



NAAC REACCREDITED 'B' GRADE (2011-17)

S.S.V.P. Sanstha's

**Late S.D. Patil Alias Baburao Dada Arts, Commerce  
and Late Bhausahab M.D. Sisode Science College,  
Sindkheda - 425406 Dist. Dhule (M.S.)**

**Prin. Dr. B. R. Chaudhari**  
**M.Sc. Ph.D.**

Ref. No. ACS/SNK/ 201

Date: / /201

**Program outcomes, Program Specific outcomes, for all program offered by the institute are started and displayed on website and communicated to the teachers & students**

## **Program Outcomes**

### **Program outcomes of Bachelor of Arts**

PO1. Demonstrate a detailed knowledge and understanding of selected fields of study in core disciplines in humanities, social sciences and languages.

PO2. Articulate the relationship between diverse forms of knowledge and the social, historical and cultural contents that produced them.3) Communicate effectively and in the case of those students undertaking a language major, need, write, listen to and speak another language with fluency and appreciate its cultural context.

PO3. Reading, Writing skills and Process:- Students will become accomplished, active readers to appreciate ambiguity and complexity and who can articulate their own interpretations with an awareness and curiosity for other perspectives. Students will be able to write effectively for a variety of professional and social setting. they will develop an awareness and confidence in their own voice as a writer and analyze complex social and natural problems with the help of their degree specialization.

PO4. Sense of Genre:- Student will develop an appreciation of how the formal elements of language and genre shape meaning and they will develop a facility at writing in appropriate genres for research and other variety of purposes.

PO5. Critical Approaches:- Students will develop the ability to read works of literary, rhetorical, research, cultural criticism and develop idea with the help of their specialization. They will express their own ideas as informed opinions, small projects, practical, and research papers and understand how their own approach compares to variety of critical and theoretical approaches.

PO6. Oral communication skills:- Student will demonstrate the skill needed to participate in conversation that builds knowledge collaboratively. Listening carefully and respectfully to others view points. Articulating their own ideas and questions clearly and situating their own ideas in relation to other voices and ideas. Student will be able to prepare, organize and deliver an engaging oral presentation.

PO7. Ethics:- Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

### **Program outcomes of Bachelor of Commerce**

PO1. Demonstrate knowledge of major theories and models in key areas of organizational behaviour.

PO2. Analyse Organizational problems and generate realistic solutions based on current academic research in organizational behaviour.

PO3. Apply basic mathematical and statistical skills necessary for analysis of a range of problems in economics, actuarial studies, Accounting, Marketing, Management and Finance.

PO4.**Environment Awareness:** Understand the issues and problems of environmental context and develop environmental awareness in the mind.

PO5.**Consumer Movement:** Make people aware about consumer movement, rights & duties, laws relating to consumers.

PO6.**Sound knowledge of various laws:** Impart the knowledge of basic concepts, terms & provisions of company law, Mercantile law, Income Tax and other laws affecting business, trade and commerce.

### **Program outcomes of Bachelor of Science**

PO1. Articulate the methods of science and explain why current scientific knowledge is both contestable and testable by future inquiry.

PO2. Apply appropriate methods of research, investigation and design, to solve a problem in science, mathematics, technology including the planning and conduct of a significant project or investigation.

PO3. Articulate the relationship between different science communities of practice, the international scope of science, mathematics, technology and engineering knowledge and methods and the contributions to their development that have been made by people with diverse perspectives, culture and backgrounds.

PO4. Students will develop the ability to read works of literary, rhetorical, research, cultural criticism and develop ideas with the help of their specialization. They will express their own ideas as informed opinions, small projects, practical, and research papers and understand how their own approach compares to a variety of critical and theoretical approaches.

## **Program Specific Outcomes:**

POS are to be listed for all graduates program separately i.e.

### **Program Specific Outcomes for Marathi**

PSO1. Understand basic concepts of Marathi.

PSO2. To Known in depth Knowledge of Literature

PSO3. To know the great writers and their literary works.

PSO4. To promote cultural values in them through Marathi language

### **Program Specific Outcomes for Hindi**

PSO1. Understand basic concepts of Hindi.

PSO2. To Known in depth Knowledge of Literature of Hindi.

PSO3. To know the great writers of Hindi language.

PSO4. To promote cultural values in them through Hindi language.

PSO5. Understand the value of nation and society plus health relation with everyone.

### **Program Specific Outcomes for English**

PSO 1. Teaching of the basic concepts of English language and literature.

PSO 2. Learning of Characteristics of literature in English, diverse literary historical periods and cultures.

PSO 3. Application of literary critical perspectives to generate original analysis of literature in English

PSO 4. Promotion of cultural values through English language

### **Program Specific Outcomes for Geography**

PSO1. Understand the nature and basic concept of geography.

PSO2. Understand the applied and professional nature of geography such as fields of G.I.S. and surveying.

PSO3. Understand the application of modern geography techniques such as geographical information system in society as well as environmental and settlement geography, hazards, language land cover etc.

### **Program Specific Outcomes for Economics**

PSO 1. Understand the difference between Micro Economics & Macro Economics.

PSO2. Understand techniques & diagrams related to employment theory.

PSO3. Understand the concept of Foreign Exchange, International Banking & Euro Currency Market.

PSO4. To study the international policies.

### **Program Specific Outcomes for Commerce**

PSO1. Understand application of mathematical & Statistical concepts and techniques in solving business problems.

PSO2. Develop the insights regarding organizational skills, functioning of modern appliances, e format records in modern office.

PSO3. Stimulate the student's interest by showing the relevance and use of various economic theories.

PSO4. Develop the capability of students for knowing banking concepts and operations.

PSO5. Analyze the basic concept in marketing and prepare to face the relevant changes in the field of marketing.

PSO6. Know the basic concepts, terms and provisions of mercantile & business laws.

PSO7. Instill the knowledge about accounting procedures, methods & techniques.

PSO8. Develop business communication skills.

PSO9. Develop cost consciousness and analytical bent of mind.

### **Program Specific Outcomes for Physics**

PSO1. To understand the basic concept of mechanics, electrodynamics, quantum mechanics.

PSO2. To understand the concepts of energy, work, power, the concepts of conservation of energy, elasticity, surface tension and viscosity.

PSO3. To understand optical phenomena such as polarization, birefringence, interference and diffraction in terms of the wave model and to analyze simple examples of interference and diffraction phenomena.

### **Program Specific Outcomes for Chemistry**

PSO1. Physical chemistry: Review of conventional processes, recent advance techniques. surface properties, ionic properties and other special characteristics of substances,

PSO2. Inorganic chemistry: Introduction to molecular symmetry, co-ordination of compounds and Bio-inorganic chemistry.

PSO3. Organic chemistry: Introduction to fundamental concepts and principles of process synthesis. Proficiency in Synthetic skill, Characterization by various analytical techniques, Micro- techniques and in-depth knowledge in subject is evaluated by allotting synthetic scheme.

### **Program Specific Outcomes for Zoology**

PSO1. To study the range from diversity to Molecular Biology

PSO2. To serve as a valuable foundation for understanding human anatomy, physiology, genetics, molecular biology and entomology.

PSO3. To study application of Zoology for benefit of mankind.

### **Program Specific Outcomes for Botany**

PSO1. To understand the physiological process in plants

PSO2. To Study biotechnological process, use of various plants resources at commercial level.

PSO3. To study the variation of plants life at all levels of biological organization.

### **Program Specific Outcomes for Microbiology**

PSO1. Acquiring the basic concepts of Taxonomy, Biostatistics, Bioinformatics, Biochemistry, Biophysics, Waste water engineering and Virology.

PSO2. Finding the suitability of microorganisms and interlinking its role in industry.

PSO3. Exploring micro organisms in the treatment of waste.

PSO4. Studying the instrumentation involved in isolation, identification of microorganisms, biochemistry and molecular biology.

### **Program Specific Outcomes for Computer Science**

PSO1. An ability to apply knowledge of computing and mathematics appropriate to the discipline.

PSO2. Those software systems are used in many different domains. This requires both computing skills and domain knowledge.

PSO3. Software development fundamentals, including programming, data structures, algorithms and complexity.

PSO4. Systems fundamentals, including architectures and organization, operating systems, networking and communication, parallel and distributed computation, and security.

PSO5. Application fundamentals, including information management and intelligent applications.

PSO6. Multiple programming languages, paradigms, and technologies.

# Course Outcomes

## Course Outcomes of Marathi Dept

| Sr.no. | Paper                                 | Program Outcomes   |
|--------|---------------------------------------|--|
| 1      | F.Y.B.A G -1<br>.<br>S.Y.B.A G-2<br>. | At the general level, students are acknowledged with Marathi literature, language and culture. It helps them to develop the interest in understanding the Marathi  |
|        | T.Y.B.A. G-3                          | Literature, its various forms and aesthetic. It also helps to develop the communication and writing skills to face the modern era of globalization.  |
| 2      | S.Y.B.A S-1<br>S.Y.B.A. S-2           | At this stage, the special level papers helps students to acquire the deep knowledge of literature its various forms, authors, critics, poetry, history of ancient and modern Marathi literature. It also helps to understand the process of creation of poetry, and methods of evaluation of poetry, conceptual theories, culture and philosophy. The basic outcomes of the course are that the students are introduced with the society, human values through the literature, which helps them to become a person with values.   |
| 3      | T.Y.B.A. S-3<br>T.Y.B.A. S-4          | At the third year course, students are introduced with linguistic and literature theories. Through the literary theories they got aware of the development and new aspects in literature as well as society. In fact it is said that , literature is the mirror of the society, At this stage students are prepared f to read, understand the ‘isms’ movements, values, criticism through literature. It also helps to develop lingual skills. Language is a social tool. Through linguistics students got aware of communication skills. This course helps students to achieve basic skills of life through which they could manage the bread and butter needs and also cultivate human values. |

|   |                       |   |
|---|-----------------------|---|
| 4 | F.Y.B.COM,<br>S.Y.BSC | This course introduces the commercial modern world, its demands, and opportunities of life. A biography, autobiographies, key models, successful personalities in society motivates them to set and achieve goals of life. It helps students to learn commercial aspects of literature and language. Media, newspapers, magazines, DTP skill, communication skills, public relations etc. are the areas where they can make their careers |
|---|-----------------------|---|

### Course Outcomes of Hindi Dept

| S.N. | CLASS & PAPER                                   | LEARNING OUT COMES   |
|------|---|--|
| 1.   | F.Y.B.A. GENERAL                                | Through this syllabus student will get the knowledge of Hindi Writers & Poets.<br>They value the national unity through HINDI language.  |
| 2.   | F.Y.B.Com.<br>Hindi                             | Through this syllabus students will understand the correct language to write and speak.  |
| 3.   | S.Y.B.A.<br>GENERAL-2<br>SPECIAL-1<br>SPECIAL-2 | Good language will make their personality special among others.<br>Through this study they become a very good writer, poet, novelist, dramatist etc.<br>They can go for journalism course also which will provide them jobs. |
| 4.   | T.Y.B.A<br>GENERAL<br>SPECIAL-3<br>SPECIAL-4    | Through Writer's Autobiography student will learn the lessons of great lives.<br>They will understand about the poetic concept of Drama.   |

## Course Outcomes of English Dept

| S.N. | Class       | Subject                   | Learning Outcomes  |
|------|-------------|---------------------------|--|
| 1    | F. Y. B. A. | <b>Compulsory English</b> | <p>Students familiarized with excellent pieces of prose and poetry in English so that they realized the beauty and communicative power of English</p> <p>Exposed them to native cultural experiences and situations in order to develop humane values and social awareness</p> <p>Developed overall linguistic competence and communicative skills of the students.</p>  |
| 2    | F. Y. B. A. | <b>Optional English:</b>  | <p>Students became familiar with the basics of literature and language</p> <p>Students familiarized with different types of literature in English, the literary devices and terms so that they understood the literary merit, beauty and creative use of language</p> <p>Introduced the basic units of language so that they became aware of the technical aspects and their practical usage</p> <p>Students prepared to go for detailed study and understanding of literature and language</p> <p>Developed integrated view about language and literature in them</p> |
| 3    | S. Y. B. A  | <b>Compulsory English</b> | <p>Developed competence among the students for self- learning</p> <p>Students familiarize with excellent pieces of prose and poetry in English so that they realized the beauty and communicative power of English</p> <p>Developed students' interest in reading literary pieces</p> <p>Exposed them to native cultural experiences and situations in order to develop humane values and social awareness</p> <p>Developed overall linguistic competence and communicative skills of the students</p> <p>□</p>  |

|   |                   |                               |   |
|---|-------------------|-------------------------------|---|
| 4 | <b>S. Y. B. A</b> | <b>General English (G-2)</b>  | <p>. a) Students exposed to the basics of short story, one of the literary forms</p> <p>Students familiarized with different types of short stories in English</p> <p>Students understood the literary merit, beauty and creative use of language</p> <p>Introduced some advanced units of language so that they became aware of the technical aspects and their practical usage</p> <p>Students prepared to go for detailed study and understanding of literature and language</p> <p>Developed integrated view about language and literature in them</p> <p>□</p> |
| 5 | <b>S. Y. B. A</b> | <b>Special Paper-I (S-1)</b>  | <p>The students acquainted and familiarized with the terminology in Drama Criticism (i.e. the terms used in Critical Analysis and Appreciation of Drama)</p> <p>Students encouraged for making a detailed study of a few sample masterpieces of English Drama from different parts of</p>   |
|   |                   |                               | <p>the world</p> <p>Developed interest among the students to appreciate and analyze drama independently</p> <p>Enhanced students' awareness in the aesthetics of Drama and to empower them to evaluate drama independently</p>  |
| 6 | <b>S. Y. B. A</b> | <b>Special Paper-II (S-2)</b> | <p>The students familiarized with the terminology in poetry criticism (i.e. the terms used in critical analysis and appreciation of poems)</p> <p>Students encourage for making a detailed study of a few sample masterpieces of English poetry</p> <p>Students enhanced their awareness in the aesthetics of poetry and to empower them to read, appreciate and critically evaluate the poetry independently</p>   |

|    |                    |                                |   |
|----|--------------------|--------------------------------|---|
|    |                    |                                |   |
| 7  | <b>T. Y. B. A.</b> | <b>Compulsory English</b>      | <p>Students introduced to the best uses of language in literature.</p> <p>Students familiarized with the communicative power of English.</p> <p>Students became competent users of English in real life situations.</p> <p>Students exposed to varied cultural experiences through literature.</p> <p>Contributed to their overall personality development by improving their communicative and soft skills.</p>  |
| 8  |                    | <b>General English (G-3)</b>   | <p>Students exposed to some of the best samples of Indian English Poetry.</p> <p>The students understood how Indian English poetry expressed the ethos and culture of India.</p> <p>To make them understand creative uses of language in Indian English Poetry.</p> <p>Students introduced to some advanced areas of language study.</p> <p>Students prepared to go for detailed study and understanding of literature and language.</p> <p>Developed integrated view about language and literature among the students.</p> |
| 9  |                    | <b>Special Paper III (S-3)</b> | <p>Students introduced to the basics of novel as a literary form.</p> <p>Students exposed to the historical development and nature of novel.</p> <p>Students made aware of different types and aspects of novel</p> <p>Developed literary sensibility and sense of cultural diversity in students.</p> <p>To expose students to some of the best examples of novel.</p>   |
| 10 |                    | <b>Special Paper IV(S-4)</b>   | <p>Students introduced to the basics of Linguistics.</p> <p>Made them aware of the nature and historical development</p>  |

|  |  |  |  |
|--|--|--|--|
|  |  |  | <p>of Linguistic study.</p> <p>Made them familiar with the significant Phonology and related terms.</p> <p>Students encouraged use of Phonetics in day today life.</p> <p>Developed aptitude for Linguistic and grammar.</p> |
|--|--|--|--|

### Course Outcomes of Geography Dept

| S.N. | Subject                                       | Learning Outcomes  |
|------|---|--|
| 1    | FYBA  | <p>To introduce the students to the basic concepts in Physical Geography.</p> <p>To introduce latest concept in Physical Geography.</p> <p>To acquaint the students with the utility and application of Physical Geography in different regions and environment.</p> <p>To make the students aware of the need of protection and conservation of different landforms.</p>  |
| 2    | SYBA  | <p>To enable the students to use various Projections and Cartographic Techniques.</p> <p>To acquaint the students with basic of Statistical data.</p> <p>To acquaint the students with the principles of surveying, its importance and utility in the geographical study.</p>  |
| 4    | SYBA Special Paper 1                          | <p>To introduce the students to the basic principles and concepts in Economic Geography.</p> <p>To acquaint the students with the applications of Economic Geography in different areas and development.</p> <p>The main aim is to integrate the various factors of economic development and to acquaint the students about this dynamic aspect of economic geography.</p> |
| 5    | Gg. 301: Techniques of Spatial Analysis (S-4) | <p>To Introduce the Students with SOI Toposheets and to acquire the Knowledge of Toposheet Reading/Interpretation.</p> <p>To familiarize the students with the weather instruments and their applications in Geographical phenomena.</p> <p>To acquaint the students with IMD weather maps and to gain the knowledge of weather map Reading / interpretation.</p>          |

|   |   |   |
|---|---|---|
|   |   | <p>To train the students in elementary statistics as an essential part of geography.</p> <p>To awareness about GIS among the students.</p>  |
| 6 | Gg.: 310 Regional Geography of India (G-3)        | <p>To acquaint the students with geography of our Nation.</p> <p>To make the student aware of the magnitude of problems and Prospects at National level.</p> <p>To help the students to understand the inter relationship between the subject and the society.</p> <p>To help the students to understand the recent trends in regional studies.</p> |
| 7 | Gg-320: Population and Settlement Geography (S-3) | <p>To provide an understanding of spatial and structural dimensions of population</p> <p>To familiarizing the students with global and regional level Problems.</p> <p>To acquaint the students with the spatial, political and structural characteristics of human settlement under varied environmental Conditions.</p>                           |

### Course Outcomes of Economics Dept

| Sr. No | Subject - BA    | Subject Code | Course Outcomes   |
|--------|-----------------|--------------|---|
| 1.     | Indian Economy  | EC-1157      | Teach the basic concept of developing & developed countries |
|        |                 |              | increase in GDP after independent                           |
|        |                 |              | Explain the theory of population                            |
| 2.     | Micro Economics | EC-2158      | Teach the tools of Micro Economics                          |
|        |                 |              | Understand the concept of Elasticity of Demand              |
|        |                 |              | Explain & present the theory of wages                       |
| 3.     | Macro Economics | EC-2159      | understand the concept of Macro Economics & policies        |
|        |                 |              | Explain & presentation of employment theory                 |
| 4.     | Modern Banking  | EC-2157      | Teach the fundamental principal of Banking                  |
|        |                 |              | understand the process of credit creation of Banks          |

|               |                                 |                     |   |
|---------------|---------------------------------|---------------------|---|
|               |                                 |                     | Explain & presentation of SLR & CRR                                 |
| 5.            | International Economics         | EC-3158             | study the international policies                                    |
|               |                                 |                     | Increase in foreign investment                                      |
|               |                                 |                     | understand the concept of BRICS                                     |
|               |                                 |                     | Teach the various types of international organization               |
| 6.            | Public Finance                  | EC-3159             | Teach the concept of Private Finance & Public Finance               |
|               |                                 |                     | Explain the types of Tax & Public expenditure                       |
|               |                                 |                     | Explain & presentation of GST in India                              |
| 7.            | Economic Development & Planning | EC-3157             | Teach the concept of economic development & Planning                |
|               |                                 |                     | understand the different types of developmental theories            |
| <b>Sr. No</b> | <b>Subject B.Com</b>            | <b>Subject Code</b> | <b>Course Outcomes</b>  |
| 8.            | Business Economics(Micro)       | EC-1123             | Teach the concept of Micro Economics & Macro Economics              |
|               |                                 |                     | Explain the types of elasticity of demand & wages theory            |
| 9.            | Business Economics(Macro)       | EC-2133             | understand the difference between Micro Economics & Macro Economics |
|               |                                 |                     | understand techniques & diagrams related to employment theory       |
| 10.           | International Economics         | EC-3143             | Teach the concept of International Economics                        |
|               |                                 |                     | learn the basic concept of FDI,BRICS,NAFTA,SAFTA etc.               |
|               |                                 |                     | Explain the various Foreign Trade Policies                          |

## Course Outcomes of Commerce Dept

| Class     | Subject Name                        | Learning Outcome  |
|-----------|-------------------------------------|---|
| F.Y.B.Com | Financial Accounting.               | <p>To impart the knowledge of various accounting concepts</p> <p>To instill the knowledge about accounting procedures, methods and techniques.</p> <p>To acquaint them with practical approach to accounts writing by using software package.</p>   |
|           | Business Economics (Micro)          | <p>To expose Students of Commerce to basic micro economic concepts and inculcate an analytical approach to the subject matter.</p> <p>To stimulate the student interest by showing the relevance and use of various economic theories.</p> <p>To apply economic reasoning to problems of business.</p>  |
|           | Business Mathematics and Statistics | <p>To prepare for competitive examinations</p> <p>To understand the concept of Simple interest, compound interest and the concept of EMI.</p> <p>To understand the concept of shares and to calculate Dividend</p> <p>To understand the concept of population and sample.</p> <p>To use frequency distribution to make decision.</p> <p>To understand and to calculate various types of averages and variations.</p> <p>To understand the concept and application of profit and loss in business.</p> <p>To solve LPP to maximize the profit and to minimize the cost.</p> <p>To use correlation and regression analysis to estimate the relationship between two variables.</p> <p>To understand the concept and techniques of different types of index numbers.</p> |

|  |   |   |
|--|---|---|
|  | Organizational Skill Development.       | <p>To orient the students towards the concept of Organization and Modern Office.</p> <p>To acquaint the students with the role of and Functions of Office Manager.</p> <p>To develop the insights regarding Organizational Skills for Office Managers.</p> <p>To know the functioning of Modern office appliances equipment and e- format records</p>   |
|  | Banking and Finance                     | <p>1. To acquaint the students with the fundamentals of banking. 2. To develop the capability of students for knowing banking concepts and operations.</p> <p>To make the students aware of banking business and practices.</p> <p>To give thorough knowledge of banking operations.</p> <p>To enlighten the students regarding the new concepts introduced in the banking system</p>   |
|  | Marketing and Salesmanship              | <p>To create awareness about market and marketing.</p> <p>To establish link between commerce/Business and marketing.</p>  |
|  | Consumer Protection and Business Ethics | <p>To acquaint the students with consumer and consumer movement.</p> <p>To make the students aware about consumer rights, duties and mechanism for resolving their disputes.</p> <p>To make students aware about role of united nations and consumers' associations in protection of consumers.</p> <p>To make the students aware about laws relating to consumers.</p> <p>To acquaint the students with role of Business Ethics in various functional areas.</p> |
|  | Tax Procedure and Practices             | <p>To get introduced to the Indian Tax system</p> <p>To learn the basics of Tax procedure</p> <p>To study various tax practices</p> <p>To learn the use of computers in the Tax procedure and</p>   |

|           |                            |   |
|-----------|----------------------------|---|
|           |                            | practices   |
| S.Y.B.Com | Business Communication     | <p>To understand the concept, process and importance of communication.</p> <p>To develop awareness regarding new trends in business communication.</p> <p>To provide knowledge of various media of communication. 4. To develop business communication skills through the application and exercises.</p>                                  |
|           | Corporate Accounting       | <p>To make aware the students about the conceptual aspect of corporate accounting</p> <p>To enable the students to develop skills for Computerized Accounting</p> <p>3. To enable the students to develop skills about accounting standards</p>   |
|           | Business Economics (Macro) | <p>The objective of the course is to familiarize the students the basic concept of Macro Economics and application.</p> <p>To Study the behavior of the economy as a whole.</p> <p>To Study the relationship among broad aggregates.</p> <p>To apply economic reasoning to problems of the economy.</p>                                   |
|           | Business Management        | <p>To provide basic knowledge &amp; understanding about business management concept.</p> <p>To provide an understanding about various functions of management.</p>  |
|           | Elements of Company Law.   | <p>To impart students with the knowledge of fundamentals of Company Law.</p> <p>To update the knowledge of provisions of the Companies Act of 2013.</p> <p>To apprise the students of new concepts involving in company law regime.</p> <p>To acquaint the students with the duties and responsibilities of Key Managerial Personnel.</p> |

|           |   |  |
|-----------|---|--|
|           |   | To impart students the provisions and procedures under Company law.  |
|           | Business Administration<br>Special Paper I      | To provide basic knowledge about various forms of business organizations<br>To acquaint the students about business environment and its implications thereon.<br>To aware them with the recent trends in business                    |
|           | Cost and Works Accounting<br>Special Paper I    | To Impart The Knowledge Of :<br>Basic Cost concepts.<br>Elements of cost.<br>Ascertainment of Material and Labour Cost.  |
|           | Income Tax Provisions & Procedure of Income Tax | 1) To gain provisional and procedural knowledge about Income Tax Law in force for relevant accounting year, 2)<br>To provide an Insight in to practical aspects and procedural aspects for filling tax returns for various Assesses. |
| T.Y.B.Com | Mercantile Law                                  | To acquaint students with the basic concepts, terms & provisions of Mercantile and Business Laws.<br>To develop the awareness among the students regarding these laws affecting business, trade and commerce.                        |
|           | Advanced Accounting.                            | To impart the knowledge of various accounting concepts.<br>To instill the knowledge about accounting procedures, methods and techniques.<br>To acquaint them with practical approach to accounts writing by using software package.  |
|           | International Economics                         | To study the theories of International Trade.<br>To highlight the trends and challenges faced by nations in a challenging global environment.  |

|  |   |   |
|--|---|---|
|  | Auditing & Taxation                             | <p>To acquaint themselves about the concept and principles of Auditing, Audit process, Assurance Standards, Tax Audit, and Audit of computerized Systems.</p> <p>To get knowledge about preparation of Audit report.</p> <p>To understand the basic concepts and to acquire knowledge about Computation of Income, Submission of Income Tax Return, Advance Tax, and Tax deducted at Source, Tax Collection Authorities under the Income Tax Act, 1961.</p> |
|  | Business Administration<br>Special Paper II     | 1. To acquaint the students with basic concepts & functions of HRD and nature of Marketing functions of a business enterprise.  |
|  | Cost and Works Accounting<br>Special Paper II   | <p>To provide Knowledge about the concepts and principles application of Overheads</p> <p>To provide also understanding various methods of costing and their applications.</p>  |
|  | Business Administration<br>Special Paper III    | 1. To acquaint the students with the basic concepts in finance and production functions of a business enterprise.   |
|  | Cost and Works Accounting<br>Special Paper III  | <p>To impart knowledge regarding costing techniques.</p> <p>To provide training as regards concepts, procedures and legal Provisions of cost audit.</p>   |
|  | Central Excise and Custom Duty                  | <p>To introduce the Constitutional background and laws relating to Excise Act.</p> <p>To study the scope of Levy, Collection &amp; Exemptions from Excise Duty Goods</p> <p>To understand the various definitions of Central Excise Act.</p>  |
|  | Entrepreneurship Development and Project Report | <p>To create awareness about self-employment and motivate the students to go for self employment.</p> <p>To study entrepreneurship concepts and their applicability.</p> <p>To expose the students to the practical world of business.</p>  |

## Course Outcomes of Physics Dept

| Class    | Course / Paper  | Learning Outcomes  |
|----------|---|--|
| F.Y.B.Sc | <b>Paper-I :</b><br><b>Section I :</b><br>Mechanics                     | <p>1.To demonstrate an understanding of Newton's laws and applying them in calculations of the motion of simple systems.</p> <p>2.To use the free body diagrams to analyze the forces on the object.</p> <p>3.To understand the concepts of energy, work, power, the concepts of conservation of energy, elasticity, surface tension and viscosity.</p> <p>4.To demonstrate quantitative problem solving skills in all the topics covered.</p>   |
|          | <b>Paper – I</b><br><b>Section II :</b><br>Heat and<br>Thermodynamics   | <p>1.To describe the properties of and relationships between the thermodynamic properties of a pure substance.</p> <p>2.To describe the ideal gas equation and its limitations.</p> <p>3.To describe the real gas equation.</p> <p>4.To apply the laws of thermodynamics to formulate the relations necessary to analyze a thermodynamic process.</p>  |
|          |   | <p>5.To analyze the heat engines and calculate thermal efficiency. 6.To analyze the refrigerators, heat pumps and calculate coefficient of performance.</p> <p>7.To understand the types of thermometers and their usage.</p>  |
|          | <b>Paper II : Section I</b><br>: Physics Principles<br>and Applications | <p>1.To understand /Demonstrate the concept of the electromagnetic waves and its spectrum.</p> <p>the sources of electromagnetic waves and applications.</p> <p>the general structure of atom, spectrum of hydrogen atom.</p> <p>the atomic excitation and LASER principles.</p> <p>the bonding mechanism in molecules and rotational and vibrational energy levels of diatomic molecules.</p> <p>2. To demonstrate quantitative problem solving skills in all the topics covered.</p> |

|                 |   |   |
|-----------------|---|---|
|                 | <p><b>Paper II : Section II</b><br/>Electromagnetics</p>  | <p>To understand /demonstrate the concept of the electric force, field and potential, and related concepts, for stationary charges.</p> <p>the dielectric and effect on dielectric due to electric field.</p> <p>the magnetic field for steady currents using Biot-Savart and Ampere's Circuital law.</p> <p>the magnetization of materials.</p> <p>To calculate electrostatic field and potential of simple charge distributions using Coulomb's law and Gauss's law.</p> <p>To demonstrate quantitative problem solving skills in all the topics covered.</p>   |
|                 | <p><b>Paper III :</b><br/>Practical Course</p>  | <p>To acquire technical and manipulative skills in using laboratory equipment, tools, and materials.</p> <p>To demonstrate an ability to collect data through observation and/or experimentation and interpreting data.</p> <p>To demonstrate an understanding of laboratory procedures including safety, and scientific methods.</p> <p>To demonstrate a deeper understanding of abstract concepts and theories gained by experiencing and visualizing them as authentic phenomena.</p> <p>To acquire the complementary skills of collaborative learning and teamwork in laboratory settings.</p>                          |
| <p>S.Y.B.Sc</p> | <p><b>Semester - I</b><br/><b>Paper-I : PH211 :</b><br/>Mathematical<br/>Methods in Physics<br/>- I</p> | <p>Understand the complex algebra useful in physics courses</p> <p>Understand the concept of partial differentiation.</p> <p>Understand the role of partial differential equations</p> <p>Understand vector algebra</p> <p>Understand the singular points of differential equation</p> <hr/> <p><b>Semester - I</b><br/><b>Paper-II : PH212:</b><br/>Electronics - I</p> <p>To apply laws of electrical circuits to different circuits.</p> <p>To understand the relations in electricity</p> <p>To understand the properties and working of transistors.</p> <p>To understand the functions of operational amplifiers.</p> |

|  |   |   |
|--|---|---|
|  |   | <p>To design circuits using transistors and operational amplifiers.</p> <p>To understand the Boolean algebra and logic circuits.</p>  |
|  | <p><b>Semester - II</b></p> <p><b>Paper – I</b></p> <p><b>PH221:</b></p> <p>Oscillations,<br/>Waves and Sound</p> | <p>To understand the physics and mathematics of oscillations.</p> <p>To solve the equations of motion for simple harmonic, damped, and forced oscillators and understand their physical content in a variety of applications along with their problems.</p> <p>To describe oscillatory motion with graphs and equations, and use these descriptions to solve problems of oscillatory motion.</p> <p>To explain oscillation in terms of energy exchange, giving various examples.</p> <p>To understand the mathematical description of travelling and standing waves and the one-dimensional classical wave equation and solutions to it.</p> <p>To explain the Doppler effect, and predict in qualitative terms the frequency change that will occur for a stationary and a moving observer.</p> <p>To define the decibel scale qualitatively, and give examples of sounds at various levels.</p> <p>To explain in qualitative terms how frequency, amplitude, and wave shape affect the pitch, intensity, and quality of tones produced by musical instruments</p> |
|  | <p><b>Semester - II</b></p> <p><b>Paper – II</b></p> <p><b>PH222:</b></p> <p>OPTICS</p>                           | <p>To understand to acquire the basic concepts of wave optics.</p> <p>To describe how light can constructively and destructively interfere</p> <p>To explain why a light beam spreads out after passing through an aperture</p> <p>To summarize the polarization characteristics of electromagnetic waves</p> <p>To appreciate the operation of many modern optical devices that utilize wave optics</p> <p>To understand optical phenomena such as polarization, birefringence, interference and diffraction in terms of the wave model and to analyze simple examples of interference and</p>   |

|                  |   |   |
|------------------|---|---|
|                  |   | <p>diffraction phenomena.</p> <p>To be familiar with a range of equipment used in modern optics.</p>  |
|                  | <p><b>PH223:</b><br/>Practical Course</p>   | <p>To use various instruments and equipment.</p> <p>To design experiments to test a hypothesis and/or determine the value of an unknown quantity.</p> <p>To investigate the theoretical background to an experiment.</p> <p>To set up experimental equipment to implement an experimental approach and to analyze data, plot appropriate graphs and reach conclusions from your data analysis.</p> <p>To work in a group to plan, implement and report on a project/experiment.</p> |
| <b>T.Y.B.Sc.</b> | <b>Semester - III</b>   | To understand the Cartesian, spherical polar cylindrical and  |
|                  | <p><b>Paper-I : PH331 :</b><br/>Mathematical<br/>Methods in Physics<br/>- II</p>    | <p>General curvilinear co ordinate system.</p> <p>To understand the partial differential equation method of separation of variables frobenius method for powerseries solution.</p> <p>To understand the special function legendre hermite and Bessel function with its generating function.</p> <p>To understand the Newtonian relativity, Michelson Morley experiment and concept of special theory of relativity.</p>   |
|                  | <p><b>Semester - III</b><br/><b>Paper-II : PH332 :</b><br/>Solid State Physics</p>  | <p>Understand the properties of metals on the basis of the free and nearly-free electron gas models.</p> <p>Understand the magnetic properties of condensed matter.</p> <p>Understand the optical properties of solids and the relation to their electronic properties.</p>   |
|                  | <p><b>Semester - III</b><br/><b>Paper-III : PH333 :</b><br/>Classical Mechanics</p> | <p>Understand the Newtonian mechanics and solve the problem related the motion of system of particles.</p> <p>Understand central force and their features Kepler's laws of planetary motion.</p> <p>Understand the scattering of particles with laboratory and center of mass system.</p> <p>Understand the Hamiltonian formulations.</p> <p>Understand the passion bracket.</p>  |

|  |  |
|--|--|
| <p><b>Semester - III</b></p> <p><b>Paper-IV : PH334</b></p> <p>:<br/>Atomic and<br/>Molecular Physics</p>            | <p>Understand the atomic structure.</p> <p>Understand the Pauli's exclusive principle and spin orbit interaction.</p> <p>Understand the concept of Zeeman effect, Raman effect.</p> <p>Understand the concept of X rays spectroscopy.</p> <p>Understand the types of molecular spectroscopy.</p>   |
| <p><b>Semester - III</b></p> <p><b>Paper-V : PH335</b></p> <p>Computational<br/>Physics</p>                          | <p>To identify modern programming methods and describe the extent and limitations of computational methods in physics.</p> <p>To identify and describe the characteristics of various numerical methods.</p> <p>To formulate and computationally solve a selection of problems in physics.</p> <p>To use the tools, methodologies, language and conventions of physics to test and communicate ideas and explanations.</p>   |
| <p><b>Semester - III</b></p> <p><b>Paper-VI : PH336</b></p> <p>:<br/>(Optional)<br/>Renewable Energy<br/>Sources</p> | <p>To describe the various renewable energy sources and the possible conversion paths to a useful form of energy.</p> <p>To study the different Characteristics of Sun.</p> <p>To explain the principles that underlie the ability of various natural phenomena to deliver solar energy and to study the technologies that are used to harness the power of solar energy.</p> <p>To discuss the positive and negative aspects of solar energy in relation to natural and human aspects of the environment.</p> <p>To describe the working principle of photovoltaic effect in solar cell and to discuss its use as the integration of intermittent</p> |
|  | <p>renewable electricity into the grid system through laboratory exercises and its efficiency.</p> <p>To study the wind energy and its power, energy production and the effect of the blade design.</p> <p>To describe how biomass is used as a source of energy in providing energy and in producing alternative fuels.</p>   |
| <p><b>Semester - IV</b></p> <p><b>Paper-I :</b><br/><b>PH341 :</b><br/>Classical</p>                                 | <p>To study the formulation of Maxwell's equations.</p> <p>To use the Lorentz transformation to transform fields and sources from one inertial frame to another.</p> <p>To illustrate the boundary value problems of electrodynamics.</p>  |

|   |   |
|---|---|
| Electrodynamics   | <p>To derive detailed expressions for the nature of electromagnetic power emitted by various sources.</p> <p>To apply Maxwell's equations to solve problems in classical electrodynamics.</p> <p>To understand transport of energy and Poynting vector.</p>   |
| <p><b>Semester - IV</b></p> <p><b>Paper-II :</b></p> <p><b>PH342 :</b></p> <p>Quantum Mechanics</p>                       | <p>To study the historical aspects of development of quantum mechanics.</p> <p>To understand and explain the differences between classical and quantum mechanics.</p> <p>To understand the idea of wave function.</p> <p>To understand the uncertainty relations.</p> <p>To solve Schroedinger equation for simple potentials.</p> <p>To study, identify and relate the eigenvalue problems for energy, momentum, angular momentum and central potentials with the idea of spin.</p>  |
| <p><b>Semester - IV</b></p> <p><b>Paper-III :</b></p> <p><b>PH343 :</b></p> <p>Thermodynamics and Statistical Physics</p> | <p>To identify and describe the statistical nature of concepts and laws in thermodynamics, in particular: entropy, temperature, chemical potential, Free energies, partition functions.</p> <p>To use the statistical physics methods, such as Boltzmann distribution, Gibbs distribution, Fermi-Dirac and Bose-Einstein distributions to solve problems in some physical systems.</p> <p>To apply the concepts and principles of black-body radiation to analyze radiation phenomena in thermodynamic systems.</p> <p>To apply the concepts and laws of thermodynamics to solve problems in thermodynamic systems such as gases, heat engines and refrigerators etc.</p> <p>To analyze phase equilibrium condition and identify types of phase transitions of physical systems.</p> <p>To design, set up, and carry out experiments; analyze data recognizing and accounting for errors; and compare with theoretical predictions.</p> |
| <p><b>Semester - IV</b></p> <p><b>Paper-IV :</b></p>  | <p>To describe the properties and structure of stable nuclei.</p> <p>To understand the properties of the nuclear force properties and their</p>   |

|  |  |  |
|--|--|--|
|  | <b>PH343 :</b><br>Nuclear Physics  | theoretical descriptions.<br>To the constraints on a quantum model of the nucleus.   |
|  |  | To understand the shell model and be able to explain radioactive processes.<br>To study beta decays and its properties for nuclear reactions.<br>To demonstrate quantitative problem solving skills in all the topics covered.   |
|  | <b>Semester - IV</b><br><b>Paper-V :</b><br><b>PH345 :</b><br>Electronics - II                     | To understand the basic working principles of different semiconductor diodes.<br>To classify the different types of amplifiers with reference to their mode of operation, efficiency.<br>To study the basic working principle and characteristics of JFETs, MOSFETs and their applications.<br>To study the different applications of OPAMP and Timer circuits with illustrative problems.<br>To study the special ICs designed for regulator power supply and their characteristics.<br>To the different combinational and sequential logic circuits and their applications.  |
|  | <b>Semester - IV</b><br><b>Paper-VI :</b><br><b>PH346 :</b><br><b>Optional</b><br>Microcontrollers | To understand the fundamentals of microcontroller systems .<br>To study the architecture of Microcontroller 8051.<br>To study the programming model, working principle of assembler; assembler directives.<br>To use instruction set of assembly languages of 8051microcontroller in developing programs.<br>To interface to external memory, use of stack in subroutine calls and interrupt services, access of built-in I/O ports, timers and counters.<br>To study I/O Interfacing of the different applications like keyboard scanning, display multiplexing, LCD controllers, interface of IC's analogue and digital conversion ( ADC / DAC), serial interface standards RS-232 in communication systems. |
|  | <b>PH347:</b>  | To design experiments in General Physics to test a hypothesis and/or   |

|   |  |   |
|---|--|---|
| Laboratory Course -I                            |  | <p>to determine the value of an unknown quantity.</p> <p>To investigate the theoretical background to an experiment.</p> <p>To set up experimental equipment to implement an experimental approach and to analyze data, plot appropriate graphs and reach conclusions from your data analysis.</p> <p>To work in a group to plan, implement and report on a project/experiment.</p>   |
| PH348:<br>Laboratory Course -II                 |  | <p>To design experiments in Applied Physics to test a hypothesis and/or determine the value of an unknown quantity.</p> <p>To set up experimental equipment to implement an experimental approach and to analyze data, plot appropriate graphs and reach conclusions from your data analysis.</p> <p>To formulate and computationally solve a selection of problems</p>   |
|   |  | <p>in physics using C programming.</p> <p>To demonstrate the interfacing techniques for General Physics experiments using Phoenix / Pinnacle Microcontroller Software.</p>  |
| PH349:<br>Laboratory Course -III (Project Work) |  | <p>To develop a set of skills pertaining to the project work with necessary involvement of student under the proper guidance.</p> <p>To develop a clear and strong link with the principles of basic physics and/or their applications through project work.</p> <p>To understand the theme chosen should be such that it promotes better understanding of physics concepts and brings out the creativity by that student.</p> <p>To evaluate the project work periodically with experimental work and data/observations.</p> <p>To present the final report for the viva voce with necessary references and which is clearly referred to and acknowledged by the guide.</p> <p>To face the viva voce at least for 30 minutes with proper presentation of experimental data/observations, results and conclusion.</p> |

## Course Outcomes of Chemistry Dept B.Sc (Chemistry)

| S.N. | Subject   | Learning Outcome  |
|------|---|---|
| 1    | Paper I Physical and Inorganic Chemistry (term- I)  | To know the meaning of terms catalyst, catalysis, positive catalysis and negative Catalysis.<br>Mathematical background required for derivations & problem solving.<br>Understand the concept of oxidation, reduction & mole concept. |
| 2    | PAPER – II Organic & Inorganic Chemistry ( term-I)  | Drawing of organic molecules & arrow pushing concept.<br>Skeleton of long form of periodic table.   |
| 3    | Paper I Physical and Inorganic Chemistry (term- II) | Identify the quantum numbers of any given electron in an atom.<br>Fundamental Concepts of theories of overlapping of atomic orbitals.<br>Natural changes are understood with the help of laws of thermodynamics.                      |
| 4    | PAPER – II Organic & Inorganic Chemistry ( term-II) | Structure, nomenclature, Preparation & reactions of organic Compound.<br>To write electronic configuration of any element.  |
| 5    | Chemistry Practical                                 | Basic principles in qualitative analysis<br>Characteristic tests for different functional groups  |
| 6    | CH-211 Physical and Analytical Chemistry            | Concepts of kinetics, terms used, rate laws, types of order. To solve problem.<br>Understand about Photochemistry.<br>To introduce basics of Analytical Chemistry.  |
| 7    | CH-212 Organic & Inorganic Chemistry                | To study chiral molecules. Identify chiral centre in the given organic compound.<br>Define & classify heterocyclic compound. To differentiate between   |

|    |  |   |
|----|--|---|
|    |  | ores & minerals   |
| 8  | CH-221<br>Physical and<br>Analytical Chemistry | To Know free energy concepts types & its variations.<br>To know different to express concentrations of the solutions.   |
| 9  | CH-222<br>Organic & Inorganic<br>Chemistry     | To understand the concepts of different reagents used in the one type<br>of conversion.<br>To know different biomolecules.<br>To understand multiple bonding due to carbonyl ligands.                                 |
| 10 | CH-223<br>Practical Course in<br>Chemistry     | Student should know -Importance of Analytical chemistry.<br>Basic principles in qualitative analysis & Group reagent and<br>precipitating agent.  |
| 11 | CH-331: Physical<br>Chemistry                  | Students are expected to know- Expression for rate constant k for third<br>order reaction, Experimental determination of conductance.<br>Rotational / Microwave spectroscopy & Derivation of phase rule.              |
| 12 | CH-332:<br>Inorganic Chemistry                 | A student should Know the meaning of various terms involved in<br>coordination chemistry.<br>To study the coordination compound   |
| 13 | CH-333:<br>Organic Chemistry                   | Students should know –Definition and types of organic acid and base.<br>To draw different types of disubstituted cyclohexane in Chair form.<br>Different types of carbon-carbon unsaturated compounds                 |
| 14 | CH-334:<br>Analytical<br>Chemistry             | Student should know, Principles of common ion effect and solubility<br>product. Methods of thermo gravimetric analysis. Principles of<br>Spectrophotometric analysis and properties of electromagnetic<br>radiations. |
| 15 | CH-335:<br>Industrial<br>Chemistry             | Student should know :<br>Knowledge of various industrial aspects.<br>Fuels and eco-friendly fuels, use of solar energy etc.   |

|    |   |   |
|----|---|---|
|    |   | Learn importance of various industries.   |
| 16 | CH-336-E<br>Agriculture<br>Chemistry      | Students should know –<br>Know the role of agriculture chemistry and its potential. Understand basic concept of soil, properties of soil & its classification on the basis of pH. Have the knowledge of various pesticides, insecticides, fungicides and herbicides |
| 17 | CH-341:<br>Physical Chemistry             | Students are expected to know- Construction, representation, working and limitation of various Electrodes. Nuclear energy & its application.  |
| 18 | CH-342:<br>Inorganic Chemistry            | A student should know:<br>The meaning of term f-block elements, Inner transition elements, lanthanides, actinides. The meaning of metal & semiconductor.<br>Know the nature of solids.  |
| 19 | CH-343:<br>Organic Chemistry              | Students should know –<br>Definition and formation of carbanions. Meaning of terms Disconnection, Synthons, Synthetic equivalence, Functional Group, Interconversion, Target Molecule.  |
| 20 | CH-344:<br>Analytical<br>Chemistry        | A student should know,<br>i) Principles of solvent extraction, chromatographic methods, GSC and GLC analysis, electrophoresis , HPLC etc.   |
| 21 | CH-345:<br>Industrial<br>Chemistry        | Students should know : Basics of polymer, Importance of sugar industry, Basic requirement of fermentation process, Students should know about various cosmetics.  |
| 22 | CH-346-E<br>Dairy Chemistry               | Students should know: Knowing importance of the subject from the point of rural economy. Knowing the composition of milk, its food & nutritive value. Knowing various milk products, their composition, manufacture and uses.                                       |
| 23 | CH-347: Physical<br>Chemistry Practicals  | A student should know -<br>To understand the concept of chemical kinetics, To understand the applications of Conductometer, Potentiometer, pH-meter, Colorimeter.   |
| 24 | CH-348: Inorganic<br>Chemistry Practicals | A student should know -<br>Basic principles in qualitative analysis Separation for basic radicals   |

|    |                                      |   |
|----|--------------------------------------|---|
| 25 | CH-349: Organic Chemistry Practicals | Perform the complete chemical analysis of the given organic compound and should be able-<br>To recognize the type of compound.<br>Follow the progress of the reaction by using TLC technique.<br>Acquire skill of crystallization, record correct m. p. / b. p. |
|----|--------------------------------------|---|

### Course Outcomes of Botany Dept

| S.N | Class        | Subject   | Learning Outcomes  |
|-----|--------------|---|--|
| 1.  | F. Y. B. Sc. | Paper – I<br>Fundamentals of Botany-                          | To know the plant diversity<br>To know the variation of plant life at all levels of biological organizations   |
| 2.  | F. Y. B. Sc. | Paper – II<br>Industrial Botany                               | To know the properties of plants at industrial level<br>To bring plant resources into various industrial finished final products   |
| 3.  | S. Y. B. Sc. | Sem. – I Paper – I<br>Taxonomy of Angiosperms Plant Community | To develop skills of correct Identification of plant species<br>To insite basic principles of Taxonomy To understand the evolutionary relationship between plant species<br>To inculcate habit of understanding of surrounding environment |
| 4.  | S. Y. B. Sc. | Sem. – I Paper – II<br>Plant Physiology                       | To understand physiological processes in plants<br>To know various functions performed by plants   |
| 5.  | S. Y. B. Sc. | Sem. – II<br>Paper – I Structural botany                      | To know internal structure of plants To study different types of internal organization of plant body<br>To know the various developmental stages in plants   |
| 6.  | S. Y. B. Sc. | Sem. – II<br>Paper – II<br>Plant Biotechnology                | To know biotechnological process,<br>use of various plant resources at commercial level  |

## Course Outcomes of Zoology Dept

| S.N |                  | Subject                                    | Learning Outcomes  |
|-----|------------------|--|--|
| 1.  | <b>Course 1:</b> | <b>Animal Diversity I, II</b>              | To study rules for taxonomy<br>To study classification of non chordates and chordates with examples                    |
| 2.  | <b>Course 2:</b> | <b>Cell Biology</b>                        | To study cell and its organelles<br>To study cell cycle and cell division  |
| 3.  | <b>Course 3:</b> | <b>Genetics</b>                            | To study genes and its importance in heredity and variation To study application of genetics for betterment of species |
| 4.  | <b>Course 4:</b> | <b>Applied Zoology</b>                     | To study useful organisms and their benefits to mankind  |
| 5.  | <b>Course 5:</b> | <b>Agriculture pests and their control</b> | To study Agriculture pests with respect to the economic loses they cause and their preventive and control measures.    |

## Course Outcomes of Microbiology Dept:

| Class     | Subject   | Learning Outcomes   |
|-----------|---|---|
| F.Y.B.Sc. | Theory Paper-I<br>Introduction to Microbiology      | To know the history and morphological characters of microorganisms.<br>To study the development of microbiology from 19 <sup>th</sup> -20 <sup>th</sup> century.<br>To study bacterial cytology |
|           | Theory Paper-II<br>Basic techniques in Microbiology | To study the microscopy and staining techniques. To study sterilization and disinfection.<br>To study cultivation and bacterial growth.   |

|                  |   |   |
|------------------|---|---|
|                  | Practical course based on Theory Paper-I and Theory Paper-II    | To study the Microscopy, Enumeration , Growth characters of microorganisms.<br>To study effect of environmental factors, identification of microorganisms.  |
| <b>S.Y.B.Sc.</b> | Sem.-I<br>Theory Paper-I<br>Bacterial systematic and physiology | To study the microbial physiology with different instruments.<br>To study bacterial physiology and different biochemical pathways.<br>To study the enzyme and effect of environmental parameters.                                   |
|                  | Sem.-I<br>Theory Paper-II<br>Industrial and soil microbiology   | To study Industrial microbiology and soil microbiology.   |
|                  | Sem.-II<br>Theory Paper-I Bacterial Genetics                    | To understanding DNA, RNA, Replication, Expression, Mutations and Reversions.<br>To study Plasmid Genetics.   |
|                  | Sem.-II<br>Theory Paper-II<br>Air and Water Microbiology        | To study the air microbiology. To study the water microbiology.   |
|                  | Practical course based on Theory Paper-I and Theory Paper-II    | To study Growth curve, Cell dimensions, Test of Potability of water.<br>To study biochemical characterization and identification of bacteria.<br>To study air flora and primary screening of industrially important microorganisms. |
|                  | <b>T.Y.B.Sc.</b>  | Sem.-III<br>Theory Paper-I<br>Medical Microbiology-I  |
|                  |   | To study the different bacterial pathogens.   |
|                  | Sem.-III<br>Theory Paper-II<br>Genetics and Molecular Biology-I | To study gene linkage, crossover and DNA replication.<br>To study the Transcription and Translation in Prokaryotes and Eukaryotes.  |

|  |  |
|--|--|
| Sem.-III<br>Theory Paper-III Enzymology                        | To study enzyme, Assays and enzyme purification. To study enzyme kinetics, molecular regulation and Immobilization of enzymes.   |
| Sem.-III<br>Theory Paper-IV Immunology-I                       | To study Immunity, Organs of Immune system, Innate Immunity, Antigen, Immunoglobulin.<br>To study Adaptive Immunity and Transplantation and Immunity.  |
| Sem.-III<br>Theory Paper-V Fermentation<br>Technology-I        | To study strain improvement, media optimization, sterilization of media.<br>To study scale up and scale down and principles and methods of downstream processing.<br>To study Quality assurance (QA) of fermentation product and fermentation economics.                                 |
| Sem.-III<br>Theory Paper-VI<br>Food and Dairy Microbiology     | To study dairy development in India, milk chemistry and constituents and microbiology of milk<br>To study preservation of milk by pasteurization and storage and microbial analysis of milk.<br>To study classification of food based on stability, food spoilage and food preservation. |
| Sem.-IV<br>Theory Paper-I<br>Medical Microbiology-II           | To study chemotherapy .<br>To study the different viral pathogens.<br>To study the different parasites and fungal pathogens.   |
| Sem.-IV<br>Theory Paper-II<br>Genetics and Molecular Biology-I | To study Gene transfer by Transformation, transduction and conjugation.<br>To study DNA Damage repair, Recombination and Tools of recombination.   |
| Sem.-IV<br>Theory Paper-III Metabolism                         | To study membrane transport, bioenergetics, biosynthesis and degradation.<br>To study bacterial photosynthesis.  |
| Sem.-IV<br>Theory Paper-IV Immunology-I                        | To study Major Histocompatibility complex, cytokines, antigen-antibody Interaction, Immunohematology.<br>To study Public health immunology, hypersensitivity.  |

|  |   |   |
|--|---|---|
|  | Sem.-IV<br>Theory Paper-V Fermentation<br>Technology-I                    | To study the solid state fermentation and submerged fermentation<br>To study large scale production of primary and secondary  |
|  |   | Metabolites, enzymes,,steroids,milk products, vaccines, immunesera and biomass based products.  |
|  | Sem.-IV<br>Theory Paper-VI<br>Agricultural and Environmental microbiology | To study the effect of microbes on agriculture and environment.   |
|  | Practical course –I Applied<br>Microbiology                               | To study laboratory scale fermentation and tests for milk and dairy products.<br>To study Isolation and identification of different plant pathogens , pesticide degraders lactic cultures.<br>To study Quality assurance tests.<br>To study biosynthesis of nanoparticles |
|  | Practical course –II<br>Biochemistry and Molecular<br>biology             | To study random sugar estimation and lipid profiling<br>To study enzyme kinetics<br>To study the protocols for plasmid isolation DNA isolation and transformation.<br>To study bacteriophages.  |
|  | Practical course –III<br>Diagnostic Microbiology and<br>Immunology        | To study immune hematology, agglutination test, immune precipitation and hemogram To study clinical microbiology<br>To study how to prepare survey for epidemiology.  |

## Mathematics Course Outcomes

| SR.NO. | SUBJECT                                   | LEARNING OUTCOMES   |
|--------|---|---|
| 1.     | (MTC-101)DISCRETE<br>MATHEMATICS          | <p>Student will understand idea of permutation and combination.</p> <p>Student will understand basic proof involving sets and function.</p> <p>Student will understand various types of tree and method for traversing tree.</p> <p>Student will understand Boolean algebra and truth table.</p> <p>Student improve their logic</p> |
| 2.     | (MTC-102)ALGEBRA AND<br>CALCULUS          | <p>Apply rule of limit to calculate limits.</p> <p>Student will understand find derivative of function.</p> <p>student will understand the fundamental theorem to calculate evaluate definite integral and to differentiate function definite as an integral</p> <p>use the derivative to find tangent line to curves</p>           |
| 3.     | (MTC-103) MATHEMATICS<br>PRACTICAL COURSE | <p>To better appreciate the variety of subjects m1 and m2.</p> <p>The course intents to help the students think logically and critically about mathematical information.</p> <p>We introduced to some existing idea in mathematics that comes from a wide variety to disciplines along with real world applications.</p>            |
| 4.     | (MTC-211) APPLIED ALGEBRA                 | <p>present basic concept of matrices and matrix algebra</p> <p>Present basic concept of vector space.</p> <p>Present concept of linear transformation.</p> <p>Present method of computing and using eigen value and eigen vector.</p>   |

|    |                                  |   |
|----|----------------------------------|---|
| 5. | (MTC-212) NUMERICAL ANALYSIS     | <p>Develop appropriate numerical method to approximate the function.</p> <p>Develop appropriate numerical method to solve a differential equation.</p> <p>Derive appropriate numerical method to evaluate a derivative at a value.</p> <p>Performed an error analysis for various numerical methods.</p> <p>Students apply these methods in various fields.</p> |
| 6. | (MTC-221) COMPUTATIONAL GEOMETRY | <p>An introductory course to computational geometry and its application.</p> <p>We discuss techniques needed in designing and analyzing efficient algorithm for problem in geometry.</p> <p>We develop idea geometric data structure e and motion planning.</p> <p>Student use these ideas in animation.</p>  |
| 7. | (MTC-222) OPERATIONAL RESEARCH   | <p>Identify and develop operational research models from the verbal description of the real system.</p> <p>Understand the mathematical tools that are needed to solve optimization problem.</p> <p>Develop a report that describes the model and solving techniques.</p> <p>Student use these ideas in various managerial problem.</p>                          |
| 8. | (MTC-223) PRACTICLE              | <p>To solve mathematical problem by using c-programme.</p> <p>Represent geometrical diagrams using scilab.</p> <p>Student can solve any mathematical problems by using scilab and c programing .</p> <p>iv student can interact with mathematics and Computer.</p>  |

|     |                        |  |
|-----|------------------------|--|
| 9.  | STATISTICAL METHODS-I  | <p>The fundamental purpose of statistics is to identify out a sample, results that are valid for entire population.</p> <p>Descriptive statistics allow an easy introduction to the theory to the probability.</p>   |
|     |                        | <p>at a preliminary stage the sample should be simplified through its representation in graphs and charts as precise as possible without losing to much information</p> <p>To develop logic of the student.</p> <p>Student can handle statistical models.</p>  |
| 10. | STATISTICAL METHODS-II | <p>Student will understand idea of permutation, combination and various counting.</p> <p>To motivate the use of statistical inferences in practical data analysis.</p> <p>To study elementary concepts and techniques in statistical methodology.</p> <p>To provide a introduction to subsequent statics courses .</p>   |
| 11. | STATISTICS PRACTICLE   | <p>The various design probabilities for a research project and the important consideration for observational studies and randomized the trials</p> <p>The types of the data generated in research studies.</p> <p>Particulars methods are appropriate and how to interpreted their results.</p> <p>the focus is mainly on interpretation and</p> <p>Understanding appropriate methodology.</p> |

## Course Outcomes of Computer science Dept

| S.N | Subject   | Learning Outcomes   |
|-----|---|---|
| 1.  | CS-101: Problem Solving Using Computers and 'C' Programming | To develop Problem Solving abilities using computers<br>To teach basic principles of programming<br>To develop skills for writing programs using 'C'  |
| 2.  | CS 102: File Organization and Fundamental of Databases      | To understand data processing using computers<br>To teach basic organization of data using files<br>To understand creations, manipulation and querying of data in databases   |
| 3.  | CS 211: Data Structures Using 'C'                           | Students will learn the systematic way of solving problem and understand the different methods of organizing large amount of data.<br>They will learn to efficiently implement the different data structures and implement solutions for specific problems  |
| 4.  | CS 221: Object Oriented Concepts using C++                  | The students acquire an understanding of basic object oriented concepts and the issues involved in effective class design.<br>They are able to write C++ programs that use object oriented concepts   |
| 5.  | CS-212: Relational Database Management System               | To teach fundamental concepts of RDBMS (PL/PgSQL)<br>To teach principles of databases<br>To teach database management operations<br>To teach data security and its importance<br>To teach client server architecture  |
| 6.  | CS-222: Software Engineering                                | Design and implement Data structures and related algorithms<br>Understand several ways of solving the same problem.   |
| 7.  | CS-331: System Programming                                  | To understand the design structure of a simple editor.<br>To understand the design structure of Assembler and macro processor for an hypothetical simulated computer.<br>To understand the working of linkers and loaders and other development utilities.<br>To understand Complexity of Operating system as a software. |

|     |  |  |
|-----|--|--|
| 8.  | CS-332: Theoretical Computer Science         | <p>To have an understanding of finite state and pushdown automata.</p> <p>To have a knowledge of regular languages and context free languages.</p> <p>To know the relation between regular language, context free language and corresponding recognizers.</p> <p>To study the Turing machine and classes of problems.</p>  |
| 9.  | CS-333: Computer Networks-I                  | <p>Understand different types of networks, various topologies and application of networks based on different parameters.</p> <p>Understand types of addresses, data communication.</p> <p>Understand the concept of networking models, protocols, functionality of each layer used for data communication.</p> <p>Learn basic networking hardware and tools.</p>           |
| 10. | CS-334: Internet Programming I               | <p>Learn Core-PHP, Server Side Scripting Language</p> <p>Learn PHP-Database handling.</p>  |
| 11. | CS-335: Programming in Java-I                | <p>To learn Object Oriented Programming language</p> <p>To handle abnormal termination of a program using exception handling</p> <p>To create flat files</p> <p>To design User Interface using Swing and AWT</p>   |
| 12. | CS-336: Object Oriented Software Engineering | <p>Understanding importance of Object Orientation in Software engineering</p> <p>Understand the components of Unified Modeling Language</p> <p>Understand techniques and diagrams related to structural modeling</p> <p>Understand techniques and diagrams related to behavioral modeling</p> <p>Understand techniques of Object Oriented analysis, design and testing</p> |

|     |                                 |   |
|-----|---------------------------------|---|
| 13. | CS-341: Operating System        | <p>To understand design issues related to process management and various related algorithms</p> <p>To understand design issues related to memory management and various related algorithms</p> <p>To understand design issues related to File management and various related algorithms</p>   |
| 14. | CS-342: Compiler Construction   | <p>To understand design issues of a lexical analyzer and use of Lex tool</p> <p>To understand design issues of a parser and use of Yacc tool</p> <p>To understand issues related to memory allocation</p> <p>To understand and design code generation schemes</p>   |
| 15. | CS-343: Computer Networks-II    | <p>Basic networking concepts.</p> <p>Understand wired and wireless networks, its types, functionality of layer.</p> <p>Understand importance of network security and cryptography.</p>  |
| 16. | CS-344: Internet Programming II | <p>Learn different technologies used at client Side Scripting Language</p> <p>Learn XML,CSS and XML parsers.</p> <p>One PHP framework for effective design of web application.</p> <p>Learn JavaScript to program the behavior of web pages.</p> <p>Learn AJAX to make our application more dynamic.</p>  |
| 17. | CS-345: Programming in Java-II  | <p>To learn database programming using Java</p> <p>To study web development concept using Servlet and JSP</p> <p>To develop a game application using multithreading</p> <p>To learn socket programming concept</p>  |
| 18. | CS-346: Computer Graphics       | <p>To study how graphics objects are represented in Computer</p> <p>To study how graphics system in a computer supports presentation of graphics information</p> <p>To study how interaction is handled in a graphics system</p> <p>To study how to manipulate graphics object by applying different transformations</p> <p>To provide the programmer's perspective of working of computer graphics</p> |

