>SEQUENCE AND<br/>SERIES</b>                                 | The student will be able to - define a sequence; understand the meaning of convergence and divergence of a sequence; test the convergence of a sequence.  |
|  |   | The student will be able to - define a series; understand the meaning of convergence and divergence of a series; test the convergence of a series; explain the difference between absolute and conditional convergence of a series. |
|  | <b>PRACTICAL:<br/>BMT4P08:</b>  | Students will be able to use $\epsilon$ - $m$ technique to verify whether the given number is a limit of a sequence or not.   |

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|  | <p><b>Sequence and Series</b></p>   | <p>Students will be able to determine if a given sequence is bounded, monotonic, and a Cauchy sequence.</p>   |
|  |   | <p>Students will be able to determine whether a given sequence is convergent or divergent by using the appropriate tests.</p>   |
|  |   | <p>Students will be able to determine the limit superior and limit inferior of sequences.</p>   |
|  |   | <p>Students will be able to find the sequence of partial sums of an infinite series.</p>  |
|  |   | <p>Students will be able to determine whether an infinite series is convergent or divergent by applying the appropriate tests such as limit/ratio comparison test, p-series test, Cauchy's root test, D'Alembert's ratio test, etc.</p> |
|  |   | <p>Students will be able to check the absolute and conditional convergence of a series</p>  |
|  | <p>Skill Enhancement Course (SEC):<br/>BVS4P06: Applied Mathematics for Data Science in Excel</p> | <p>After successful completion of this course student will be able to: Analyse the data and interpret it.</p>   |
|  |   | <p>Infer decisions on the basis of data interpretations.</p>  |
|  |   | <p>Apply appropriate formats for generating data reports.</p>   |
|  |   | <p>Enhance visual presentation of data through visualisations tools.</p>  |
|  | <p><b>Sem- IV Minor- III</b><br/><b>Integral Calculus and Ordinary Differential Equations</b></p> | <p>Students to update their knowledge of improper integrals, Beta and Gamma functions and their applicability.</p>  |
|  |   | <p>Students will be able to understand the importance of varied methods of solving differential equations of first and second order.</p>  |
|  |   | <p>The main objective of the course is to equip students with necessary analytic skills due to integrability and solutions of differential equations.</p>   |
|  |   | <p>By applying the principles of basic tools through the course curriculum, students can solve a variety of</p>   |

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|   |   | practical problems in science and engineering.  |
|   | <b>Sem- IV Minor- III PRACTICAL: BMT2P03: Integral Calculus and Ordinary Differential Equations</b> | Students will be able to solve problems using reduction formulae, Beta and Gamma functions.   |
|   |   | Application of double integration in solving problems on area of a region.  |
|   |   | Students will be able to solve problems by changing the order of integration  |
|   |   | Students will learn application of triple integration   |
|   |   | Students will be able to apply integrating factor in solving non-exact differential equations   |
|   |   | Students will be able to solve Euler's Equidimensional Eqs  |
|   |   | Students will be able to use concept of Wronskian in solving problems by method of variation of parameters  |
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| <b>Sem- IV Minor - IV Vector Analysis</b> |   | To impart foundational knowledge of vector algebra and vector differentiation.  |
|   |   | To inculcate in students foundational base of gradient of a scalar function, divergence and curl.   |
|   |   | New concept of vector integration shall be introduced and problems of work done by force shall be solved.   |
|   |   | To solve variety of practical problems in science and engineering by applying Greens theorem, divergence theorem, Stokes' theorem                                       |
|   |   | The course curriculum is so prepared that it has wide application in physics, and in other Science and Engineering subjects.  |
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|   | <b>Sem- IV Minor- IV PRACTICAL: BMT2P04: Vector Analysis</b>  | Students will be able to update themselves with foundational knowledge of vector algebra and vector differentiation by solving examples.                                |
|   |   | The basic skills required in science will be ingrained in students through foundational base of gradient of a scalar function, divergence and curl by solving examples. |

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|  |   | <p>New concept of vector integration shall be learnt by students and problems of work done by force shall be solved by them.</p>   |
|  |   | <p>Students will be able to solve variety of practical problems in science and engineering by applying Greens theorem,</p> <p>divergence theorem, Stokes' theorem.</p>   |
|  |   | <p>The course curriculum is so prepared that it has wide application in physics, and in other Science and Engineering subjects, and this will help students immensely in their future.</p>   |
|  | <b>Semester-IV OE-6<br/>MATHEMATICS<br/>FOR DATA<br/>ANALYSIS</b> | <p>After completion of course, the student will be able to:<br/>Collect, compile, evaluate, and professionally and securely use data from multiple sources.</p>  |
|  |   | <p>Comprehend the theory and basis of analysing the data.</p>  |
|  | <b>COMMUNITY<br/>ENGAGEMENT<br/>PROJECT</b>                       | <p>Student will be able to explain the profile of the institute/company/industry where the Field Project/Community Engagement Project/Internship/Apprenticeship has been carried out.<br/>OR Student will be able to describe the need for objective of undertaking the field project.</p> |
|  |   | <p>The student will be able to assess its Strengths, Weaknesses, Opportunities and Challenges (SWOC).<br/>OR Student will be able to list the outcomes of the Field Project.</p>   |
|  |   | <p>Student will be able to determine the challenges and future potential of Field Project/Internship. OR Student will be able to describe the profile of respondents / community involved in the 'Field Project' or 'Community Engagement Project'.</p>                                    |
|  |   | <p>Student will be able to correlate theoretical classroom learning and its application in practical situations by accomplishing the tasks undertaken during Internship/Apprenticeship, Field Project, or Community Engagement Project.</p>  |
|  |   | <p>Student will be able to apply various soft skills such as</p>   |

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|    |  |  | time management, positive attitude, and communication skills, scientific temperament during Internship/apprenticeship/FP/CEP   |
|    |  |  | student will be able to suggest improvements in processes/systems based on his experiences during Internship/apprenticeship/FP/CEP.  |
| 21 | <b>Zoology I &amp; II</b><br><br><b>Paper-I</b><br><br>Life and Diversity of Animals – Chordates (Reptilia, Aves and Mammals) <b>(401)</b> |  | <b>401.1</b> Understand the Reptilia- Classification based on temporal vacuities, Poison apparatus, biting mechanism , snake venom and its importance, Aves – Comparison of Ratitae and Caranitae, Flight adaptations and migration, Mammals – General characters of Prototheria, Metatheria and Eutheria                                    |
|    |  |  | <b>401.2</b> Understand the Modern theories of evolution : Darwinism and Neo-Darwinism, Adaptations – Cursorial, Aquatic, Terrestrial, Fossorial and Volant, Introduction to genetic basis of evolution – Species Deme, Variation, Races in Man (Caucasoid, Negroid, Mongoloid and Australoid)   |
|    |  |  | <b>401.3</b> Understand the Comparative account of aortic arches and heart in Reptiles, Birds and Mammals, Structure of hen’s egg, Development of chick up to primitive streak stage, Development of extra embryonic membranes in chick and functions  |
|    |  |  | <b>401.4</b> Understand the Frog Embryology - Cleavage , blastulation and gastrulation, Fate map, Morphogenetic movements in gastrula of frog, Development of respiratory organs in frog, Development of Aortic arches of frog   |
|    | <b>Paper-II</b><br><br>Molecular Biology and Immunology <b>(402)</b>   |  | <b>402.1</b> Understand the DNA: Structure of DNA, forms of DNA, properties of DNA, DNA as a genetic material, RNA: Structure of RNA, types of RNA, RNA as a genetic material, Prokaryotic and eukaryotic gene structure, Recombination in Bacteria: Bacterial transformation – Griffith’s experiment, Conjugation in bacteria, transduction |
|    |  | <b>402.2</b> Understand the concept DNA replication: Semiconservative model, Meselson Stahl experiments. |  |

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|    |               |   | <p>Process of replication – origin of replication, concept of replication, directionality of replication, Genetic code: Characteristics of genetic code, Wobble hypothesis, Protein synthesis: Transcription mechanism – Initiation , elongation and termination of transcription. Translation – activation of amino acids, transfer of activated amino acids to tRNA, Initiation, elongation and termination of polypeptide chain; inhibitors of protein synthesis, Gene regulation models - Lac operon and tryptophan operon</p>   |
|    |               |   | <p><b>402.3</b> Understand the Concepts of immunity – Innate and acquired immunity, organs of the immune system, Antigen - Structure, diversity, functions and types of antigen, Antibody- Structure, types and functions, Antigen-antibody interaction – Precipitation and agglutination</p>  |
|    |               |   | <p><b>402.4</b> Understand the Types of immune response: B cell response (antibody mediated), T cell response (cell mediated), Complement system: Basic concepts of complement cascades, classical, alternative and MBL pathways, implications of complement system in immune defense, Cytokines- General account on cytokines, Cytokine related diseases, Autoimmunity and immunodeficiencies- Autoimmune diseases and their treatment, AIDS and other immunodeficiencies</p>   |
| 22 | <b>Botany</b> | <p><b>DSC VII</b></p> <p><b>Genetics, Plant breeding, Biostatistics &amp; Evolution</b></p> | <ul style="list-style-type: none"> <li>● Understand the fundamental principles of heredity and variation.</li> <li>● Explain Mendelian and non-Mendelian inheritance patterns in plants and animals.</li> <li>● Study molecular genetics, including DNA, RNA, gene expression, and regulation.</li> <li>● Understand selection, hybridization, and mutation breeding strategies.</li> <li>● Explore the genetic basis of desirable traits and their heritability.</li> <li>● Analyze the role of biotechnology in modern plant breeding.</li> <li>● Understand basic statistical concepts and their applications in biological research.</li> <li>● Apply descriptive and inferential statistics to</li> </ul> |

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|   |  | <p>analyze experimental data.</p> <ul style="list-style-type: none"> <li>● Learn probability, correlation, regression, and sampling techniques relevant to biology</li> </ul>  |
|   | <p><b>DSC VIII</b></p> <p><b>Development, Anatomy and Embryology</b></p> | <ul style="list-style-type: none"> <li>● To provide a comprehensive understanding of the internal structure of plants, including roots, stems, leaves, and reproductive organs.</li> <li>● To explain the stages of plant growth and development, including meristem activity, differentiation, and organogenesis.</li> <li>● To analyze the factors influencing plant development, both genetic and environmental.</li> <li>● To describe the development of male and female gametophytes in angiosperms.</li> <li>● To study fertilization, zygote formation, embryogenesis, and endosperm development.</li> </ul>   |
| <p><b>Botany practical Course</b></p> <p><b>O.E. II</b></p> | <p><b>Biofuels Technology, IPR</b></p>                                   | <ul style="list-style-type: none"> <li>● To relate anatomical and embryological knowledge to plant breeding, propagation, and tissue culture techniques.</li> <li>● To provide skills for microscopic analysis and identification of plant tissues and developmental stages.</li> <li>● To encourage observation, experimentation, and interpretation of plant anatomical and developmental features.</li> </ul> <p>To prepare students for advanced studies in botany, agriculture, horticulture, and plant biotechnology.</p> <p>To introduce students to the fundamentals of biofuels, their types (first, second, and third generation), and their significance as renewable energy sources.</p> <p>To provide knowledge about the technological processes involved in producing biofuels from biomass, including fermentation, transesterification, and anaerobic digestion.</p> <p>To analyze the environmental benefits and challenges of</p> |

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|    |  |  | <p>biofuels compared to conventional fossil fuels.</p> <p>To understand the basics of IPR, including patents, copyrights, trademarks, and their relevance to biotechnological innovations.</p>  |
|    | <b>Fifth-Semester</b>  |  |   |
| 23 | <p>Chemistry I</p> <p><b>Paper-I</b></p> <p><b>Organic Chemistry (501)</b></p> |  | <p><b>501.1</b> Understand the concept of organic compounds of nitrogen and amines</p> <p><b>501.2</b> Understand heterocyclic compounds and their structure</p> <p><b>501.3</b> · Understand quantitative analysis: Estimation of carbon, hydrogen and nitrogen etc.</p> <p><b>Understand reaction and structure of organometallic compounds</b></p> <p><b>501.4</b> · To study Spectroscopy.</p> <p><b>To understand Electromagnetic and Infrared absorption spectroscopy</b></p> |
|    | <p><b>Paper-II</b></p> <p><b>Physical Chemistry (502)</b></p>                  |  | <p><b>502.1</b> · Understand electrochemistry and various types of cells.</p> <p><b>Understand types of reversible electrodes</b></p> <p><b>502.2</b> Understand quantum chemistry and molecular orbital theory.</p> <p><b>502.3</b> · Understand the concept of Photochemistry.</p> <p><b>To study Raman Spectroscopy</b></p> <p><b>502.4</b> To understand colligative properties and macromolecules.</p>   |
|    | <b>Chemistry</b>   |  | <p>· Verify theoretical principles experimentally</p>   |

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|                | <b>Practical Course (503)</b>   |  | <ul style="list-style-type: none"> <li>· Interpret the experimental data</li> <li>· Improve analytical skills</li> </ul> <p>Correlate the theory and experiments and understand their importance</p> |
| 24.<br>Physics | <b>Paper 1:</b><br>Atomic Physics, Free Electron Theory and Statistical Physics (501) |  | 501.1- Understand Vector atom Model, the concept of space quantization, Zeeman Effect and L-S and J-J coupling.  |
|                |   |  | 501.2- Apply free electron theory and band theory of solid to classify solids as conductor, semiconductor and insulator.   |
|                |   |  | 501.3- Understand and apply Maxwell-Boltzmann statistics   |
|                |   |  | 501.4- Understand and apply Bose-Einstein statistics and Fermi-Dirac statistics.   |
|                | <b>Paper 2:</b><br>Quantum Mechanics, Nanomaterials and Nanotechnology (502)          |  | 502.1- Understand the basics of quantum mechanics and apply it to explain the phenomena like black body radiation and Compton Effect.  |
|                |   |  | 502.2- Understand and apply Schrodinger's equation to free particle in a one and three dimension.  |
|                |   |  | 502.3- Understand the basics of nanotechnology.  |
|                | Physics Practical (503)   |  | 502.4- Understand the synthesis and characterization techniques of nano materials.   |
|                |   |  | 503- Apply and demonstrate the theoretical concepts of Physics and to develop scientific attitude.   |
| 25             | <b>Mathematics-I</b><br><b>Complex Analysis</b><br><b>501</b>                         |  | 501.1 Understand the concept of Complex variable   |
|                |   |  | 501.2 Understand the concept of Conformal Transformation   |
|                |   |  | 501.3 Understand the concept of Complex Integration  |
|                |   |  | 501.4 Students learn about Taylors theorem   |
|                | <b>Mathematics-II</b><br><b>Metric spaces, Boolean</b>                                |  | 502.1 Students deal with the definition, properties and examples of countable and uncountable sets and understand the metric space   |
|                |   |  | 502.2 Understand the concept of Completeness, Compactness and Connectedness  |

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|    | <b>Algebra and Graph theory</b><br><b>502</b>   |  | 502.3 Understand the concept of Boolean Algebra   |
|    |   |  | 502.4 Understand the basic concept of Graph Theory  |
| 26 | <b>Zoology I &amp; II</b><br><b>Paper-I</b><br>General Mammalian Physiology – I<br><b>(501)</b> |  | <b>501.1</b> Understand the Enzymes – Distribution and chemical nature of enzymes, General properties of enzymes, Classification of enzymes, Factors affecting enzyme activity  |
|    |   |  | <b>501.2</b> Understand the Structure and functions of digestive glands - (Salivary, Gastric, Intestinal, Liver and Pancreas ), Gastrointestinal hormones, Digestion and absorption of proteins, carbohydrates and lipids, Vitamins- Fat soluble and water soluble vitamins; Sources, deficiency and diseases |
|    |   |  | <b>501.3</b> Understand the Respiratory pigments - Types , distribution and properties, Mechanism of Respiration, Transport of O <sub>2</sub> and CO <sub>2</sub> , Respiratory disorders and effects of smoking  |
|    |   |  | <b>501.4</b> Understand the Composition and functions of blood, Blood clotting – Intrinsic and extrinsic factors, blood groups and Rh factor, Cardiac cycle, E.C.G. and Blood pressure  |
|    |   | <b>Paper-II</b><br><b>Physical Zoology</b><br><b>(502)</b> |   |
|    |   |  | <b>502.2</b> Understand the Prawn culture and Pearl culture, Fabrication and setting up of aquarium and its maintenance, Breeding of aquarium fishes – Live bearers and egg layers, Diseases caused by fungi, bacteria,   |

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|    |  |  | <p>protozoa and helminthes</p> <p><b>502.3</b> Understand the concept Chemical control :<br/>Insecticides - Pyrethroids, carbomate and HCN – mode of action, merits and demerits, Biological control – Biological agents – predators and parasites; merits and demerits, Crop pest: Life cycle, damage and control of Cotton spotted boll worm -<i>Earias vitella</i> ,Stored grain pest- Rice Weevil, <i>Sitophilus oryzae</i> , Animal pest: Life cycle, damage and control of – House fly – <i>Musca nebulo</i>, Stable fly – <i>Stomoxys calcitrans</i></p> <p><b>502.4</b> Understand the Sericulture- Types of Silkworm. Life cycle and rearing of mulberry silkworm, <i>Bombyx mori</i>, Life cycle and rearing of non mulberry silkworm (Tasar), <i>Antheraea mylitta</i> ; Brief idea of coccon processing for silk fabric - coccon boiling, reeling, rereeling, winding, doubling, twisting and weaving, Apiculture – Types of honey bees. Life cycle, culture, movable frame hive, bee product and its economic importance, Lac culture – Lac insect, <i>Laccifer lacca</i> - Life cycle, Lac processing, Lac products and Economic Importance</p> |
| 27 | <p><b>Botany-<br/>Paper-I</b></p> <p><b>Plant<br/>physiology<br/>, Mineral<br/>Nutrition<br/>and<br/>Hydropho<br/>nics</b></p> |  | <ul style="list-style-type: none"> <li>● Understand water relation and its significance.</li> <li>● Understand the Osmosis, Diffusion, Osmotic Pressure.</li> <li>● Understand the ascent of sap.</li> <li>● Understand the transpiration, phloem transport and mineral uptake.</li> <li>● Understand the photosynthesis process, photosynthetic pigments.</li> <li>● Understand the light and dark reaction of photosynthesis.</li> <li>● Understand the respiration and its mechanism.</li> <li>● Understand the fermentation process.</li> <li>● Understand the nitrogen fixation by symbiotic and Non-Symbiotic mechanism.</li> <li>● Study the pant movements and photoperiodism.</li> <li>● Study the circadian rhythms and Biological Clock.</li> <li>● Understand the mineral nutrition, source and</li> </ul>  |

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|    |  |  | <p>types.</p> <ul style="list-style-type: none"> <li>● Study the role and deficiency symptoms<br/>Macronutrients and Micronutrients.</li> <li>● Study the hydroponics, advantages and disadvantages of hydroponics.</li> </ul>  |
|    | <b>Paper-II</b>                          |  | <ul style="list-style-type: none"> <li>● Understand the concept of Ecology.</li> <li>● Study the climatic, Edaphic and Physiographic factors.</li> <li>● Study the ecosystem, components of Ecosystem.</li> <li>● Understand the food chain, food web and ecological pyramids.</li> <li>● Study the Autecology and Synecology.</li> <li>● Understand the process of succession.</li> <li>● Study the plant adaptations.</li> <li>● Study the Biogeochemical cycles.</li> <li>● Develop the skills of organic farming.</li> <li>● Understand the methods of recycling of biodegradable kitchen, agriculture and industrial waste.</li> <li>● Study to prepare organic manure.</li> </ul> |
|    | <b>Plant Ecology and Organic Farming</b> |  |   |
|    | <b>Botany Practical</b>                  |  | <ul style="list-style-type: none"> <li>● Determining the Frequency, Density, and Abundance of community by Quadrate Method.</li> <li>● Determining the homogeneity of vegetation by Raunkier's frequency.</li> <li>● Study the frequency of herbaceous species in grassland to compare the frequency distribution with Raunkier's standard frequency diagram.</li> <li>● Study the soil profile of different locations near by area.</li> <li>● Study the salinity of different water samples.</li> </ul>   |
|    | <b>Sixth-Semester</b>                    |  |   |
| 28 | Chemistry I                              |  | <p><b>601.1</b> · Understand Metal ligand bonding in Transition Metal complexes.<br/>Electronic spectra of Transition Metal Complexes.</p>  |

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|     | <p><b>Paper-I</b></p> <p><b>Inorganic Chemistry</b></p> <p><b>(601)</b></p>   | <p><b>601.2</b> Understand Magnetic Properties of Transition metal Complexes.</p> <p>To study thermodynamic and kinetic aspect of metal complexes.</p> <p>601.3 Understand organometallic chemistry.</p> <p>Understand properties and structure of metal carbonyls</p> <p>601.4 To study Bio-organic chemistry</p> <p>Understand the concept of s Hard and Soft acids and bases.</p> |
|     | <p><b>Paper-II</b></p> <p><b>Organic Chemistry</b></p> <p><b>(602)</b></p>    | <p>602.1 Understand NMR Spectroscopy</p> <p>602.2. Understand Organic Synthesis via Enolates.</p> <p>Carbohydrates: classification, reaction and mechanisms.</p> <p>602.3 Understand Amino acids, peptides and nucleic acids. To study Fats, oil and detergents.</p> <p>602.4 Understand synthetic dyes, synthetic drugs, synthetic polymer</p>                                      |
|     | <p><b>Chemistry</b></p> <p><b>Practical Course</b></p> <p><b>(603)</b></p>    | <p>Verify theoretical principles experimentally</p> <p>Interpret the experimental data</p> <p>Improve analytical skills</p> <p>Correlate the theory and experiments and understand their importance</p>  |
| 29. | <p>Physics</p> <p><b>Paper 1:</b><br/>Relativity, Nuclear Physics and Bio</p> | <p>601.1- Understand the postulates of the special theory of relativity.</p> <p>Apply the concept of relativity to explain Length contraction, Time dilation, Velocity addition theorem, Variation of mass with velocity, Mass energy equivalence.</p> <p>601.2- Understand the concept of nuclear physics.</p> <p>601.3- Apply the concept of nuclear physics to explain</p>        |

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|    | Physics<br>(601)  |  | various decay processes.   |
|    | <b>Paper 2:</b><br>Electronics, Fiber Optics, Communication and Digital Electronics (602) |  | 601.4- Understand the Principle, Construction and working of different bio instruments.  |
|    |   |  | 602.1- Understand the operations and applications of operational amplifiers.   |
|    |   |  | 602.2- Understand the various basic structures of optical fibers and basic concept involved in propagation of light waves through optical fiber.   |
|    |   |  | 602.3- Understand the concept of amplitude modulation and frequency modulation.  |
|    |   |  | 603.4- Understand various number systems. Construct the truth tables for various logic gates. Verify De Morgan's theorem   |
|    | Physics Practical<br>(603)  |  | 603- Apply and demonstrate the theoretical concepts of Physics and to develop scientific attitude.   |
| 30 | <b>Mathematics-I</b><br><br><b>Linear Algebra</b>   |  | 601.1 Understand the concept of Vector Spaces  |
|    |   |  | 601.2 Understand the concept of Linear transformation  |
|    |   |  | 601.3 Learn about application to the theory of ordinary linear differential equation   |
|    |   |  | 601.4 Learn about linear operations in Matrices  |
|    | <b>Mathematics-II</b><br><br><b>Special Theory of Relativity</b><br><br><b>602</b>        |  | 602.1 Study the Newtonian Mechanics and understand the concept special theory of relativity  |
|    |   |  | 602.2 Learn the Lorentz transformation and consequences  |
|    |   |  | 602.3 Understand the concept of Tensors and Space – Time structure   |
|    |   |  | 602.4 Study the Mass Energy Equivalence, Energy momentum Tensor and Maxwell's Equation of Electromagnetic theory in Vacuum   |
| 31 | Zoology I & II  |  | <b>601.1</b> Understand the Types of neurons, E.M. structure of neuron, Conduction of nerve impulse, Ultrastructure of striated muscle, Sliding filament theory of muscle contraction, Properties of muscles (Twitch, Tetanus, |

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| <p><b>Paper-I</b></p> <p>General Mammalian Physiology - II</p>   | <p>Tonus, Summation, All or None Principle, Muscle fatigue)</p>   |
|  | <p><b>601.2</b> Understand Structure of uriniferous tubule, Mechanism of urine formation, Counter – current mechanism, Normal and abnormal constituents of urine; Elementary idea of dialysis</p>   |
|  | <p><b>601.3</b> Understand the Structure and functions of pituitary gland, Structure and functions of thyroid and parathyroid gland, Structure and functions of adrenal gland, Structure and functions of pineal gland</p>  |
|  | <p><b>601.4</b> Understand the Oestrous and menstrual cycle, Male and female sex hormones, Causes of infertility in male and female, Contraceptives – Mechanical and hormonal ; <i>In-vitro</i> fertilization</p>   |
| <p><b>Paper-II</b></p> <p>Applied Zoology –II</p> <p>( Biotechniques, Microtechnique, Biotechnology, Bioinformatics and Biostatistics)</p> <p><b>(602)</b></p> | <p><b>602.1</b> Understand the Concepts of sterilization: Filtration, autoclaving, dry heat sterilization, wet sterilization and radiation, Separation of biomolecules: Centrifugation (Sedimentation, density gradient); Chromatography (Elementary idea of thin layer, gel filtration and ion exchange - Principles and applications), Electrophoresis: Agarose gel electrophoresis, SDS-PAGE, Principles of colorimeter and spectrophotometers</p> |
|  | <p><b>602.2</b> Understand the concept of Fixation, dehydration, clearing, embedding &amp; section cutting, Difficulties encountered during section cutting (causes and remedies), Double staining with Haematoxylin and Eosin, Histochemical staining techniques for carbohydrates (Periodic acid schiff), proteins (Mercury-bromophenol blue) and lipids (Sudan black-B)</p>  |
|  | <p><b>602.3</b> Understand the Basic concepts in recombinant DNA technology, Gene isolation method- Shotgun cloning, Isolation of gene- DNA manipulation enzymes: Nucleases, ligases, polymerases, Basic concepts of cloning vectors and splicing : Insertion of DNA and ligation using blunt ends, cohesive ends, Cloning vectors, Application of biotechnology: Insulin and vaccine production</p>  |

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|    |                                |   | <p><b>602.4</b> Understand the Bioinformatics: Definition, Basic concepts in bioinformatics, importance and role of bioinformatics in life sciences, Bioinformatics databases- introduction, types of databases, Nucleotide sequence databases, Elementary idea of protein databases, Biostatistics – Tabulation of data, presentation of data, sampling errors, mean, mode, median, probability, standard error and standard deviation</p>   |
| 32 | <p><b>Botany (BBO4T07)</b></p> | <p><b>Genetics, Plant breeding, Biostatistics &amp; Evolution</b></p> | <ul style="list-style-type: none"> <li>● Understand the fundamental principles of inheritance including Mendelian and non-Mendelian genetics.</li> <li>● Explore the molecular basis of genes, chromosomes, and DNA replication, transcription, and translation.</li> <li>● Analyze gene interactions, mutations, and genetic disorders.</li> <li>● Learn about selection methods, hybridization, and breeding for biotic and abiotic stress resistance.</li> <li>● Explore molecular breeding techniques such as marker-assisted selection and genetic engineering.</li> </ul>                         |
|    |                                | <p><b>Development, Anatomy and Embryology</b></p>                     | <ul style="list-style-type: none"> <li>● Study the phytogeography, climatic regions of India.</li> <li>● Study the Environmental pollution.</li> <li>● Study the Renewable and Non Renewable sources.</li> <li>● Learn the stages of plant growth and development from seed germination to maturity. Study the physiological and genetic factors regulating plant development.</li> <li>● Identify and differentiate between various plant tissues: meristematic, permanent, simple, and complex.</li> </ul> <p>Understand structural adaptations of roots, stems, leaves, and reproductive organs.</p> |

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|  |                                | <ul style="list-style-type: none"> <li>● Understand the development of male and female gametophytes, zygote, embryo, and endosperm. Learn about polyembryony, apomixis, and other reproductive anomalies.</li> </ul>  |
|  | <b>Botany Practical Course</b> | <ul style="list-style-type: none"> <li>● Conduct microscopic examination of plant tissues and embryological stages.</li> <li>● Prepare slides and perform anatomical studies of roots, stems, leaves, flowers, and seeds.</li> <li>● Use anatomical and embryological insights in plant breeding, biotechnology, and conservation. Understand developmental processes for improving crop yield and quality..</li> </ul> |