Girraj Govt. College (Autonomous)

NAAC Re-Accredited With "B"

PROGRAMME OUTCOMES, PROGRAM SPECIFIC OUTCOMES, COURSE OUTCOMES:

Mechanism of Communication: The following mechanism is followed by the institution to communicate the learning outcomes to the teachers and students.

- **Hard Copy of syllabi and Learning Outcomes are available in the departments for ready reference to the teachers and students.**
- **Learning Outcomes of the Programmes and Courses are displayed on the notice boards of each department.**
- **The importance of the learning outcomes has been communicated to the teachers in every IQAC Meeting and College Committee Meeting.**
- **The students are also made aware of the same through Tutorial classes.**

Programs Offered

Undergraduate Programs

I B.A.

EPP - Economics, Public Administration, Political Science E/M,T/M

EHPA -Economics,History, Public Administration E/M,T/M

CAEP - Computer Applications ,Economics , Political Science E/M

CAHP –Computer Applications ,History, , Political Science E/M

HEP - History, Economics, Political Science E/M,T/M&U/M

HPP – History, Public Administration, Political Science E/M,T/M

HECA- History, Economics Computer Applications E/M

II B.Com Computer Applications E/M

III BBA E/M

IV B.Sc. (Physical Sciences) E/M

MPCs - Maths, Physics, Computer Science

MSCs - Maths, Statistics, Computer Science

MPC - Maths, Physics, Chemistry

V B.Sc. (Biological Sciences) E/M

BZC - Botany, Zoology, Chemistry

BCCZ – Bio-chemistry, Chemistry, Zoology

BTBC - Biotechnology, Botany, Chemistry,

BCBC – Bio-chemistry, Botany, Chemistry

BTZC - Biotechnology, Zoology, Chemistry

BCZC - – Bio-chemistry, Zoology, Chemistry

MZC- Microbiology, Zoology, Chemistry,

MiBC - Microbiology, Botany, Chemistry

Post Graduate Programs E/M

1. **M.A English**
2. **M.A Economics**
3. **M.Com.**
4. **M.Sc. Chemistry**
5. **M.Sc. Mathematics**
6. **M.Sc Botany**
7. **M.Sc Zoology**
8. **M.Sc Physics**
9. **B.Lisc**

List of Skill Enhancement Courses and Generic Electives for 2019-20		
SKILL ENHANCEMENT COURSES		
S.E.C. - SUBJECT	**OFFERING DEPT.**	**GROUPS**
	SEMESTER -III (SEC-1)	
1. Indian Culture and Tourism	HISTORY	ALL BA GROUPS
2. Principles & Practice of Life Insurance	COMMERCE	ALL BCOM
3. THEORY OF EQUATIONS	MATHEMATICS	B.Sc. All Maths Groups
4. Bio-Fertilizers	BOTANY	B.Sc. All Life Sciences Groups
	SEMESTER -IV (SEC-2)	
1. NUMBER THEORY	MATHEMATICS	B.Sc. MPC E/M, T/M, MPG
2. Statistical Computation using C programming	Computer Science and Statistics	B.Sc. MPCs , MSCs, MECs
3.Nursery and Gardening	Botany	B.Sc. B.Z.C. E/m, T/m, B.Sc. Bio-tech.Bot.Che., Bio-tech.Zoo.Che.
4.Sericulture	Zoology	B.Sc.Bio-chem.Bot.Che, Bio-chem.Zoo,Che, Micro-bio.Zoo.Che, Micro-bio.Bot.Che
5. E-Governance	Public Administration	All BA Groups
6. Principles and Practice of General Insurance (PPGI)	Commerce	All BCom. Groups
	SEMESTER -V (SEC-3)	
1. Materials and their applications	Chemistry	B.Sc. All Maths Groups
2. Verbal Reasoning and Aptitude Test	Zoology	B.Sc. All Life Sciences Groups
3. Citizenship Rights, Duties and Laws	Political Science	All BA Groups
4.Regulations of Insurance Business	COMMERCE	All BCom. Groups

	SEMESTER -VI (SEC-4)	
1.Mashroom Culture Technology	Botany	B.Sc. All Biological Sciences Groups
2.Graph Theory	MATHEMATICS	B.Sc. All Maths Groups
3.Project Work	Economics	All BA Groups
4.E-Banking and E-Insurance	COMMERCE	All BCom. Groups

GENERIC ELECTIVES		
G.E. - SUBJECT	**OFFERING DEPT.**	**GROUPS**
	SEMESTER -V (GE-1)	
1.Indian National Movement	History	B.A. (EPP), BA (C.A) Groups
2.Indian Constitution and Administration	Public Administration	BA (HEP) E/M, T/M, U/M.
3.Indian Economy	Commcerce	ALL BCOM
4.Economic Botany	Botany	B.Sc. All Maths Groups
5.Indian Economy	Economics	B.Sc. All Life Sciences Groups
	SEMESTER -VI (GE-2)	
1.History of Telangana Movement and State Formation	History	B.A. (EPP), BA (C.A) Groups
2.Good Governance	Public Administration	BA (HEP) E/M, T/M, U/M.
3.Sectors of Indian Economy	Commerce	ALL BCOM
4.Vermi Culture	Zoology	B.Sc. All Maths Groups
5.Telangana Economy	Economics	B.Sc. All Life Sciences Groups

Program Learning Objectives and Programme Outcomes

	Program	Learning Objectives of Programs
1	**B.A (EPP) - Economics, Public Administration, Political Science E/M,T/M**	This college offers degree in Bachelor of Arts (B.A) with different combinations. Students have the option to choose between English, Hindi, Urdu and Telugu as a linguistic course. The other subject areas include Economics, Political Science, Public Administration, History, ComputerApplication,. The students go through a well-defined study programme for their all-round development. Following the successful accomplishment of BA, students can look for jobs or go for higher education such as postgraduate degree in any of the areas where BA has been completed. Following are the major outcomes of this programme: Students can go for a career option in various areas following successful accomplishment of their Bachelor of Arts degree 1.. Employment opportunities include Historian, Economist, Educationist, Archaeologist, Political Scientist, Philosopher, Social Activist, Personnel Manager, Psychologist, Sociologist, Philosopher, Public Relation Executive, Lawyer, Journalist and so on. 2. This course also offers opportunities to undergraduates in Banking jobs, SSC , Railway and even Civil services. They can appear for almost every exam
2	**B.A (EHPA) - Economics,History, Public Administration E/M,T/M**	
3	**B.A CAEP - Computer Applications ,Economics , Political Science E/M**	
4	**B.A CAHP – Computer Applications ,History, , Political Science E/M**	
5	**B.A HEP - History, Economics, Political Science E/M,T/M&U/M**	

6	**B.A HPP – History, Public Administration, Political Science E/M,T/M**	where science is not the basic eligibility. 3. After completion of this course students can go for B.Ed, M.A, M.Ed, or Ph.D and choose teaching as career either in school or in university. 4. Study of Humanities makes students socially aware. They know the problems of society. Thus many choose to work in NGOs and some open their own.
7	**B.A HECA- History, Economics Computer Applications E/M**	5. Students having degree in B.A. have edge in CAT exams as IIMs looking for diversity . Many arts students pursue their career in Management and Marketing *To ensure the development of core competencies including, but not limited to, written and oral communication, quantitative reasoning, information literacy, and critical thinking. * The students acquire knowledge in the field of social sciences, literature and humanities which make them sensitive and sensible enough. *.The B.A. graduates will be acquainted with the social, economical, historical, geographical, political, ideological and philosophical tradition and thinking. * The program also empowers the graduates to appear for various competitive examinations or choose the post graduate programme of their choice. *.The B. A. program enables the students to aquire the knowledge with human values

		framing the base to deal with various problems in life with courage and humanity. *The students will be ignited enough to think and act over for the solution of various issues prevailed in the human life to make this world better than ever.

S.No	Program	Learning Objectives of Programs
8	**B.Com (Comupter Applications)**	1. The B. Com. graduates would be able to acquire basic and fundamental knowledge 2. and skills for doing business and commercial activities of their choice. 3. The program also empowers the graduates to appear for various competitive exams 4. or choose a profession of their choice such as CA, CS, ICWA, MBA, M.Com etc. 3. The program enables the students to acquire the accounting knowledge, management principles, retail trading, banking and insurance transactions, business economics and financial management. 5. The students also acquire knowledge in the field of management accounting, 6. corporate accounting, statistical and mathematical techniques and knowledge relating to corporate law and business laws. 7. The students become capable of doing a business of their choice or 8. choosing a profession or can become employees having basic knowledge 9. and skill required for such activities. 6.Understand the fundamental concepts of Computers, Business environment and IT Applications in Business 10. Successfully understand & analyze technical 11. data to reach actionable conclusions, including technological solutions to the business. 8.Learn technologies & IT languages, so the business problems could be addressed. 9.Develop competent technical writing skills so as to enable the graduate to communicate business ideas to senior management and general public. 10. To identify and sharpen their IT/ programming skills. 1.Use analytical and reflective thinking techniques to identify and

		analyze business problems, develop viable solutions, and make effective decisions. 2.Apply appropriate quantitative and qualitative techniques in solving business problems. 3.Demonstrate competency in the underlying concepts, theory and tools taught in the core curriculum. 4.Identify and analyze relevant factors that influence decision-making in business. Develop viable alternatives and make effective decisions in an international business context. 5.Effectively address important international and multicultural issues that impact business. 6.Acquire skills and competencies in the field of international business and finance.
9	Bachelor of Business Administration (BBA)	

S.No	Program	Learning Objectives of Programs
10	**B.Sc (MPCs) - Maths, Physics, Computer Science**	Bachelor of Science (BSc) offers theoretical as well as practical knowledge about different subject areas. These subject areas include Physics, Chemistry, Mathematics and Comuter Science other fields depending on the specialisation a student opts. This programme course is most beneficial for students who have a strong interest and background in Science and Mathematics. The course is also beneficial for students who wish to pursue multi and inter-disciplinary science careers in future. Following are the various programme outcomes: * 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. Mathematics 1. A graduate in Mathematics can skillfully manipulate the problems related to algebra, calculus, trigonometry etc. 2. The subject of Mathematics develops logical thinking and expertise required

		in techniques for proving or disproving the facts after mathematical formulation. 3. A graduate in Mathematics is fully equipped with reasoning skills, logical skills and analytical skills required to qualify various competitive exams. 4. Finally, a student after doing graduation with Mathematics as a subject can utilize his skills in various fields such as Astronomy, Astrology, Weather forecast, Education, Planning, Accounts, Finance, Economics, Statistics, Computing and in almost all sciences.
11	**B.Sc(MSCs) - Maths, Statistics, Computer Science**	Physics 1. The student will demonstrate a scientific knowledge of the core physics principles in Mechanics, Electromagnetism, Modern Physics, and Optics. 2. The student will determine the appropriate level of technology for use in: a) experimental design and implementation, b) analysis of experimental data, and c) numerical and mathematical methods in problem solutions. 3. The student will effectively communicate their knowledge of physics from basic concepts to specific detailed presentations through a variety of oral, written, and computational modalities. 4. The student will demonstrate a purposeful knowledge of scientific literature and ethical issues related to physics **Computer Science** 1. This programme makes learners aware of the history of the discipline of

		Computer Science and understand the conceptual underpinnings of the subject. 2. Students understand the nature of the software development process, including the need to provide appropriate documentation. 3. The program also empowers the graduates to appear for various competitive examinations or choose the post graduate programme of M.Sc Computer Science . 4. Understand the nature of the software development process, including the need to provide appropriate documentation. 5. Understand standard techniques for solving a problem on a computer, including programming techniques and techniques for the representation of information.
12	**B.Sc(MPC)- Maths, Physics, Chemistry**	Chemistry *The purpose of the program is to provide the key knowledge base and laboratory resources to prepare students for careers as professionals in the field of chemistry. *The students are taught how to design and carry out scientific experiments as well as accurately record and analyze the results of such experiments. *The course is so designed that the students understand the central role of chemistry in our society and become potent enough to explore new areas of research both in chemistry and in allied fields of research and technology *After the completion of this course students have the option to go for higher studies i.e. M. Sc and then do some research for the welfare of mankind. * After higher studies students can join as scientist and can even look for professional job oriented courses. *This course also offers opportunities for serving in Indian Army, Indian Navy, Indian Air Force as officers.

		* Students after this course have the the option to join Indian Civil Services as IAS, IFS etc. *After the completion of the B.Sc degree there are various other options available for the science students. Often, in some reputed universities or colleges in India and abroad the students are recruited directly by big MNC's after their completion of the course. 8. Apart from the research jobs, students can also work or get jobs in Marketing, Business & Other technical fields. Science graduates also recruited in the bank sector to work as customer service executives. Students can also find employment in government sectors.

S.No	Program	**Learning Objectives of Programs**
13	**BZC - Botany, Zoology, Chemistry**	1. The B. Sc. Programme develops scientific temperament and attitude among the science graduates. 2. The qualities of a science – observation, precision, analytical mind, logical thinking, clarity of thought and expression, systematic approach, qualitative and quantitative decision making are enlarged. 3. The program also empowers the graduates to appear for various competitive examinations or choose the post graduate programme of their choice . 4. This programme train the learners to extract information, formulate and solve problems in a systematic and logical manner. 5. This programme enables the learners to perform the jobs in diverse fields such as science, engineering, industries, survey, education, banking, development-planning, business, public service, self business etc. efficiently *Botany covers a wide range of scientific disciplines concerned with the study of plants, alage and fungi, including structure, growth, reproduction, metabolism, development, diseases, chemical properties and evolutionary relationships among taxonomic groups. The course structure of this course is designed while keeping in mind the market demand for skilled and efficient professional who can effectively cater to the demands of growing botanical industry. Job opportunities are also wide as research organizations, herbal products companies, farm management organizations; biotechnology firms always require

		the services of botany students. After the degree course, botany students can work in the state departments, botanical survey of India and environmental protection agency. The department aims to provide the students an up to date level of understanding of plant science and allows them to develop an aptitude towards science and nature. Along with it the students are equipped with the basic skills in identifying and labeling different plants.
14	**BCCZ – Bio-chemistry, Chemistry, Zoology**	**Bio-chemistry** : On Successful completion of this program the graduates shall have: PO 1: Ability to apply the fundamental knowledge of Biomolecules, protein, biochemical techniques in the area of biochemistry. PO 2: Ability to conduct experiment, analyze and interpreted the results. PO 3: An ability to learn a system with its component, or process to meet desired need within realistic constraints. PO 4: Ability to function in a multidisciplinary team. PO 5: An ability to identify, formulate and solve the problems in the area of biochemistry. PO 6: An understanding of professional and ethical responsibilities PO 7: Ability to communicate effectively. PO 8: The broad education necessary to understand the impact of Business solutions in a global, economic, environmental and societal context. PO 9: A recognition of the need for and an ability to engage in lifelong learning in the area of biochemistry. PO 10: A knowledge of contemporary issues in the area of biochemistry. PO 11: An ability to use the techniques, skills and modern professional tools necessary for professional practice and for research. PO 12: An ability to apply the relevant knowledge and managerial skills to manage the project of multidisciplinary nature. Program Specific Objectives: PSO 1- Students shall be able to identify, formulate and solve the problems of endocrine disorders in the area of hormone biochemistry. PSO 2- Students

		shall be able to conduct the clinical biochemistry, Diagnostic biochemistry experiments as well as to analyze and interpret the results. PSO 3- Students shall be able to use the biochemical techniques, Genetic Engineering & Biotechnology skills and modern pathological tools necessary for professional practice and for research dge in the quantitative and qualitative estimation of biomolecules • They study the influence and role of structure in reactivity of biomolecules • At the end of the course, the students have a thorough understanding on the role of biomolecules and their functions
15	**BTBC - Biotechnology, Botany, Chemistry,**	**Biotechnology** 1. Apply basic science, engineering and program core to solve complex biotechnological problems. 2. Isolate, purify and characterize biological samples using sophisticated analytical experimental techniques. 3. Design process equipment, plants, biosensors and recombinant molecules for biotechnological and allied processes. 4. Apply research based knowledge and biotechnological methods to investigate complex biological problems 5. Apply modern software tools including prediction and modeling methods on biological databases to identify issues in biomedical problems 6. Assess personal, product and environmental safety, intellectual property and social responsibilities related to modern biotechnological research and development. 7. Identify measures for energy, environment, health, safety and society following ethical principles. 8. Work in multi-disciplinary teams to attain project objectives, document the activities and present reports effectively. 9. Apply engineering and management principles for effective implementation of projects 10. Pursue life-long learning to enhance knowledge and skills for professional advancement. By the end of B Sc programme in Zoology, a student will: 1. Acquire basic knowledge of various branches of Zoology and General biology. 2. Inculcate interest and love of nature with its myriad living creatures.

		3. Understand the unity of life with the rich diversity of organisms. 4. Be aware of the ecological and evolutionary significance of the organisms in the environment 5. Acquire basic skills in observation and study of nature. 6. Learn the different biological techniques. 7. Develop experimental skills and research aptitude. 8.Acquire basic knowledge and skills in applied branches of zoology which will enable them for self employment 9. Become aware of the need for conservation of the biosphere. 10. Be skilled in problem solving, critical thinking and analytical reasoning as applied to scientific problems. 11. Be able to communicate effectively their views and ideas on different issues related to biology 12. Be equipped to use computers in data acquisition and processing and use available software as a tool in data analysis. 13. Stay firm on the value systems of their culture and work for a healthy socio-cultural environment. 14. Acquire the ability to engage in independent and self learning. 15. Successfully pursue their career objectives in advanced education, professional courses, scientific career, teaching career in the school systems or related career following graduation. Chemistry • Students followed and understood general laboratory practice guidelines, including safety. • They are able to handle instruments for basic and modern chemical analysis. • They are able to secure profitable employment in industry or in government sector. Chemistry and Analytical Chemistry produced graduate and post graduate Chemist and graduated Analyst with thorough knowledge of qualitative and quantitative analysis, chemical synthesis, spectroscopic, electro-analytical, chromatographic, thermal, microscopic techniques and other basic analytical techniques to cater the need of various sections in industries such as QC, QA, ADL, R & D, etc

		• After completing the PG program the students secured thorough knowledge of Basic and Applied Chemistry • To make students capable of studying Chemistry and Analytical Chemistry in academic and industrial courses. • To expose the students to promising frontiers of Chemistry and Analytical Chemistry. Also to apprise them with ubiquitous of these subjects in their future studies and their applications in a range of spheres of Chemical Sciences • To build up problem solving skills in students. • To expose the students to different processes used in industries and their applications. • To develop the ability to attain the knowledge of terms, facts, techniques, concepts, processes and principles of subjects. • To develop abilities to apply the knowledge of contents of principles of Chemistry . • To develop proper attitude towards the subject. • To develop the power of appreciation, the achievements in Chemistry and the role in nature as well as society. • To develop skills required in Chemistry and Analytical Chemistry such as the proper handling of apparatus, chemicals and sophisticated instruments.
16	**BCBC – Bio-chemistry, Botany, Chemistry**	**Microbiology** 1. Learners will understand the scope and historical developments in microbiology, characteristics 2 of different types of microorganisms and methods of their classification. 2. Students will understand ultra structure of bacterial cell. Explain the nutritional requirements and mechanisms of their transportation in the cell. 3. Understand and use methods of visualizing microorganisms, controlling growth of microorganisms, isolation of microorganisms. 4. Perform isolation and maintenance of bacterial cultures. 5. Learners will understand and explain the body defense mechanisms and describe the immunological concepts with reference to infection, immunity This fundamental paper discusses the importance of microorganisms • The course throws light on types of microorganisms in and around humans
17	**BTZC - Biotechnology, Zoology, Chemistry**	
18	**BCZC - – Bio-chemistry, Zoology, Chemistry**	
19	**MZC- Microbiology, Zoology, Chemistry,**	
20	**MiBC -**	

	Microbiology, Botany, Chemistry	• At the end of the course, the student has understanding on the metabolism and mechanism of microbial life

Post Graduate Programs E/M

S.No	Programme	**Learning Objectives of Programs**
1.	**M.A English**	PO 1. The students acquire in depth knowledge in the field of social sciences, literature and humanities which make them sensitive and sensible enough to solve the issues related with mankind. PO 2. The postgraduates will be acquainted with the social, economical, historical, geographical, political, ideological and philosophical tradition and thinking of their respective subjects. PO 3. The program also empowers the post-graduates to appear for various competitive examinations or choose the any post graduate or research programme of their choice. PO 4.The M. A. program enables the students to aquire the knowledge with human values framing the base to deal with various problems in life with courage and humanity .PO 5. The students will be ignited enough through the knowledge of the special PG programme to think and act over for the solution of various issues prevailed in the human life to make this world better than ever. PO 6. Through the PG programme the students will come know about research in their respective subject. It may also provide the information to the students for collection of Data, enquiry, primary and secondary methods of collection of data, classification and tabulation of data. Students get knowledge of various research methods and can realize the importance of research to find solutions of a specific issue.

		M.A English Program will prepare students to carry out the independent and original scholarship that informs research, teaching, and service in English departments. a. Core Knowledge, Methods, and Scholarship: Students will acquire general knowledge of a range of historical fields that comprise an English Department, and a range of theories, methods, research protocols, and scholarly practices that are necessary for strong research, teaching, and service in our discipline, and that are crucial supplements to undergraduate degrees and professional degrees for students who do not plan to pursue PhDs in English (generally these students have opted for publishing, high school teaching, library science, and other careers that depend on careful research, writing, and analysis). b. Specialization knowledge, methods, and scholarship: Students will demonstrate comprehensive knowledge of the literature (or film) in their chosen historical field(s) or research focus. c. Creative synthesis and critical thinking: Students will learn a number of strategies for analyzing individual examples of literature and film, and for thinking synthetically about works that share a formal, generic, topical, or historical impulse. They also will learn a number of strategies for sorting through the applicability of and connections among a range of scholarly approaches to those works. This training will allow them to produce original insights about the literature and about the scholarly practices whose explanatory power is most compelling. d. Research/Methods: Students will learn how to design and carry out original and persuasive research in English literature with particular attention to their chosen historical field(s) or research focus. e. Scholarship: Students will produce original scholarship that contributes to the growth of knowledge in their historical field. f. Independent Learner: Students will demonstrate an ability to define projects and conduct research independently.
2.	**M.A Economics**	**PROGRAM OUTCOME FOR M.A ECONOMICS** The purview of Economics is widespread and it flanks almost every field related to human beings.

		* The introduction, development and advancement of new subjects associated with economics and their analytical applications decipher many unknown behaviours of human beings. * By the introduction of the conditions of rationality in the areas of Consumption, Production and distribution, it tries to nurture rational thinking * The students of Economics can go for higher studies in the fields of Economics, Business Administration and Education after attaining post-graduation in economics *The subject matter of M.A Economics programme covers the fields of Agriculture, Industry, Banking, Financial Markets, Planning and Development, Public Finance International Trade and the functioning of international organisations such as World Bank International Monetary Fund, International Development Association, etc. *Since these are the main subject content of State Level and National Level competitive examinations, banking service, railway service examinations and other competitive examinations the students of Economics can easily crack such examinations and can become successful in getting employment opportunities. *completion of PG Degree in Economics with good knowledge open up research opportunities in the national level premier Educational Institutes like IISc, IITs, Delhi School of Economis, BITs, Pilani, etc. * The real understanding of the subject content of M.A. Economics help in the character building of students and makes them responsible citizens. They are exposed 2 to national and international problems and hence they will have a thorough understanding of national and international economic events.
3	**M.Com**	The post graduate program provides the students advanced knowledge in the field of business and management and also enables the students to acquire the basic skills required for carrying out business activities, research, stock market operations, accounting practices, etc. The program also provides them with adequate knowledge and skill to provide consultancy services in finance and marketing. Similarly after completion of the program students can confidently prepare for NET, SET, and other competitive examinations of their choice. *To develop independent logical thinking, impart skills for personality

		refinement. *To equip and train our students to accept the challenges of 21st century in both Academic and Professional sides . *To create awareness among the students for acquiring the knowledge of specialized subjects *To equip the students for seeking, Suitable employment and encourage and promote self employment opportunities *To enable them to understand complex environment and handle their employment or self employment effectively and efficiently
4	**M.Sc. Chemistry**	At the end of the programme the students will be able to: *Acquire knowledge, abilities and insight in well-defined area of research within Chemistry. Work as a Chemistry professional, and qualify for training as scientific researcher. *Develop knowledge of scientific theories and methods, gain experience in working independently with scientific questions and clearly express their opinion on academic issues. *Develop communication skills, both written and oral, for specialized and non-specialized audiences. *Acquire the skills of planning and conducting advanced chemical experiments and applying structural-chemical characterization techniques. *Examine specific phenomena theoretically and/or experimentally, contribute to the generation of new scientific insights or to the innovation of new applications of research in Chemistry.
5	**M.Sc. Mathematics**	The Program Objectives are the knowledge skills and attributes which the students have at the time of post-graduation. At the end of the program, the student will be able to: *To provide comprehensive curriculum to groom the students into qualitative

		scientific manpower * To Enable students to enhance mathematical skills and understand the fundamental concepts of pure and applied mathematics. *To provide qualitative education through effective teaching learning processes by introducing projects, participative learning and latest software tools. *To inculcate innovative skills, team work, ethical practices among students so as to meet societal expectations. To encourage collaborative learning and application of mathematics to real life situations *To inculcate the curiosity for mathematics in students and to prepare them for future research
6	**M.Sc Botany**	MSc Botany program is designed with an objective to encourage and support the growing demands and challenging trends in the educational scenario. Our training focuses on the all-round development of the students to face the competitive World 1.Understand the scope and significance of the discipline. 2.Imbibe love and curiosity towards nature through the living plants. 3.To consider knowledge of Science as the basic unbias of education. 4.In order to make students open-minded and curious, we try our best to enhance and develop a scientific attitude. 5.We make the students fit for the society by enabling them to work hard. 6.Make the students exposed to the diverse life forms. 7.Make them skilled in practical work, experiments, laboratory equipment and to interpret correctly on biological materials and data. 8.Develop interest in Biological research. 9.Encourage the students to do research in related disciplines. 10.Develop a thirst to preserve the natural resources and environment.

		11.Develop the ability for the application of acquired knowledge in various fields of life so as to make our country self-sufficient 12.Appreciate and apply ethical principles to biological science research and studies
7	**M.Sc Zoology**	*To meet the academic to applied aspects in zoology suited to real problems of regional and National needs ϖ To expose learners to frontier and thrust areas of Biology(Zoology) *To train learners for better performance in various competitive examination and in research careers. *To enable the learners to acquire and develop self- study habits *To shape the learners to become worthy citizens of the Nation in the field of Zoology and interrelated fields. *Attained the knowledge relating to invertebrate & chordate, developmental biology, animal physiology, Cell & Molecular biology, genetics and clinical science, *Progression to PG education in Zoology, Aquaculture, , Environmental science, Biotechnology, bio informatics, bio chemistry, microbiology and Human genetics, *The Students get employment by industries/self employment in poultry, veterinary and Aquaculture
8	**M.Sc Physics**	. 1. The Physics student has skills in planning and carrying out advanced physics experiments. Introduction to cross-disciplinary science e. g. Nanotechnology, Thin Film Technology, Laser and its Application. 2. The M.Sc. Physics students will develop research skills which might include advanced laboratory techniques, develop communication skills, apply theoretical knowledge of principles and concepts of Physics to practical problems, experienced undertaking a major, individual, physics-related project. 3. M.Sc. Physics with specialization in Photonics students will pursue physics as a teaching and research career and doing job in various industries, colleges etc. 5. The graduate has in-depth knowledge of the topics of the research conducted by researchers at the Department of Physics, as expert knowledge of a well-defined area of research within physics

UG Program Specific OutComes

Programme Specific Outcomes Department of Economics Course: B.A. Subject: Economics

After graduation the student will be able to learn

PSO 1: The behavioural patterns of different economic agents,

advance theoretical issues and their applications.

PSO 2: Macroeconomics

PSO 3: Understand the basic concept of microeconomics.

PSO 4: Acquaint with some basic statistical methods to be applied in economics.

PSO 5: Acquaint with some basic mathematical methods to be applied in economics.

PSO 6: Acquaint with some basic theoretical concept of public finance.

PSO 7: Acquaint with the measurement of development with the help of theories along

with the conceptual issues of poverty and inequalities with Indian perspectives.

PSO 8: Learn the basic concept of monetary analysis and financial marketing in Indian financial markets.

PSO 9: Learn the development issues of Indian economy.

PSO 10: Acquaint with some basic concept of environmental economics along with the

solution of the environmental problems.

Program Specific Outcomes Department of History PSOs of B.A History

PSO1. Understand background of our religion, customs institutions, administration and so on.

PSO2. Understand the present existing social, political, religious and economic conditions of the people.

PSO3. Analyze relationship between the past and the present is lively presented in the history.

PSO4. Develop practical skills helpful in the study and understanding of historical events.

They: • Draw historical maps, charts, diagrams etc. • Prepare historical models, tools etc.

PSO5 .Develop interests in the study of history and activities relating to history.

They: • Collect ancient arts, old coins and other historical materials;

• Participate in historical drama and historical occasions;

• Visit places of historical interests, archaeological sites, museums and archives;

• Read historical documents, maps, charts etc.

• Play active roles in activities of the historical organizations and associations;

and (f) Write articles on historical topics.

PSO6. The study of history helps to impart moral education.

PSO7. History installs the feeling of patriotism in the hearts of the pupils.

B.A POLITICAL SCIENCE

PROGRAMME SPECIFIC OUTCOMES

PS0 1 - Understanding the nature and developments in national and international politics

PSO2 - Analysing the Indian constitutional provisions, major legislations and reforms.

PSO3- Critical evaluation of social, economic and political variables for a proper understanding of the plurality of Indian society

PSO4 -Building overall consciousness regarding national political history, international relations and present Indian and Western political thinkers.

PSO5 - Encouraging a comprehensive, comparative understanding of specific world constitutions such as UK, USA, China, Russia, Switzerland and France.

PSO6- Developing knowledge of administrative studies with special reference to Indian administrative structures and practices.

PSO7 - Examining India's foreign relations with her neighbours and great powers.

PSO8-Use of case study method for analysing the working of important international and regional organisations like UN, EU, ASEAN etc.

B.A Public Administration:

Programme Specific Outcomes

Students who graduate with a B.A in Public Administration will

1. Understand the basic concepts of public administration.

a) General concept of public administration and bureaucracy.

b) Understanding knowledge of human resource management.

c) Understanding knowledge of public budgeting and finance.

d) Understanding knowledge of policy analysis.

e) Understanding knowledge of information management and technology.

f) Understanding how administrative responsibility , accountability, efficiency, diversity, and teamwork within the context of government and non-profit public service programs.

2. Have the research skills to critically analyze public administration issues
3. and analyse managerial issues and policy recommendations.
4. Have the ability to communicate and interact productively
5. with a diverse and changing workforce and citizenry.
4. Be able to develop/formulate a public policy response to social or economic problem.

B.A (Computer Application)

Program Specific Outcome (Pso)

- Computer application graduates will apply their knowledge and skills to succeed in their career/ professional development and/or postgraduate education to pursue flexible career paths amidst future technological changes.
- Our graduates will apply basic principles and practices of computing grounded in mathematics and science to successfully complete hardware and/or software related engineering projects to meet customer business objectives and/or productively engage in research.
- Our graduates will demonstrate a sense of societal and ethical responsibility in their professional endeavors, and will remain informed and involved as full participants in our profession and our society.
- Our graduates will demonstrate strong communication skills and the ability to function effectively in multi-disciplinary teams.
- Our graduates will demonstrate strong bonding in team and display distinct leadership traits.
- Our graduates will be prepared for civil service as well as public service examination

B.Com. CA

Program Specific Outcome (Pso)

PSO 1 : Ability to understand the concept of accounting and Computer application in Business.

PSO 2 : Capacity to analyze latest technologies to solve problems in the areas of computer Application.

PSO 3 : Application of the knowledge of accounting fundamentals and accounting specialization in Business.

PSO 4 : Ability to develop accounting and e- Entrepreneurial skills.

Department Of Business Admistration BBA

Programme Specific Outcomes

PSO 1 :Development of communication skills, interpersonal relationships and ability to work as a team.

PSO 2 : Analysis of the business scenario, organizational context and capability to apply management principles

PSO 3 : Ability to apply the inter-disciplinary approach to solve business problems.

PSO 4 : Cultivation of rational approach to make decisions for optimal use of resources and maximise returns.

B.Sc(Mathematics)

PROGRAMME SPECIFIC OUTCOMES

Students of B.Sc. with major in mathematics should

1.Understand the limit of functions, use to prove properties of continuous functions and derivative of functions

(2) Expound upon the concept of Remain integrability

(3) Demonstrate when a binary algebraic structure forms Group and Group properties

(4) Treat special types of Rings such as Euclidean domain and Principal ideal domain

(5) Solve linear and nonlinear equations

(6) Calculate definite integral using an appropriate numerical method

(7) Derive methods for various mathematical operations and tasks such as interpolation, differentiation and integration

(8) Be able to use the facility with mathematical and computational modeling of real decision making

(9) Use the methods to design experiments, analysis and interpretation of data and synthesize the information to provide valid conclusion

B.Sc. Physics

Specific Outcomes:

This undergraduate course in Physics Would provide the opportunity to the students:

- To understand the basic laws and explore the fundamental concepts of physics
- To understand the concepts and significance of the various physical phenomena.
- To carry out experiments to understand the laws and concepts of Physics.
- To apply the theories learnt and the skills acquired to solve real time problems.
- To acquire a wide range of problem solving skills, both analytical and technical and to apply them.
- To enhance the student's academic abilities, personal qualities and transferable skills this will give them an opportunity to develop as responsible citizens.
- To produce graduates who excel in the competencies and values required for leadership to serve a rapidly evolving global community.
- To motivate the students to pursue PG courses in reputed institutions.
- This course introduces students to the methods of experimental physics. Emphasis will be given on laboratory techniques specially the importance of accuracy of measurements.
- Providing a hands-on learning experience such as in measuring the basic concepts in properties of matter, heat, optics, electricity and electronics.

B.Sc. Chemistry

Specific Outcomes:

Department of Chemistry After successful completion of three year degree program in Chemistry a student should be able to;

PSO-1. Gain the knowledge of Chemistry through theory and practical‟s.

PSO-2. To explain nomenclature, stereochemistry,

structures, reactivity, and mechanism of the chemical reactions.

PSO-3. Identify chemical formulae and solve numerical problems.

PSO-4. Use modern chemical tools, Models, Chem-draw, Charts and Equipments.

PSO-5. Know structure-activity relationship.

PSO-6. Understand good laboratory practices and safety.

PSO-7. Develop research oriented skills.

PSO-8.make aware and handle the sophisticated instruments/equipments.

B.Sc. (Computer Science)

Specific Outcomes:

Programme Specific Outcomes for

PSO1 Apply fundamental principles and

methods of Computer Science

to a wide range of applications.

PSO2. Design, correctly implement and document solutions to significant computational problems.

PSO3 Impart an understanding of the basics of our discipline.

PSO4. Prepare for continued professional development.

PSO5. Develop proficiency in the practice of computing

B.Sc. (Statistics):

Specific Outcomes:

The graduates in Statistics are able to:

- Enter a promising professional life even after graduation.
- Pursue higher studies leading to post-graduate or doctoral degrees.
- Integrate knowledge, skills and attitude that will sustain an environment of learning and creativity.
- Develop an understanding of various statistical tools, techniques and software
- Apply critical and contextual approaches across wide variety of subject matter
- Develop logical thinking to comprehend key facts leading to formulation of the solution process.
- Develop self-confidence and awareness of general issues prevailing in the society.
- Develop Firm base in the fundamentals and applications of current scientific theories.
- Find employment in research and survey institutes, industry government, school systems, instructors, as tax, financial and other consultants.

B.Sc. (Botany)

Programme Specific Outcome

1. Import knowledge of science as basic objective of education.
2. A Scientific attitude to make students create open minded and curiosity.
3. To have knowledge about various plant groups from lower to higher groups.
4. To make the students aware about biodiversity conservation and sustainable use of plants.
5. Apply the knowledge of basic science, life sciences and fundamental process of plant to study and analyse plant form.
6. Develop skills in practical work experiments, equipments and laboratory use along with collection and interpretation of biological materials and data.

B.Sc. (Zoology)

Program Specific Outcomes:

PSO1. Understand the nature and basic concepts of cell biology, genetics, taxonomy,

physiology, ecology and applied Zoology

2. PSO2. Analyse the relationships among animals, plants and microbes

3. PSO3. Perform procedures as per laboratory standards in the areas of Taxonomy, Physiology, Ecology,

Cell biology, Genetics, Applied Zoology, Clinical science, tools and techniques of Zoology,

Toxicology, Entomology,Nematology Sericulture, Biochemistry, Fish biology,

Animal biotechnology, Immunology and research methodology

4. PSO4. Understand the applications of biological sciences in Apiculture, Aquaculture, Agriculture and Medicine

5. PSO5. Gains knowledge about research methodologies,

effective communication and skills of problem solving methods

PSO6. Contributes the knowledge for Nation building

B.Sc. (Bio -Chemistry)

Programme Specific Outcomes

PSO 1 : Ability to analyze the various biological components through analytical tools in living cells

and molecular machinery.

PSO 2 : Development of practical laboratory skills and strong speculative foundation in the cross over discipline of Chemi
Bioinformatics.

PSO 3 : Understanding of the applications of Biochemistry in various fields such as Clinical Biochemistry, Genetic Engineer
& Biotechnology.

PSO 4 : Acquire practical skills that will prepare for a future career in the interdisciplinary subjects.

B .Sc MICROBIOLOGY

Programme Specific Outcomes (PSOs)

By the end of this course, the students will be able to:

1. Understand the contributions of various scientist in microbiology and scope of various branches
2. Understand various kinds of prokaryotic & eukaryotic microbes and their interactions
3. Explain and describe importance of organic compounds and its chemistry found in living cells
4. Understand and explain various processes of metabolism of carbohydrates amino acids and vitamins
5. Explain DNA, RNA and protein structure and their synthesis
6. Understand the concept of disease development, spread, control and eradication from society
7. Understand the basic concepts of gene and their regulation of action
8. Explain and write various industrial fermentations and bioinstrumentation.

B.Sc Biotechnology

Program Specific Outcomes (Psos)

PSO1. Students will be able to design, conduct experiments, analyze and interpret data for investigating problems in Biotechnology and allied fields.

PSO2. Demonstrate proficiency in basic science and foundation biotechnology course.

PSO3. Demonstrate a working knowledge of advanced biological sciences.

PSO4. Demonstrate competence in application of engineering principles to biological systems.

PSO5. Demonstrate an ability to appear for National level examination to pursue higher studies.

PSO6. Demonstrate practical and theoretical knowledge essential for pursuing higher studies.

Several career opportunities are available for students with biotechnology background abroad especially in countries like Germany, Australia, Canada, USA and

many more where biotechnology is a rapidly developing field after pursuing their higher education.

PSO7. Demonstrate an ability to identify careers in biotechnology, domain like Pharmaceutical Food Industry etc, and skills required to work in a biotechnology laboratory or manufacturing facility. Some of the major pharmaceutical and drug companies' hiring biotechnological professionals include Dabur, Ranbaxy, Hindustan Lever and Dr Reddy's Labs, food processing industries, chemical industry and textile industry as well. Beside this industries also employ biotechnological professionals in their marketing divisions to boost up business in sectors where their products would be required.

PSO8. Entrepreneurship ventures such as consultancy and training centres can be opened

Under Graduate Program ENGLISH

Under Graduate Program Specific Outcomes: B.A. B.Com,BBA,B.Sc (English):

The graduates in Special English:

- Understand major and minor forms of literature
- Have developed interest in literature and language.
- Enjoy reading the short stories, poems, novels and dramas.
- Know the literary theories, terms and concepts in Criticism.
- Appreciate the literary works.
- Understand the structure and function of grammatical units.
- Know the use of language at semantic and syntactic levels. The students could improve vocabulary.
- Use English effectively in formal and informal situations.
- Attempt creative writings.
- Know phonological and morphological aspects of English
- Understand the values of literature in life.
- Understand different cultures of the times.

- Know various genres in English literature like Indian English literature,

British literature and American literature.

- Develop language learning skills like Listening, Speaking, Reading and Writing.
- Develop vocabulary and communicative skills.
- Develop verbal and non-verbal skills of communication.
- Are able to get the jobs in industry, government, schools and offices.
- Have enriched confidence to appear for competitive examinations.

Department of English Programme Outcomes:-

➢ Developing intellectual, personal and professional abilities through effective communicative skills; ensuring high standard of behavioral attitude through literary subjects and shaping the students socially responsible citizens.

➢ To enhance employability of the students by developing their linguistic competence and communicative skills

➢ Students should be able to develop their intellectual, personal and professional abilities. Students should acquire basic language skills, such as Listening, Speaking, Reading and Writing.

Programme Specific Outcomes:-

➢ On successful completion of the Programme, the students will be accurate both in oral and written comm be strong in Grammar and its usage.

➢ They can express a thorough command of English and its linguistic Structures.

➢ They can apply critical frameworks to analyze the linguistic, cultural and historical background of texts written in English.

➢ They will be familiar with the conventions of diverse textual genres including fiction, non-fiction, poetry, autobiography, biography, Journal, film, plays, editorials etc.

➢ To enable students to understand the passage by silent reading

➢ To learn phonetics and proper intonation

Program Specific Outcomes B.A. (Hindi)

On completion of B.A (Hindi),

Students are able to:

1. To understand the basic concept and subject of Hindi & its origin
2. To make or not the importance of subject Hindi & its Branches.
3. To understand various aspect of Hindi literature with a process to reach method and giving new mode and direction.
4. To make a attempt in different area and theory such as vocabulary and vice versa
5. To understand in the Literature more in a border areas then Mary confined to subject.
6. To know about Hindi literature its roots cause perspectives and methods.
7. Elaborating and understanding its philosophical methods of Hindi Literature.
8. Evaluating the concept of Hindi from past to present and making the society more closely through literature.

Department of Telugu (As a 2nd language in Under Graduate courses)

Programme Outcomes&Programme Specific Outcomes:-

Telugu language is a main language and largely spoken as a mother tongue in Telugu states since time immemorial. In the united A.P.`s Universities as a IInd language ,

Telugu language is introduced on common core syllabus.

After Telangana formation, the importance shifted from Andhra writers of united A.P. and focused on Telangana states nativity, literature and culture.

So, the faculty of various universities in the state designed to

mplement curriculum instructions to the current needs accordingly.

Thus, the literary works of the poets and writers from Telangana mainly occupied in the syllabus of

Ist year and IInd year text books (viz. Sahithi manjira and Sahithi Kinnera).

All the UG programmes College, attain high level of result and academic achievements with enriching programme outcomes. The students empower

themselves from Telugu department learning to independent learning by

the end of II year degree programme.

1) All the UG programmes have Telugu / Hindi / Sanskrit as second language subjects. he motto behind is to improve the language skills like listening, speaking, reading

and writing of all students in the class. The second language is generally the mother tongue

i.e. Telugu or Sanskrit or Hindi. These subjects promoted culture, customs,

moral and literary values in the students.

2. Programme Specific Outcomes:-

* Empower the knowledge of Telugu Language and Literature.

*Improve writing skills like short stories, stories, novels etc,

Department Of Urdu

Programme Specific Outcomes (Psos) Course: B.A. (Urdu)

By the end of the programme, the student will be able to

1. Write sentences and essays on their own.

2. Know about Urdu essayists, novelists, dramatists, and new and old poets and their poetry

. 3. Read, understand and enjoy Urdu poems.

4. Gain knowledge about the authors, their lives and their contributions to Urdu literature.

5. History of Urdu language and literature

6. Understand what is 'Sinatein', their types and uses.

7. Understand and appropriately use Urdu grammar.

PG Program Specific Out Comes

M.A. English

Specific Out Comes

Programme Specific Outcome By the end of the M.A English programme, the students:

• critically interact with works from different contexts:

social, political, economic, historical and national as subjects conscious

of their own socio-historic specificity and thus their level of critical thinking is enhanced.

• become thorough with reading works with theoretical basis

• Students become capable of interpreting and exploring relationships

from the points of view of different people.

• become inspired by fiction, open up their minds and stimulate

the sympathetic/empathic imagination by allowing them

to see the world through other's eyes as well to foster intercultural dialogue

• approach and appreciate Indian literature in English

and explore its uniqueness and its place among the literatures in English.

• learn what language is and what knowledge a language consist of.

This is provided by basic examination of internal organization of sentences,

words, and sound systems. The course assumes no prior training in linguistics

. • get sensitized with the critical tools used in the reading of literature

• form an idea of the complex nature of literary studies and how

they are entangled with other aspects of the social body.

• gain perceptive insights into the socio-political dynamics,

the structuring points of view, the dominant ideology,

hegemony, the prevailing common sense and communal

underpinnings that mediate the writing, production, reception and survival of a work.

• learn literary terms and the various streams in literary criticism,

to make them aware of the inter-disciplinary nature of contemporary criticism and to develop

in students, skills for literary criticism.

• inculcate a literary, aesthetic and critical awareness of diverse

cultures and literary creations and thus to arrive at a broader vision of the world.

• come to know about the evolution of the Feminist movement and

to familiarize them with the various issues addressed by Feminism

• become sensitized to issues like marginalization and subjugation of women

• develop sensible response to great classics in translation

and fine tune analytical skills with a view to achieving a broad, wholesome vision of life.

M.A Economics

SPECIFIC OUTCOMES

*The subject matter of M.A Economics programme covers the fields of Agriculture, Industry, Banking, Financial Markets, Planning and Development, Public Finance International Trade and

the functioning of international organisations

such as World Bank International Monetary Fund, International Development Association, etc.

*Since these are the main subject content of State Level and National Level

competitive examinations, banking service, railway service examinations and other

competitive examinations the students of Economics

can easily crack such examinations and can become successful in getting employment opportunities.

*completion of PG Degree in Economics with good knowledge open up

research opportunities in the national level premier Educational Institutes

like IISc, IITs, Delhi School of Economis, BITs, Pilani, etc.

*The real understanding of the subject content of M.A. Economics help in the

character building of students and makes them responsible citizens.

They are exposed 2 to national and international problems

and hence they will have a thorough understanding of national and international economic events.

M.Com.

SPECIFIC OUTCOME

PSO 1 : Identification and usage of practical tools of finance required in decision making.

PSO 2 : Ability to assess global opportunities and challenges for business growth.

PSO 3 : Capacity to analyse ethical implications of business practices using advanced levels of ethical reasoning

PSO 4 : Ability to investigate effectively the research tools, apply appropriate tools and draw conclusion

M.Sc. Mathematics

SPECIFIC OUTCOME

PSO 1 : Understanding of advanced concepts, principles and techniques from Pure &

Applied topics in mathematics and application of problem-solving skills.

PSO 2 : Development of abstract mathematical thinking and mathematical intuition.

PSO 3 : Assimilation and communication of detailed technical arguments

PSO 4 : Proficiently to construct and formulate logical arguments, conjectures and construction of rigorous principles.

PSO 5 : Ability to carry out extended investigation of mathematical work as various projects independently.

M Sc. Physics

Specific Outcomes (PSO)

- The Master of Science in Physics programme provides the candidate the required knowledge, general competence, and analytical skills on an advanced level, needed in industry, consultancy, education, administration.
- The students would gain substantial knowledge in various branches of physics: Electronics, Quantum, classical, statistical mechanics, condensed matter physics, astrophysics, particle, nuclear and high energy Physics.
- Would able to apply advanced theoretical and/or experimental methods, including the use of numerical methods and simulations.
- This course would empower the student to acquire scientific and engineering skills and the required practical knowledge by performing experiments in general physics and electronics.
- The course as a whole opens up several career doors for the students interested in various areas of science and technology in private, public and government sectors.
- Students may get job opportunities in higher education, research organizations, physics consultancy, radiology, radiation oncology and many others.

Some of the institutions where physics students can start their carrier are: BARC, DRDO, NPTC, IISc, ISRO, ONGC, BHEL, PRL, NPL, SINP, VECC, IITs, NITs, IIPR etc.

M.Sc. Chemistry

Specific Outcomes (PSO)

PSO 1 : Inculcating the ability to design and synthesis of target molecules with the support of retrosynthesis.

PSO 2 : Ability to apply the various spectroscopic techniques to identify the structure of the compounds.

PSO 3 : Acquiring the knowledge of the microscopic techniques like SEM, TEM, AFM and STEM

PSO 4 : Ability to provide insights on selection of the problem and art of scientific writing

PSO 5 : Developing the skill for the development of nanomaterials.

M.Sc. Botany

Specific Outcomes (PSO)

PSO1: Develop a conceptual understanding of principles and importance of Botany. Students would be benefited with knowledge of core subjects like plant diversity, physiology and biochemistry, molecular cytogenetic and application of statistics etc. which are offered in these subjects Modules on analytical techniques, plant tissue culture and photochemistry would make them obtain skills that help in doing research.

PSO2: Learn about practical technique in lab for detail study of plant cell structure, reproduction, anatomy, breeding procedures for hybridization.

Maintain a high level of scientific excellence in botanical research with specific emphasis on the role of plants. Create, select and apply appropriate techniques, resources and modern technology in multidisciplinary way.

Practice of subject with knowledge to design experiments, analyze and interpret data to reach to an effective conclusion.

PSO3: They would identify, formulate and analyze the complex problems with reaching a substantiated conclusion. Logical thinking with application of biological,

physical and chemical sciences. Learning that develops analytical and integrative problem-solving approaches. PSO4: Students would perform functions that demand higher competence in national/international organizations with sporty and helping spirits. Prepare the students for many competitive exams like MPSC, UPSC NET SET GATE.

PSO5: Best problem-solving skills in students would encourage them to carry out innovative research projects thereby making them to use knowledge creation in depth. Enable the students to be resourceful in identifying the plants

PSO6: Knowledgeable, disciplined students with good values, ethics, and kind heart will help in nation building globally.

Student should be aware of ethical issues and regulatory considerations while addressing society needs for growth with honesty.

M.Sc. Zoology

Specific Outcomes (PSO)

PSO1:Used the evidences of comparative biology to explain how the theory of evolution offers the only scientific explanation for the unity and diversity of life on earth.

They are able to use specific examples to explicate how descent with modification has shaped animal morphology, physiology, life history, and behavior.

PSO2: Explicated the ecological interconnectedness of life on earth by tracing energy and nutrient flows through the environment.

They are able to relate the physical features of the environment to the structure of populations, communities, and ecosystems.

PSO3:Subjects such as invasive or endangered species, embryonic development in mammals and ageing in social insects.

Lead to advances in medicine to prevent disease amongst both animals and human beings.

PSO4: Developed knowledge and understood of living organisms at several levels of Zoological and Biological organization from the molecular, through to cells and whole organisms

and ecosystems all organs of evolutionary perspectives. Understood how the chemistry and structure of the major biological macromolecules, including proteins and nucleic acids, determines their biological properties.

PSO 5: Understand and analyze the ecological and evolutionary significance of different taxa of animals.

PSO 6: To analyze the mechanisms involved in life processes up to the molecular level.

PSO 7: To perform the analytical experiments in various fields of biological science.

PSO 8: To identify a research problem and to formulate a scientific solution.

B.L.I,Sc

Programme Specific Outcomes:

LIS Students:

1. Can apply the skills and attitudes of visioning, entrepreneurship, advocacy, planning and management of Libraries and Information Centres (LICs) and effective leadership in the LIS field.
2. Possess the skills to respect, engage and collaborate with a diverse community in order to advocate for and construct inclusive, meaningful, and participatory library services, programmes and resour
3. Can perform and access research based practices through the application of information literacy, inquiry, and research methods including data discovery, analytics and qualitative measures.
4. Understand the need, importance and management of Library and Information Centres.
5. Understand various information sources, systems and services for getting authentic and relevant information in the information explosion era.
6. Understand and apply the principles of Library Cataloguing and Classification.
7. Understand the basics of Information and Communication Technology and application of Information Technology in Library and Information Centres.

PROGRAMME OUTCOMES AND COURSE OUTCOMES

General English for B.A, B.Com., B.Sc Programme Outcomes

Objectives:

This programme aims at enhancing the students' knowledge of English that enables them to communicate in the language effectively in all contexts of life where English is the preferred language.

It also targets at bridging the gap between knowledge and performance which is a common malady that students face. This programme being the learner-cantered and activity-based English classroom would faster the skills which students need in order to use the language efficiently in all context of life- both personal and professional. It further addresses all the aspects of the English language with proper attitudinal, value based transformation by inculcating compatible intellectuality, creativity and cultural inclusivity among the learners.

Outcomes of Students:

The students will be able to use their previous skills of English Language to tune with their present requirements in communicating efficiently in English.

Further, the students will be able to communicate in English through all skills and sub-skill of language viz. listening, speaking, reading and writing.

The students will understand the value systems in the society as a whole and in the family in particular and thus proceed to transforming their personalities attitudinally and cognitively that leads them towards social inclusivity.

B.A, B.Com and B.Sc General English

Course Outcomes: Semester-I

-To enhance the language skill that students have already learnt in previous classes.

- To engage the students with activities through the textual exercises to enhance their skills.

- To enable students to understand attitude, values and soft skill.

Course Outcomes: Semester-II

-To go through a literary piece and appreciate it by reading extensively.

-To practice the language elements in order to master language and communicative skills.

-To understand soft skills useful in their educational and professional career.

Course Outcomes: Semester-III

-To master more language skills in speaking, Listening, Reading and Writing.

- To enable the students to be sensible towards the value-system in the society.

- To make students understand a literary piece (Genre) and appreciate it.

Course Outcomes: Semester-IV

-To understand and appreciate critically a literary piece of writing that boosts their personality.

- To use language skills more effectively than the earlier in their every day and professional communication.

- To bring about the behavioural and attitudinal changes through value education and inculcation of soft skills.

DEPARTMENT OF TELUGU

COURSE OUTCOMES

SEMESTER – I

CO1:

- To know the impact of Ancient literature values and the traditional issues.
- Understand the status of women strategy in Vedic period.

CO2:

- Inculcate the personality of modern women
- Understanding the modern concepts of "abhyudhaya kavithvam"

CO3:

- Understanding fiction writing
- To Realize the values lying the human lives

CO4:

- To acquire knowledge of ancient and modern grammar in Telugu
- To understand telugu vakyavisheshalu

SEMESTER – II

CO1:

- To understand the relation between god and nature and realize the value of belief, which leads to success
- Ancient significances of marriage system in India

- To know how to solve the problem

CO2:

- Ecological awareness, which is essential for human lives and natural resources like water, plants etc…
- Awareness about nature behavior

CO3:

- Brining awareness in storytelling.
- Encouraging the views of students to read various stories

CO4:

- To study about endangered arts

SEMESTER – III

CO1:

- To know the value of giving nature, that hikes the personality
- To Bringing the awareness on greediness
- Pride should not go ahead

CO2:

- To Bringing a view on original literature
- To Bringing the awareness on festivals and culture
- Morality in human beings

CO3:

- Importance of Telegu language
- Importance of personality development, attitude, action, belief and behavior

CO4:

- To study Sanskrit literature like chandassu, alankaraalu

SEMESTER – IV

CO1:

- To understand the value of truth in ancient Literature
- Devotion and philosophical values

CO2:

- Learn About modern Telangana poets like Kaloji,Ramireddy etc
- Knowing about Telangana special statehood movement

CO3:

- Knowing about Nizam rule in stories
- Research about our village names

B.A.History

COURSE OUTCOMES

S.NO	COURSE & SEM	OUT COMES
01	History of India (From Earliest Times to c.700 CE) (SEM-I)	Understand the salient features of Indus valley civilization II- Evaluate the features of Buddhism and Jainism III- Visualize the administration of Mauryas and the art and architecture of Mauryas IV- Identify the administration of Guptas and their contribution to Nalanda University V- Examine the Arab conquest of Sindu and the battle of Tarain.
02	History of India(C.E 700to 1526) (SEM-II)	I- Understand the foundation of the Delhi sultanate and the Sultanate administration. II- Recognise the Socio, economic and religious conditions under Vijayanagar Empire. To be acquainted with the nature of social and economic activities of the time. ● To understand the religious beliefs and cultural trend

		of the period with references to Sufi and Bhakti movement and literary and architectural activities
03	History of India (1526-1857 CE (SEM-III) Historical and Cultural Tourism (SEC-I) Understanding Heritage (SEC-II)	. III- Identify the condition of India under the Mughal Empire. IV- Explain the Administration and art and architecture of Mughals. V- Analyse the rise of the Marathas and the contribution of Shivaji. Highlight the significance of Tourism II. Bring out the guide lines of UNESCO on Heritage III. Describe the origin and development of ITDC IV. Analyse the qualities of a Tourist Guide
04	History of India (1858-1964 CE (SEM-IV)	To understand the cultural changes and socio-religious reform and revivalist movements in India like the Bramho Samaj, Prarthana Samaj, Wahabi and Aligarh movements etc. ● To be acquainted with the rise of nationalism in India with reference to moderates, extremists and revolutionaries. ● To develop understanding of the different aspects the Gandhian nationalism. ● To make the students aware of the growth of communalism in India with reference to the ideologies and politics of parties like the Muslim League, the RSS and the Hindu Maha Sabha. ● To explain the causes and impact of the partition of India in 1947. ● To understand the character of post-independence Indian state.
05	World History (1453-1815 CE) (SEM-V)	• Students learn and understand the various movements that heralded the transformation from Medieval to Modern World. • Study of Revolutions help the students understand the factors that changed the course of events and gave new meaning to life, liberty and equality. • Study of Industrial Revolution and Feudalism make students understand the remarkable changes brought on the socio-economic front at the global level.

06	History of Telangana (From Earliest Times to 1724 CE) (SEM-V) Islamic History and Culture (From Earliest Times to the Fall of Ummayads)	*Historical sources of Telangana region - Emergence of its modern shape – Birth of *Telangana state as main component to enrich students' knowledge about their region. *To draw references from different periods of history responsible for the growth of Telangana region. *To equip students to know the origin and early history of Kakatiyas and their contributions to culture. *Exposure to students about the political conditions in Telangana region from 1687-1724 and seek to project the history of Telangana on an elevation phase.
07	World History (1815-1950 CE) (SEM-VI)	*The course is organized in such a way that even students without prior exposure could acquire an interest in the subject of world history. To imbibe students the factors leading to reform movements & acquireknowledge. *History & Emergence of Nation states - to prepare students to know about their achievements. *Theobjective of the courseisto know that the students learn how the end of feudalism came till the fall ofNapoleon. *To lay emphasis and make students know the importance of the congress of Vienna- Consequent significance of the Unification movements. *To give an idea to students the factors responsible for the outbreak of World War I- Achievements and Failures. *To know the conditions of Europe between the World Wars, the significant role it played. *Causes for the outbreak of World War II and Results- To present an integrated picture to students about the conditions prevailed in the world.
08	History of Telangana (1724-2014 CE) (SEM-VI)	*To foster to the students the essence of historical background of Telangana and its formation & the

	Islamic History and Culture (Rise of Abbasids to Crusades)	struggle in achieving it. *The students are given knowledge on how the regional parities in 1980's rose? Charges and Consequences - Formation of Telangana state.
09	Introduction to Archaeology (SEC)	To make the students understand the definition and history of development of archives and museums. ● To know about the types of archives and museums with reference to collection policies, ethics and procedure collection, documentation and preservation etc. ● To acquire knowledge about museum presentation and exhibition . ● To emphasize on education and communication outreach activities.

B.A.Economics

COURSE OUTCOMES

S.NO	COURSE & SEM	OUT COMES
01	Micro Economics (SEM-I)	Students will be able to apply supply and demand analysis to examine the impact of government regulation and it also enable them to explain determinants of demand, responses of market and the benefits of exchange. 1. To understand how market works, identify the various determinants of firms demand for factor services, monopoly and oligopoly in factor market and market equilibrium. 2. To introduce the student to the basic micro economic concepts like demand, supply, production, cost and revenue and the theories explaining their determination. 3. To enable the student to apply the theories in analyzing real world micro issues

02	Macro Economics (SEM-II)	It provides knowledge regarding the formulation of broad economic policies that maximize the level of national income, providing economic growth to achieve sustainability, full employment, price stability, external balance, increasing productivity in the long run 1. To give an insight to the students about the basic concepts used in Macro economics. 2. To enable the students to understand the theoretical framework and the working of an economy as a whole. 3. To suggest the policy alternatives used in controlling the economy. 4. To explain the process of calculating national income, identify its components, demonstrate green accounting and social accounting. To enable the students to understand the theoretical framework and the working of an economy as a whole. To illustrate the meaning of inflation, deflation and stagflation, identify different kind of inflation, causes and effects of inflation on the different sectors of the economy.
03	Statistics (SEM-III) Agricultural Marketing (SEC-IV)	. 1. To familiarize the students with statistical tools and techniques. 2. To enable them to apply these tools in economics. 3.Getting awareness on the increased use of mathematical methods in Economics. 4 Apply mathematical tools and methods for understanding the theory of Economics and develop the capability of applying the same in solving problems in Economics 1.To provide a detailed treatment of issues in agricultural Marketing. 2. To familiarize students with policy issues those are relevant to Indian Agricultural Marketing policies. 3. To enable them to analyse the agricultural issues using the economic concepts.
04	Indian Economy (SEM-IV)	1 .Able to understand nature of Indian Economy and Economic planning in India 2 Aware about importance of agriculture in Indian economy and land reforms . 3 Able to understand Industrial Policy and realize development of Industrial sector in India 4 Aware about external sector and important areas of concern.
05	Indian Economy (SEM-V)	1.It makes learners to understand the economic functioning and conditions of our country in the context of past, present and future. 2.To enable the students to have an understanding of the various issues of the Indian Economy. 3. To enable the students to comprehend and critically

		appraise current issues and problems of Indian economy 4. The focus of this course is on the development of Indian Economy since Independence. 5. To understand the importance of planning undertaken by the government of India.
06	Economics of Development (SEM-V)	*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 *To enable the students to understand the basic concepts of Development and Growth. *It also intends to provide the theoretical framework for growth and development discourses under different schools of economic thought and a better insights and knowledge on issues and challenges on economic development.
07	Telangana Economy (SEM-VI)	1. To enable the students to have a basic understanding of emerging trends and issues of Telangana Economy. 2. To understand the structural changes, sectoral aspects and features of the Telangana Economy since the formation of the Kerala state.
08	Economics of Rural Development (SEM-VI)	*Remember the basic concepts related to rural development. • Develop a proper understanding of the rural situation and the need for rural development in India. • Analyse the approaches to rural development adopted so far in India and evaluate their relevance to the current situation in rural areas. • Understand the context in which rural development programmes were implemented so far in India under different categories/ typologies. • Analyse the lessons that could be learnt from various rural development programmes. • Critically evaluate the relevance and effectiveness of the ongoing rural development programmes. Critically evaluate the role of GOs, NGOs, PRIs and CBOs in rural development. • Analyse the role of participatory approaches both in formulating and evaluating rural development projects. *Analyse the relevance and effectiveness of efforts

		aimed at bringing about institutional changes in agriculture, rural industries and rural infrastructure . • Analyse the problems and prospects of MSMEs.
	PROJECT WORK (SEC-VI)	1.To develop exposure in research work among students. 2. The project work may be done on any economic problem relevant to the study of Economics.

B.A. Political science

COURSE OUTCOMES

S.NO	COURSE & SEM	OUT COMES
01	Under Standing Political Theory (SEM-I)	To understand the concepts of Political Science and to have a knowledge about the significance of Political Science. • To understand the nature and scope of political theory. • To understand the significance of political theory. • To acquaint with the theories, approaches, concepts and principles of political theory. • To appreciate the procedure of different theoretical ideas in political theory. • To Interpret and assess information regarding a variety of political theory. • To understand the various traditional and modern theories of political science. • To evaluate the theories of origin of the state. • To comprehend the sources of political information's
02	Western political Theory (SEM-II)	1.Providing an insight into the dominant features of Ancient Western Political Thought: Ancient Greek political thought with focus on Aristotle and Plato; Roman Political Thought: its contributions with special

		emphasis on the emergence of Roman law. 2- Examining the features of Medieval Political Thought. 3- Evaluating the Renaissance; political thought of Reformation; and Machiavelli. 4- Critically examining Bodin's contributions to the theory of Sovereignty; Hobbes as the founder of the science of materialist politics; Locke as the founder of Liberalism with focus on his views on natural rights, property and consent; and Rousseau's views on Freedom and Democracy; Bentham's Utilitarianism; and John Stuart Mill's views on liberty and representative government. 5- Taking an insight into the following: Hegel's views on Civil Society and State; Utopian and Scientific socialism: basic characteristics. 6- Examining the varieties of non-Marxist socialism: Fabianism, Syndicalism, Guild Socialism, German Revisionism.
03	Indian Political Thought (SEM-III)	. • To appreciate the various like Kautilya,Dr.B.R.Ambedkar &Gandhiji social and political ideas of Indian political thinker • To inculcate the spirit of ahimsa, satyagraha, through Gandhi ideology • To criticizes the causes for the theory of caste system in India and their impact.
04	Constitution and Politics of India (SEM-IV) Laws,Duties,Rights of Citizens(SEC-IV)	CO 1- Outlining the basic values and philosophy of Indian Constitution as expressed in the Preamble. CO 2- Studying Fundamental rights , duties and Directive Principles of State Policy. CO 3- Examining Indian federalism through Centre-state relations. CO 4- Evaluating the structures of government at the National level. CO 5- Evaluating the structures of government at the State level. CO 6- Examining the role of Political parties in Indian Democracy. CO 7- Studying the Election Commission and electoral process in India. CO 8- Assessing Judicial Activism in India with particular reference to Supreme Court. CO 9- Studying the process of interaction between society and politics in contemporary India- Caste, tribe and religion. CO 10- Creating awareness about social movements

		and empowerment related to women.
05	Political Thought (SEM-V)	To understand the nature, methods and significance of political thought. • To analyse the theory of ancient & medieval political thought of Greek and India. • To appreciate the ideas of them in context of classification of government, law and revolutions and slavery. • To understand the relationship between religion and politics in early modern western political thought. • To acquire knowledge about modern political thinkers and theirs view on state craft. • To compare with the social contractualists thoughts of Hobbes, lock, and Rousseau and their view regarding state, government and general will. • To appreciate the concept of liberty, representative government., • To analyse the Marxist philosophy in making a better society. • To thoroughly compare the democratic revolution and creation of civil society. • To appreciate the various social and political ideas of Indian political thinker • To inculcate the spirit of ahimsa, satyagraha, through Gandhi ideology • To criticizes the causes for the theory of caste system in India and their impact.
06	International Relations (SEM-V)	It inculcates knowledge of various concepts of International Relations for example Collective Security, Balance of Power etc. It also helps to understand various process of International Relation. It studies about UNO which is the only one International Organization functioning for the maintinanence of International Peace and Security To understand the evolution, scope and significance of international relations and the rise of sovereign state system ∗ To analyze the history of international relational through the causes and phases of colonialism. ∗ To know the impact of first world war and second world war and its causes and consequences ∗ To criticizes the various ideologies which lead to the destruction of world. ∗ To appreciates the post war developments through the emergence of third world. ∗ To understand the concept of power, national, regional ,global and peace security

		∗ To acquaint with the international organizations and their modules nations.
07	Political Thought (SEM-VI)	To understand the nature, methods and significance of political thought. • To analyse the theory of ancient & medieval political thought of Greek and India. • To appreciate the ideas of them in context of classification of government, law and revolutions and slavery.
08	International Relations (SEM-VI)	CO 1- Explaining scope and subject matter of International Relations as an autonomous academic discipline. CO 2- Approaches and methods to study the discipline through Political realism, Pluralism and Worlds system's Model. CO 3- Examining the issues of Underdevelopment, Terrorism, Regionalism and Integration that characterizes the Post second world war order. CO 4- Studying the role of Diplomacy, Propaganda and Military capabilities in the making of foreign policy. CO 5- Explaining certain basic concepts like Globalisation in contemporary world order. CO 6- Describing the Cold War phases and understanding the post Cold War era. CO 7- Discussing the developments in European Ethno-nationalism since 1990's. Tracing the growth of European Union CO 8- Examining Indian Foreign Policy: Basic Principles, Evolution and Bilateral Relations. CO 9- Evaluating the working of UN and its organs; Peace keeping Function and Human Rights. CO 10-Analysing the Foreign Policy of USA and China
09	Contemporary Political Economy (GE) (SEM-V)	CO 1- Explaining the determinants and features of Indian Foreign Policy. CO 2- Evaluating the role of UN and assessing its

		relevance in future. CO 3- Analysing the various dimensions of the working of the Indian Administrative system- PMO, Cabinet Secretariat, UPSC (Recruitment and Training of civil servants) CO 4- Understanding the concept of Human Rights. Assessing the availability of Human Rights in the Constitution of India. Studying the State Human Rights Commission. CO 5- Examining the dynamics of Globalisation

B.A.Public Administration

COURSE OUTCOMES

S.NO	COURSE & SEM	OUT COMES
01	Basics of Public Administration (SEM-I)	1. To understand the nature and scope of Public Administration; 2. To appreciate the methodological pluralism and synthesizing nature of knowledge in Public Administration; 3. To comprehend the changing paradigms of Public Administration; 4. To acquaint with the theories, approaches, concepts and principles of Public Administration; 5. To understand the administrative theories and concepts to make sense of administrative practices.
02	Development dynamics and Emerging Trends (SEM-II)	• Appreciate the nature, scope and changing paradigms of Public Administration; • Understand the synthesizing nature of knowledge of public administration from public perspective; • Grasp the administrative theories, concepts and principles to make sense of administrative practices.
03	Indian Administration (SEM-III)	.1. To understand the historical evolution and socio-economic, political, cultural and global context of

		Indian Administration; 2. To identify the transformative role of Indian Administration; 3. To make out the multi-dimensionality of problems and processes of Indian Administration; 4. To understand the form and substance of Indian Administration; and 5. To appreciate the emerging issues in Indian Administration in the context of changing role of state, market and civil society.
04	State Administration and Emerging issues (SEM-IV)	• To discern the connects and disconnects between structure, purpose and process and results in Indian Administration; •To Understand the Indian Administration role as the main instrument of State to achieve its developmental goals; • To Appreciate the varying historical, socio-economic, political and other conditioning factors that gave Indian Administration its distinct nature to the learner
05	Human Resource Management (SEM-V)	1. To comprehend the nature, scope, structure & processes of human resource management; 2. To identify the systems and processes of financial and material management; 3. To appreciate institutional capacity building strategies and programmes; and 4. To understand the changing paradigms of Resources management.
06	E-Governance Concept Instructions Methods (SEM-V)	1. To explain the meaning and importance of e-governance; 2. To provide the students with the analytical skills to comprehend the e-governance initiatives in India; 3. To make the learner understand e-governance initiatives at national and international level; 4. To inform the learner about the e-Governance measures initiated in Telangana state.
07	Urban Governance (SEM-VI)	*Critically appreciate the relationship of local governance and development; • Appreciate the rural and urban institutional arrangements for development; • Understand the processes and results of systems of delivery of welfare programmes
08	Financial and Material Resource Management	Understand the way in which the public power is exercised and public resources are managed and

	(SEM -VI)	expanded; • Unravel the varying methods of performance assessment of public institutions; and • Appreciate the changing paradigms of human resource management.
09	Good Governance (SEC)	The word 'Governance' appears in diverse academic disciplines. At general level, governance refers to theories and issues of social coordination and the nature of all patterns of rule. The theories of governance have changed the understanding of various concepts of state and its institutions. New jargon of words emerged into the social science literature with different connotations. In this background, the present course is aimed to provide an indepth understanding of the basic tenets and trends of Good Governance.

B .A Computer Applications-course- Outcomes Courses:HECA/HPCA/EPCA

SEM	CODE	COURSE TITLE	OUTCOMES
SEM-I	CORE-I	**COMPUTER FUNDAMENTALS**	**CO1** :To implement applications of IT in the areas of business: **CO2** :Types of Operating System, Booting Process **CO3 :**Word processing- creating, editing, saving, printing **CO4** :Worksheet to analyze data with graphs & Charts, Advanced tools to compute data.
SEM-II	CORE-II	**COMPUTEPROGRAMMI G WITH C**	**CO-1:** Develops knowledge on basics of computers and Illustrate the flowchart, algorithm, pseudo code for a given problem, build up programs using various data types and operators **CO-2:** Develop conditional and iterative statements for a given problem **CO-3:** Implementing programs using arrays, pointers, dynamic memory management, structures and unions **CO-4:** Develop solution for a given problem

			using modular approach and perform file handling
SEM-III	CORE-III	**DATABASE MANAGEMENT SYSTEM**	**CO-1**: Appreciate the underlying concepts of database system architecture and technologies **CO-2:** Develop database schema for a given scenario **CO-3:** Query the database using the relevant programming language **CO-4:** Design schedules using multiple transactions
SEM-IV	CORE-IV	**INTERNET TECHNOLOGIES**	**CO-1**`Learn Hyper Text Mark-up Language and be able to develop structure and design for web pages. **CO-2:** Learn usage of style sheets in developing the structure and design and fine tuning of web pages. **CO-**3: Learn basic features of JavaScript language and its usage in creating interactive web pages. **CO-4:** Learn JavaScript built-in object features, regular expressions usage, exception handling creating interactive web pages. **CO-5:** Learn the importance of good design and features and concepts relating
SEM-V	CORE-V	**MULTIMEDIASYSTE AND APPLICATIONS**	**CO-1**: Developed understanding of technical aspect of Multimedia Systems. **CO-2**: Understand various file formats for audio, video and text media. **CO-3:** Develop various Multimedia Systems applicable in real time. 4. Design interactive multimedia software. 5. Apply various networking protocols for multimedia applications. 6. To evaluate multimedia application for its optimum performance. **CO-4**: To develop multimedia application and analyze the performance

	ELECTIVE-I-PAPER-VII	**OBJECT ORIENTED PROGRAMMING WITH C++**	CO-1: Relate the basic concepts of oops to solve real problems CO-2: Demonstrate the creation of objects and access specifiers CO-3: Classify the advanced OOPs features like inheritance polymorphism etc. CO-4: Demonstrate exception handling, Streams, STL in formulating the solution for a given problem
SEM-VI	CORE-VI	**VISUAL PROGRAMMING**	**CO-1**. understand the programming algorithm, process, and structure **CO-2.** understand and identify the fundamental concepts of object-oriented programming **CO-3.** understand and use the concepts of objects, primitive value, message, method, selection control structure, repetition control structures, object reference, container, and method parameter. **CO-4.** know how to write and run a complete program 5. understand and identify the importance of object-oriented programming for the Internet based electronic commerce 6. understand the impact of Java and VB.NET on business.
	ELECTIVE-II-PAPER-VIII-	**SOFTWARE ENGINEERING**	**CO-1:** Analyse software engineering framework activities and process models that can be tailored with appropriate methods for developing the projects **CO-2:** Design relevant software system models from the available software requirements and validate desired user model with realistic constraints **CO-3:** Deliver quality software products by applying software testing strategies and product metrics over the entire system life cycle **CO-4:** Specify contemporary issues of handling risk management in Software development

B.COM (Computer Application)

Programme Outcomes

At the end of three year B.Com programme, the students will be able to :-

PO 1- Build a strong foundation in accounting, management and business subjects

PO 2- Seek variety of career options in accounting, management and business related fields

PO 3- Equip with skills and knowledge to excel in their future careers

PO 4- Develop critical thinking skills in students

PO 5- Enter master programmes like M.Com, MBA and pursue professional programmes like C.A, CMA, C.S, etc.

PO 6- Develop entrepreneurial skills

Program Specific Outcomes

PSO1- Learners venture into Managerial positions, Accounting areas, Banking Sectors, Auditing, Company Secretaryship, Teaching, Professor, Stock Agents, Government Employment etc.

PSO2 - Enables learners to prove themselves in different Professional examinations like CA, CS, CAT, GRE, CMA, MPSC, UPSC etc.

PSO3 -Learners further move towards research in the field of Commerce.

PSO4- Enables students to demonstrate Progressive learning of various tax issues and tax forms related to individuals and businessmen and setting up their own business start up.

PSO5 – The vast syllabi covers various fields of commerce and accountancy which helps students grasp practical and theoretical knowledge.

Course Outcomes

Sl.No.	SEMESTER	COURSE	OUTCOMES
1	SEM. I	Financial Accounting–I	• Inculcates knowledge of various accounting concepts and policies. • Introduces the students to working

			knowledge of Accounting Standards issued by the ICAI.
2	SEM. I	Business Organisation and Management	• To understand the concept & functions and importance of Business Organisation and management and its application. • To make the student understand principles, functions and different management theories.
3	SEM. I	Fundamentals of Information Technology	• To make students familiar with computer environment • To make students familiar with operating systems. • To develop skill among students in applications of internet in commerce education
4	SEM. II	Financial Accounting–II	• To enable the students to learn the basic concepts of Partnership Accounting, and allied aspects of accounting. • The student will get thorough knowledge on the accounting practice prevailing in partnership firms and other allied aspects. • To find out the technical expertise in maintaining the books of accounts. • To encourage the students about maintaining the books of accounts for further reference.
5	SEM. II	Business Laws	• The student will well verse in basic provisions regarding legal frame work governing the business world. • To know the students with the basic concepts, terms & provisions of Mercantile and Business Laws. • To develop the awareness among the students regarding these laws affecting trade business, and commerce.
6	SEM. II	Programming with C& C++	• To educate students with the different languages of computer like C and C++
7	SEM. III	Principles of Insurance	• Understand the basic functions and the legal principles of insurance. • Understand the basic operations of an insurance company. • Be able to apply their knowledge on the Insurance-related legal principles to simple cases.

8	SEM. III	Advanced Accounting	• To provide the knowledge of various accounting concepts • To impart the knowledge about accounting methods, procedures and techniques.
9	SEM. III	Business Statistics-I	• To understand the different concept of population and sample and to make students familiar with Calculation of various types of averages and variation. • To learn the Measures of Central Tendency, Dispersion, Skewness and Correlation in business.
10	SEM. III	Relational Database ManagementSystem	• To learn the different system concepts used in Software of Database Management. • To understand the different types applications of Software Database Management.
11	SEM. III	Income Tax	• Students will be versed in the fundamental concepts of different aspects of tax. • Students can understand Income Tax system properly, and can get the knowledge of different tax provisions. • To give knowledge about preparation of, Submission of Income Tax Return, Advance Tax, and Tax deducted at Source, Tax Collection Authorities under the Income Tax Act, 1961.
12	SEM. IV	BusinessStatistics-II	• To use regression analysis to estimate the relationship between two variables and to use frequency distribution to make decision. • To understand the techniques and concept of different types of index numbers and Analysis of Time Series.
13	SEM. IV	Web Technologies	• To learn the skill how to use VBScript, transform Web pages from static text and images into functional, interactive, and dynamic e-commerce tools. • To embed VBScript code in an HTML document. • To use VBScript operators; write code that

			makes decisions based on existing conditions, using control structures and loops. • To enable students with a communication of Web page visitor using Message and Input boxes. • To use the DOM to control the layout of HTML pages, add effects, and get information from users.
14	SEM. IV	Advanced Aspects of Income Tax	• Students will be versed in the fundamental concepts of different aspects of tax. • Students can understand Income Tax system properly, and can get the knowledge of different tax provisions. • To give knowledge about preparation of, Submission of Income Tax Return, Advance Tax, and Tax deducted at Source, Tax Collection Authorities under the Income Tax Act, 1961.
15	SEM. IV	Cost Accounting	• To understand Basic Cost concepts, Elements of cost and cost sheet. • Providing knowledge about difference between financial accounting and cost accounting. • Ascertainment of Material and Labor Cost. • Student's Capability to apply theoretical knowledge in practical situation will be increased.
16	SEM. IV	Computerized Accounting	• To make students aware of accounting packages like tally. • To acquaint students with practical approach to accounts writing by using software package and by learning various accounts.
17	SEM. IV	Ecommerce	• Analyze the impact of E-commerce on business models and strategy. • Describe the major types of E-commerce. • Explain the process that should be followed in building an E-commerce presence. • Identify the key security threats in the E-

			commerce environment.
18	SEM. V	Regulations of Insurance Business	• Understand the Rules and important implications of cost-control provisions in an insurance contract, namely, deductibles, co insurance, and limits, and other simple insurance clauses at Insurance Business.
19	SEM. V	Indian Economy	• To enable students to understand students to a new approach to the study of the Indian Economy. • To help the students in analyzing the present status of the Indian Economy. • To rendering the process of integration of the Indian Economy with other economics of the world.
20	SEM. V	Cost Accounting	• To understand Basic Cost concepts, Elements of cost and cost sheet. • Providing knowledge about difference between financial accounting and cost accounting. • Ascertainment of Material and Labor Cost. • Student's Capability to apply theoretical knowledge in practical situation will be increased.
21	SEM. V	Business Law	• The student will well verse in basic provisions regarding legal frame work governing the business world. • To know the students with the basic concepts, terms & provisions of Mercantile and Business Laws. • To develop the awareness among the students regarding these laws affecting trade business, and commerce.
22	SEM. V	Banking Theory & Practice	• To enlighten the students' knowledge on Banking Regulation Acts. • To give a thorough knowledge on Indian Banking System and Acts pertaining to it. • To provide understanding of nature, importance, of banking sector.

			• To know the structure of finance related areas.
23	SEM. V	Auditing	• Students will be versed in the fundamental concepts of Auditing. • Students can understand Auditing system properly, and can get the knowledge of different types of Audit. • To give knowledge about preparation of Audit report.
24	SEM. V	E-Commerce	• Analyze the impact of E-commerce on business models and strategy. • Describe the major types of E-commerce. • Explain the process that should be followed in building an E-commerce presence. • Identify the key security threats in the E-commerce environment.
25	SEM. V	Object- Oriented Programming with C++	• To educate students with the different languages of computer like C and C++
26	SEM. VI	E-Banking and E-Insurance	• Understand how to apply the Electronic banking and Electronic Insurance in the Banking and Insurance Companies. • Understand the fundamental changes in banking and Insurance have extended to electronic platform.
27	SEM. VI	Sectors of Indian Economy	• To enable students to understand students to a new approach to the study of the Indian Economy. • To help the students in analyzing the present status of the Indian Economy. • To rendering the process of integration of the Indian Economy with other economics of the world.
28	SEM. VI	Managerial Accounting	• Critically analyse and provide recommendations to improve the operations of organizations through the application of management accounting techniques. • Demonstrate mastery of costing systems, cost management systems, budgeting systems and performance measurement systems. • Demonstrate the need for a balance between financial and non-financial

			information in decision making, control and performance evaluation applications of management accounting.
29	SEM. VI	Company Law	• To impart students with the knowledge of fundamentals of Company Law and provisions of the Companies Act of 2013. • To apprise the students of new concepts involving in company law regime. • To acquaint the students with the duties and responsibilities of Key Managerial Personnel.
30	SEM. VI	Financial Institutions & Markets	• Enable the students with Financial Markets and its various segments. • To give the students and understanding of the operations and developments in financial markets in India. • To acquaint them to gain an insight into the functioning and role of financial institutions in the Indian Economy.
31	SEM. VI	Commerce Lab	• Students practice their theoretical knowledge gained in the classroom. • Students carry on more and more experiments at Commerce Lab. • Mock commerce and business activities are undertaken in Commerce Lab.
32	SEM. VI	Web Technologies	• To learn the skill how to use VBScript, transform Web pages from static text and images into functional, interactive, and dynamic e-commerce tools. • To embed VBScript code in an HTML document. • To use VBScript operators; write code that makes decisions based on existing conditions, using control structures and loops. • To enable students with a communication of Web page visitor using Message and Input boxes. • To use the DOM to control the layout of HTML pages, add effects, and get information from users.

33	SEM. VI	Relational Database Management Systems	• To learn the different system concepts used in Software of Database Management. • To understand the different types applications of Software Database Management.

PSO OF BBA

PROGRAM SPECIFIC OUTCOMES

PSO 1 : Understand of the corporate world

PSO 2 : Analyse the theoretical knowledge with the practical aspects of Organizational setting and techniques or management.

PSO 3 : Determine conceptual and analytical abilities required for effective decision making.

PSO 4 : Understand the dynamic and complex working environment of Business.

PSO 5 : Understand the problems faced by the business sector in the Current scenario.

PSO 6 : Analyse the wps and downs of the stock market.

PSO 7 : Understand the rapid changes of financial services include banking and insurance sectors.

PSO 8 : Determine the various PEST (Political, Economic, and Social Technological) factors influence on changes of business

environment.

PSO 9 : Understand the micro and macro marketing environment.

PSO 10 : Analyze the various financial and accounting concept including Balance sheet , trial balance, etc.,

PSO 11 : Understand the international trade procedure and documentation.

PSO 12 : Analyse the various aspect of business research in the area of marketing, human resource and finance.

PSO 13 : Determine the functional areas of management such as Production, purchasing, marketing, sales, advertising, finance, human resource system.

PSO 14 : Understand the SERQUAL of the various service industry.

PSO 15 : Understand the Forms of business organization.

PSO 16 : Understand the factors influence the consumer buying behavior.

PSO 17 : Determine the stages of her product development process.

PSO 18 : Understand the types of business communication and business letters.

PSO 19 : Determine the organizational behavior and its confliect.

PSO 20 : Analyse the sampling techniques of collecting primary and secondary data.

PSO 21 : Understand the methods of collecting primary and secondary data.

PSO 22 : Analyse the tools and techniques of data.

PSO 23 : To understand the construction of scaling techniques.

PSO 24 : Determine the steps involved in design of questionnaire.

PSO 25 : Analyse and preparation of project report for the Functional areas of research.

PRINCIPLES OF MANAGEMENT (SEM-I)

Course outcomes of the course:

Classify the Management by objectives helps for the better management of resources and activities of an organization.

Describe the Effective plans co-ordinate the organizational work and eliminate unproductive effort.

Classify the division of work leads to efficient performance of duties.

Write down the point to help Training gives an employee confidence in handling the job assigned to him.

To find out good control system should be easily installed and economically maintained.

Identify to ensure successful implementation of the decision making through follow up procedures.

Basics of Marketing (SEM-I)

*Intercepts and familiarizes students with different and basic concepts of marketing mix, MIS and Marketing Research.

- Updates students about marketing challenges faced by marketing managers in 21st century.
- Makes students aware about competitive strategies for market leader, and various aspects of market.

Business of Economics(SEM-I)

- To provide students knowledge of Micro Economic concepts and inculcate an analytical approach to the subject matter.
- To arouse the students interest by showing the relevance and use of various economic theories.
- To apply economic reasoning to solve business problems.

ORGANISATIONAL BEHAVIOUR (SEM-II)

(Course outcomes of the course:

*Identify the study of Human Behaviour in organization

*Describe the personality and its determinate of personality.

*Write down the decision marketing and its classified into individual, group division making.

*Identify the communication and its classification, barriers to effective communication.

*Describe the leadership and its quality of lenders, behavious of lender, classification of lender.

*Identify the conflict and its type of conflict

*Classify the stress and managing stress

*Identify the organization change and steps in managing change.

BUSINESS STATISTICS(SEM-II)

Course outcomes of the course:

*Describe the measures to nay statistic analysis and methods.

*Clarify the significance of diagrams and graphs.

*Identify the objectives and types of Average.

*Describe the Mean. Median, Mode.

*Write down the methods of depression, Quartzite deviation.

*Identify uses of distortion.

*Classify the methods of studying Correlation Analysis .

*Describe the types of Correlation Rank, Correlation, Co-efficient Correlation.

*Describe the construction of Index numbers.

FINANCIAL ACCOUNTING(SEM-II)

Course outcomes of the course:

*Describe the useful information to student's business activities in future.

*Write down the point to know the financial position of the business students.

*Describe the discovers & prevents errors and frauds in business students.

*Write down the point to know the Assets & liabilities of the business firms for business students.

*To find out the correct cost of production in business students.

MARKETING RESEARCH (SEM-III)

Course outcomes of "Marketing Research"

*Describe the applications of Marketing Research.

*Identify the position of Marketing Research in India.

*Write down the Scientific methods in Marketing Research.

*Classify the methods of research design such as descriptive Research and experimental research.

*Describe the methods of collection of data .

*Describe the methods of interview and observation.

*Classify the types of sampling.

*Write down the measurements of scaling techniques.

*Describe the techniques and limitation of motivation research.

*Identify the various applications of consumer research.

FINANCIAL MANAGEMENT(SEM-III)

Course outcomes of the course:

Describe the concept of financial management and its function

Identity the principles of capital structure

Identity the source of finance

Describe the working capital management and its techniques of forecasting in working capital.

Describe the concept of cost of capital and its classifications

Identity the determination of cost of capital

Write down the characteristics of budgetary control

Identity the preparation of production, sales, cash budget, flexible budget

Describe the different factors affecting in capital investment proposal

Classify the capital budgeting appraisal methods

BUSINESS LAW(SEM-IV)

Course outcomes of the course:

- Describe the law and commercial law rules and regulation.
- Identify the contract and its classification of contract.
- Write down the essential of a valid contract.
- Describe the capacity of parties and incapacity of parties in contract.
- Write down the sale of good act.
- Identify the transfer of property.
- Identify the agent, and its types of agent, duties right of an agent.
- Describe the companies act and type of company, characteristic of company.
- Classify the difference between condition and warranty.
- Identify the unpaid seller and its rights of unpaid seller.

FINANCIAL MARKETS AND SERVICES (SEM-V)

Course outcomes of the course:

Write down National Stock exchange (NSE) and difference between Bombay Stock exchange (BSE)

Write down and its classification of Investment.

Write town the point to the current market conditions.

Identify the problems of security exchange board of India (SEBI)

To increase the awareness of the investors investing the securities of shares, bond and debentures.

Identify the competition of security market.

Investors analyse the profile of the company and financial statement of the company.

Company can issue the bonus shares and Right shares.

Write down the primary market and difference between secondary market.

Evaluate the market condition and using formula plan, and financial tools.

BROADMANAGEMENT(SEM-V)

Course outcomes of the course:

Write down to gain an understanding and appreciation of the principles and applications relevant to the planning, design, and operations of manufacturing/service firms.

Identify to develop skills necessary to effectively analyze and synthesize the many inter-relationships inherent in complex socio-economic productive systems.

Classify the reinforce analytical skills already learned, and build on these skills to further increase your "portfolio" of useful analytical tools for operations tasks.

Classify the some ability to recognize situations in a production system environment that suggests the use of certain quantitative methods to assist in decision making on operations management and strategy.

To understand how Enterprise Resource Planning and MRPII systems are used in managing operations.

Write down the points of increase the knowledge, and broaden the perspective of the world in which you will contribute your talents and leadership in business operations.

RURAL MARKETING(SEM-VI)

Course outcomes of the course:

Write down the increase the awareness of the bargaining purchasing power, vast size and demand base of the once neglected Indian hinterland.

Describe the Rural marketing is becoming an important part of the market development strategies of all FMCG companies and services companies as well.

Classify the know about the rural consumer, his preferences, his behavior and how he is different from his urban counterpart.

Write town the point to the important parameters that are influencing Rural Consumer Behaviour

Write down the Indian village and the main problems faced by rural markets in distributing their products in rural markets.

To find out understand the market and Agricultural markets how they all classified in our country.

Describe the marketing strategy of various Agricultural products and the process of Agricultural marketing.

To analyse the various complications that are involved in Agricultural

marketing in our country and the different type of Agricultural marketing.

INTERNATIONAL FINANCE(SEM-VI)

Course outcomes of the course:

Write down the International Marketing and difference between domestic marketing and International marketing.
Identify the problems is International marketing.
Describe the Export policy and procedures.
Classify the Export documents.
Describe the methods of payments or modes of payment.
Write down the L/C and its classification of L/C.
Describe the International marketing research and consumer behavior.
Identify the Competition in Foreign marker.
Write down the International Marketing strategies.
Classify the distribution channel.

DEPARTMENT OF MATHEMATICS

PROGRAM OUTCOMES(CBCS)

The outcome of the mathematics degree programs (M.P.CS, M.S.CS, M.S.DS, M.P.C) is to equip students with analytic and problemsolving skills for careers and graduate work. Classes develop student abilities and aptitudes to apply mathematical methods and ideas not only to problems in mathematics and related fields such as the sciences, computer science, actuarial science, or statistics.

Students are encouraged to develop intellectually and to become involved with professional organizations.

For example:

1. Demonstrate basic manipulative skills in algebra, geometry, and beginning calculus

2. Apply the underlying unifying structures of mathematics (i.e. sets, relations and functions, logical structure, real analysis, etc.) and the relationships among them

3. Demonstrate proficiency in writing proofs

4. Communicate mathematical ideas both orally and in writing

5. Investigate and solve unfamiliar math problems Individuals who have completed a degree in mathematics should be equipped to

(i) find employment utilizing their mathematical knowledge

(ii) use their mathematical knowledge to solve problems

(iii) undertake further studies related to mathematics. Based on these over-arching objectives, a set of program outcomes has been adopted which describe the skills, knowledge, attitudes, values and behaviours that students should be able to demonstrate by the time they complete the program.

PROGRAM SPECIFIC OUTCOMES (CBCS)

Program specific outcomes, which will:

• be well grounded in the basic manipulative skills level of algebra, geometry, Linear Algebra, Real Analysis and beginning level calculus.

• develop an understanding of the underlying unifying structures of mathematics (i.e., sets, relations and Real functions, logical structure, Problems, etc.) and the relationships among them.

• be able to transmit mathematics ideas both orally and in writing.

• develop the ability to read and learn mathematics on their own.

• Such maturity is a much a function of how mathematics is learned as it is of what mathematics is learned

COURSE OUTCOMES

S.NO	COURSE & SEM	OUT COMES
01	Differential Calculus (SEM-I)	By the time students completes the course they realize wide ranging applications of the subject
02	Differential Equations (SEM-II)	After learning the course the students will be equipped with the various tools to solve few types differential equations that arise in several branches of science.
03	Real Analysis (SEM-III)	After the completion of the course students will be in a position to appreciate beauty and applicability of the course.
04	Algebra (SEM-IV)	On successful completion of the course students will be able to recognize algebraic structures that arise in matrix algebra, linear algebra and will be

		able to apply the skills learnt in understanding various such subjects.
05	Linear Algebra (SEM-V)	After completion this course students appreciate its interdisciplinary nature.
06	Solid Geometry (SEM-V)	Students understand the beautiful interplay between algebra and geometry.
07	Numerical Analysis (SEM-VI)	Students realize the importance of the subject in solving some problems of algebra and Calculus
08	Vector Calculus (SEM-VI)	Students realize the way vector calculus is used to addresses some of the problems of Physics
09	Theory of Equations (SEC)	By using the concepts learnt the students are expected to solve some of the polynomial Equations

Course: B. Sc. Physics
Course Outcomes:

Core Papers:

DSC1: Mechanics: The students would learn about the behaviour of physical bodies it provides the basic concepts related to the motion of all the objects around us in our daily life. The course builds a foundation of various applied field in science and technology; especially in the field of mechanical engineering. The course comprises of the study vectors, laws of motion, momentum, energy, rotational motion, gravitation, fluids, elasticity and special relativity.
DSC1 LAB: Students would perform basic experiments related to mechanics and also get familiar with various measuring instruments would learn the importance of accuracy of measurements.

DSC2: Thermal Physics and Statistical Mechanics: The course makes the students able to understand the basic physics of heat and temperature and their relation with energy, work, radiation and matter. The students also learn how laws of thermodynamics are used in a heat engine to transform heat into work. The course contains the study of laws of thermodynamics, thermodynamic description of systems, thermodynamic potentials, kinetic theory of gases, theory of radiation and statistical mechanics.

DSC2 LAB: Students would gain practical knowledge about heat and radiation, thermodynamics, thermo emf , RTD etc. and perform various experiments.

DSC3: Electricity and Magnetism: It gives an opportunity for the students to learn about one of the fundamental interactions of electricity and magnetism, both as separate phenomena and as a singular electromagnetic force. The course contains vector analysis, electrostatics, magnetism, electromagnetic induction and Maxwell's equations. The course is very useful for the students in almost every branch of science and engineering.

DSC3 LAB: Students would gain practical knowledge about electricity and magnetism and measurements such as: Resistance, Voltage, current etc.

DSC4: Wave and Optics: The course comprises of the study of superposition of harmonic oscillations, waves motion (general), oscillators, sound, wave optics, interference, diffraction, polarization. The course is important for the students to make their career in various branches of science and engineering, especially in the field of photonic engineering.

DSC4 LAB: The practical knowledge of wave motion doing experiments: Tuning fork, electric vibrations. They would also learn optical phenomena such as interference, diffraction and dispersion and do experiments related to optical devices: Prism, grating, spectrometers

Discipline Specific Elective papers(any two):

DSE1: Modern Physics: Students would know about the basic principles in the development of modern physics. The topics covered in the course build a basic foundation of undergraduate physics students to study the advance branches: quantum physics, nuclear physics, particle physics and high energy physics. The course contains the study of Planck's hypothesis, photoelectric effect, Compton effect, matter waves, atomic models, Schrodinger wave equations, and brief idea of nuclear physics.

DSE1 LAB- Modern Physics: In this course students would be able to understand Basic experiments of modern physics such as: Determination of Plank's and Boltzmann's constants, Determination of ionization potential, Wavelength of H-spectrum, Single and double slit diffraction, Photo electric effect and determination of e/m

DSE1: Solid State Physics: Students would be able to understand various types of crystal structures and symmetries and understand the relationship between the real and reciprocal space and learn the Bragg's X-ray diffraction in crystals. Would also learn about phonons and lattice.

DSE1 LAB- Solid State Physics: The course Provides practical knowledge of various physical phenomena such as: magnetism, dielectrics, ferroelectrics and semiconductors. Students would gain a hands-on learning experience by performing experiments on these properties of materials.

DSE2: Electronics –I: The students would gain the knowledge of Basic Electronics circuits, network theorems and measuring instruments: They would know about common solid state devices: Semiconductor diodes and transistors. The topics also include the Rectifiers, Filters and their applications, number systems and logic gates which are foundation blocks of digital electronics.

DSE2 LAB- Electronics lab: Various practical problems solving methods related to Quantum Mechanics would be learned by students.

DSE2: Mathematical Physics: Would learn mathematical methods to solve the various problems in physics. The topics include the calculus of functions, Fourier transform, special functions and special integrals, partial differential equations, complex analysis and variables.

DSE2 LAB- Mathematical Physics: Various practical problems related to applications of mathematical tools to solve the problems in physics would be learned by students

Skill Enhancement Courses (any two):

SEC1 – Experimentak methods & error analysis: The students would gain the knowledge of Basic Electronics circuits, network theorems and measuring instruments: They would know about common solid state devices: Semiconductor diodes and transistors. The topics also include the Rectifiers, Filters and their applications, number systems and logic gates which are foundation blocks of digital electronics.

SEC2- Electrical circuit & Networking: This course would introduce students with the basic knowledge of computers their applications in solving common and scientific problems, the course include scientific programming languages, scientific word processing and graphical analysis.

SEC3-Basic instrumentation: Students would learn about electronic circuits such as Amplifiers and Oscillators. Various types of Amplifier and Oscillator circuits their working and applications in in domestic, industrial and scientific devices/equipments.

SEC4: Digital electronics: The students would gain the knowledge of different types of radiation and its interactions with matter, would also know about the photons, charged particles, neutrons, about radiation detection, monitoring and safety measures, and also learn about the applications of nuclear techniques.

B. Sc. PHYSICS

PROGRAMME SPECIFIC OUTCOMES: This undergraduate course in Physics Would provide the opportunity to the students:

To understand the basic laws and explore the fundamental concepts of physics

To understand the concepts and significance of the various physical phenomena.

To carry out experiments to understand the laws and concepts of Physics.

To apply the theories learnt and the skills acquired to solve real time problems.

To acquire a wide range of problem solving skills, both analytical and technical and to apply them.

To enhance the student's academic abilities, personal qualities and transferable skills this will give them an opportunity to develop as responsible citizens.

To produce graduates who excel in the competencies and values required for leadership to serve a rapidly evolving global community.

To motivate the students to pursue PG courses in reputed institutions.

This course introduces students to the methods of experimental physics. Emphasis will be given on laboratory techniques specially the importance of accuracy of measurements.

Providing a hands-on learning experience such as in measuring the basic concepts in properties of matter, heat, optics, electricity and electronic

Course:
M.Sc.(Physics)
Course Outcomes

PHY-101: Mathematical Physics and Numerical methods: Students would be able to understand the mathematical methods essential for solving the advanced problems in physics. It would be helpful in the development of the ability to apply the mathematical concepts and techniques to solve the problems in theoretical and experimental physics. The knowledge of mathematical physics would be beneficial in further research and development as it serve as a tool in almost every branch of science and engineering.

PHY-102: Classical Mechanics: In this course students would learn to apply the Newtonian laws using various mathematical formulations to describe the motions of macroscopic objects using generalized coordinates, momentum, forces and energy. The classical mechanics would be helpful in understanding of advanced branches of modern physics.

PHY-103: Electromagnetic theory: The study of electromagnetic theory provides basic

foundation for the students to understand advanced courses of physics. The astrophysics part of the course opens scope for students seeking research opportunities in space, atmospheric and planetary sciences etc. The course involves the study of electromagnetic theory, Maxwell's equations and electromagnetic waves, radiations from moving charges, solar and stellar systems.

PHY-104: Electronics: This course comprises of basics understanding of power amplifiers, feedback amplifiers, operational amplifiers and optoelectronic devices. This course is helpful for the students seeking job opportunities in government, corporate and private sectors. It is also helpful for the students to find opportunities research & development (R & D). The in depth understanding of electronics at post graduate level opens scope for the students to work in private and public sector enterprises.

PHY-151&152: Lab Course I&II: Students would gain practical knowledge of heat and acoustics in laboratory I. Implement the algorithms and flowcharts for solving Mathematical and Engineering problems. Demonstrate an understanding of computer programming language concepts with development of C program.

PHY-201: Solid State Physics I : Students will be able to develop an understanding of the lattice, different types of crystal structures, symmetries. The student would gain insight about the interior ofthe substances using X-ray diffraction in crystals.

PHY-202: Quantum Mechanics I: The course provides an understanding of the behaviour of the systems at microscopic (atomic and nuclear) scale and even smaller. Students would learn basic postulates and formulations of quantum Mechanics. The course, in fact, plays an important role in explaining the behaviour of all physical systems in the universe. The course includes the study of a brief review of foundations of quantum mechanics, matrix formulation of quantum mechanics, symmetry in quantum mechanics and approximation methods for bound states.

PHY-203: Statistical Physics: The course includes the study of Basic postulates, application of classical distribution to ideal gases, imperfect gases, quantum statistics and black body radiation. The course is
helpful for the students to understand the dynamics of the bulk material in macroscopic as well as microscopic levels. It is also useful to understand the relation between microscopic and macroscopicsystems.

PHY-204: Electronics II: This course helps the students to gain basic ideas of the construction and working of electronic devices and circuits and to understand the fundamentals of communication systems. The course includes the study of number systems, Boolean algebra, logic gates, combinational circuits, sequential circuits, memory devices and IC technology. The course is of much practical purpose for the students to learn basics of digital electronics. The digital electronics has wide applications in computing, process control, signal processing, communication systems, digital instruments etc.

PHY-251&252: Lab Course II: In This Course students would gain the practical knowledge by performing various experiments related to different field in physics and

would also learn to design the experiments themselves under the supervision.

PHY-301: Solid State Physics: Students will be able to develop an understanding elastic waves, phonons, and lattice vibrational properties. The course forms a theoretical basis of experimental material science and technology.

PHY-302: Quantum Mechanics II: The course includes the study of scattering theory, identical particles, relativistic wave equations and quantization of wave fields. The course would describe the nature and behaviour of matter and energy at subatomic level. In particular, theory of scattering gives an understanding collision between a quantum mechanical particle and target. The study of relativistic quantum mechanics enables the students to understand the behaviour of objects moving with speeds comparable to that of light.

PHY-303: Electronics Instrumentation : On successful completion of the course student can learn about detailed aspects of Electronics and measurements including error as well as in the field of Digital Instruments which all the areas in day to day life. Can also learn about Bridge Measurements, DSO, Function Generator & Data acquisition systems.

PHY-304A: Digital Logic Circuits: Students will be able to develop an understanding the concept of digital and binary systems. Be able to design and analyze combinational logic circuits. Be able to design and analyze sequential logic circuits. Understand the basic software tools for the design and implementation of digital circuits and systems.

PHY-304B: Microprocessors & Interfacing : Students are able to recall and apply a basic concept of digital fundamentals to Microprocessor based personal computer system. Identify a detailed s/w & h/w structure of the Microprocessor. Illustrate how the different peripherals (8255, 8253 etc.) are interfaced with Microprocessor. Distinguish and analyze the properties of Microprocessors & Microcontrollers.
Analyze the data transfer information through serial & parallel ports. Train their practical knowledge through laboratory experiments

PHY-401: Nuclear Physics: In this course students would know about the general properties of nuclei, nuclear forces and detectors, radioactive decay and nuclear reactions. The course expands the knowledge of students especially, the various applications of nuclear physics The course builds a foundation for the students to carry out research in the field of nuclear physics, high energy physics, nuclear astrophysics, nuclear reactions and applied nuclear physics.

PHY-402: Molecular Spectroscopy: The course structure includes atomic and molecular spectroscopy. As per the course structure, the students learn basics concepts of spectroscopic principles and rules. Students would learn technique in spectroscopy and know about their applications. The course is helpful for the students to explore R & D opportunities in various areas of science andtechnology such as biomedical, industrial and environmental fields.

PHY-403: Instrumentation for measurement control and data transmission: Students are able to understand a solid conceptual understanding of the fundamentals of data communications and computer networks. More specifically, understands the basic concepts of data communications.

PHY-404A: Instrumentation for measurement control and data transmission:
Acquire a basic knowledge about fundamentals of microcontrollers. Acquire a basic knowledge about programming and system control to perform a specific task. Acquire knowledge about devices and buses used in embedded networking. Develop programming skills in embedded systems for various applications. Acquire knowledge about basic concepts of circuit emulators. Acquire knowledge about Life cycle of embedded design and its testing.

PHY-404B: PC Architecture & Hardware: The following are the course outcomes and the subset of course Outcomes: Understand the merits and pitfalls in computer performance measurements. Understand the impact of instruction set architecture on cost-performance of computer design. Design a pipeline for consistent execution of instructions with minimum hazards. Understand ways to incorporate long latency operations in pipeline design. Understand ways to take advantage of instruction level parallelism for high performance processor design.

GIRRAJ GOVERNMENT COLLEGE (A), NIZAMABAD

DEPARTMENT OF CHEMISTRY

COURSE OUTCOME

Programme: B.Sc Chemistry

SEMESTER – I, Paper – I

UNIT	Course Outcome
I – Organic Chemistry	At the end of the course students will be able to : →Learn to draw the molecular orbital energy diagrams →Understand the structure, synthesis of compounds of p-block elements
II – Organic Chemistry	→Study of bond polarization – effects – applications →Learn the reaction mechanism of aromatic hydrocarbons
III – Physical Chemistry	→Have an idea about the classical mechanics →Derive the relation between critical and Vanderwaal's constant →Understand the structural differences between solids, liquids and gases →Differentiate between the ideal and Non-ideal solutions
IV – General Chemistry	→Learn the chemistry behind the cation and anion analysis →Able to draw the conformational isomers of different compounds →Derive Bragg's Equation

SEMESTER – II, Paper – II

UNIT	Course Outcome
I – Organic Chemistry	At the end of the course students will be able to : →Learn the structure, hybridization of oxides, oxyacids of p-block elements → Know the anomalous behavior of He (II) →Understand the characteristic properties of d-block elements
II – Organic Chemistry	→Learn the reaction mechanisms of reactions involved in halogen compounds, Hydroxy compounds and carbon compounds
III – Physical Chemistry	→Understand the electrical transport concept, determination of transport numbers. →Solve the problems related to cell EMF
IV – General Chemistry	→Differentiate between Volumetric analysis and Gravimetric analysis →Learn the symmetry of Chiral molecules →Draw the R,S-Configuration →Solve the problems of colligative properties

SEMESTER – III, Paper – III

UNIT	Course Outcome
I – Organic Chemistry	At the end of the course students will be able to : →Learn the Chemistry of Lanthanides and actinides → Learn the concept of symmetry elements in molecules

	→Learn the characteristics of a solvent used in chemical reactions
II – Organic Chemistry	→Understand the reaction mechanisms of important reactions of Alcohols, ethers, Carbonyl Compounds
III – Physical Chemistry	→Study the phase diagram of various systems →Understand the applications of colloids and adsorption
IV – General Chemistry	→Know about the general applications of nano materials →Understand the stereochemistry of carbon compounds →Learn about the conformational analysis of organic molecules

SEMESTER – IV, Paper – IV

UNIT	Course Outcome
I – Organic Chemistry	At the end of the course students will be able to : →Learn Werner's diagrams of complexes, Application of VBT and isomerism in coordination compounds → Know about the 18 electron rule
II – Organic Chemistry	→Learn the reaction mechanism of important reactions of carboxylic acids, Nitro hydrocarbons
III – Physical Chemistry	→Solve the problems of Cell EMF →Calculate the thermodynamics quantities of cell reaction
IV – General Chemistry	→Know different types of peri cyclic reactions →Gain the knowledge of different terms used in synthesis of molecule. →Differentiate between stereo selective and stereo specific reactions.

SEMESTER – V, Paper – V

UNIT	Course Outcome
I – Organic Chemistry	At the end of the course students will be able to : →Understand the Splitting patterns of d-orbitals → Know about the magnetic properties and electronic spectra of metal complexes →Apply the wade's rules
II – Organic Chemistry	→Learn the reactions of Amines →Know the importance of Hetero cyclic as drugs
III – Physical Chemistry	→Solve the problems of different order of reactions →Understand the effect of temperature on reaction rate
IV – General Chemistry	→Get exposed to different spectroscopy techniques →Learn the laws of Photochemistry, Quantum efficiency

SEMESTER – V, Paper – VII

UNIT	Course Outcome
I – Chromatography Techniques	At the end of the course students will be able to : →Learn about different chromatographic techniques and their applications in research
II – Spectro Photometry & Colorimetry	→Understand the importance of Spectro photometry in present research applications

III – Electro analytical methods	→Learn about potentiometry, Voltametry, different types of conductivities

SEMESTER – VI, Paper – VI

UNIT	Course Outcome
I – Organic Chemistry	At the end of the course students will be able to : →Differentiate labile and inert complexes → Learn applications of Transeffect →Understand the biological significance of essential elements →Understand the concept of pearson theory
II – Organic Chemistry	→Draw the structure of Glucose, Fructose and do the inter conversions of mono saccharides →Learn the synthesis of amino acids, structure of proteins
III – Physical Chemistry	→Learn laws of Thermodynamics →Derive the expressions related to maximum work of isothermal reversible process →Solve the problems
IV – General Chemistry	→Learn about the proton magnetic resonance spectroscopy, mass spectroscopy – principle and applications →Learn about entropy, Carnot's cycle, Gibb's Equation, Maxwell's relations

SEMESTER – VI, Paper – VII

UNIT	Course Outcome
I – Introduction Terminology & Enzymes	At the end of the course students will be able to : →Learn about different types of diseases → Know the different terms used in medicinal Chemistry →Understand the absorption of drugs across the membrane →Learn the mechanism and factors affecting enzyme action.
II – Receptors synthesis Therapeutic activity of drugs	→Know the mechanism of drug action →Learn the synthesis and therapeutic activity of drugs →Identify the drugs to treat metabolic disorders, drugs acting on nervous system
III – Molecular messengers and Health promoting drugs	→ Learn about the hormones and neurotransmitters →Know about the deficiency disorders of Vitamins and Micronutrients.

COURSE OUTCOMES

PROGRAMME: M.Sc (ORGANIC CHEMISTRY)

SEMESTER – I

Paper	Course Outcomes
CH 101 T – Inorganic Chemistry	At the end of the course student will be able to: → Learn concept of Symmetry elements in molecules. →Find out the point group of inorganic molecules →To know the preparation and properties of transition metal carbonyls →To understand the splitting of d-orbitals and bonding in metal complexes.
CH102 T – Organic Chemistry	→Determination of configuration in E,Z-isomers →Learn about the electrophilic addition, elimination reactions →Determination of amino acid sequence in polypeptides by end group analysis and structure elucidation of sucrose →Importance of heterocyclic compounds as drug
CH103 T – Physical Chemistry	→Learn about the laws of thermodynamics and thermodynamics relations. →Applications of EMF measurements, concept of activity and activity coefficients in electrolytic solutions →Know different theories of reaction rates
CH104 T – Analytical Techniques and Spectroscopy	→Learn about the different chromatographic techniques →HNMR of organic molecules and metal complexes →Learn about microwave spectroscopy, Vibrational and Raman Spectroscopy and it's applications →Electronic Spectra, types of electronic transitions Beer's law applications.

SEMESTER – II

Paper	Course Outcomes
CH 201 T – Inorganic Chemistry	At the end of the course student will be able to: →Concept of ligand substitution reactions and electron transfer reactions →Learn the effect of weak cubic crystal fields on S, P, D, F terms. →Know the preparation of metal clusters →Get the knowledge of metal ions in biological systems.
CH202 T – Organic Chemistry	→Learn the conformational isomerism and concept of dynamic stereochemistry →Concept of nucleophilic aromatic substitution, Electrophilic substitutions →Gain the knowledge about different reactive intermediate and molecular rearrangements →Structure determination and synthesis of natural products.
CH203 T – Physical Chemistry	→Study of Photochemistry reactions, application of photochemical reaction →Comparison of classical and quantum mechanical particles →Study of electronic properties of metals, insulation and semiconductors.
CH204 T – Analytical Techniques and Spectroscopy	→Learn about the different analytical techniques, solid state NMR Spectroscopy, Mass spectroscopy, Photo electron and ENR Spectroscopy – Principle, instrumentation techniques.

SEMESTER – III

Paper	Course Outcomes
CH (OC) 301 T- Conformational Analysis, Asymmetric Synthesis and Bio molecules	At the end of the course student will be able to: →Learn about the Conformational structures of cyclic systems. →Understand the strategies in Asymmetric synthesis. →Study of enzymes, nucleic acids and lipids.
CH (OC) 302 T - Modern organic synthesis	→Study of different synthetic reagents. →Learn the new synthetic reactions →Gain the knowledge of new techniques and concepts in organic synthesis.
CH (OC) 303 T - Organic Spectroscopy and Pericyclic reactions	→Application of ^{13}C NMR Spectroscopy →Understood the 2D-NME techniques and applications →Learn the Pericyclic reactions, classifications →To solve the problems based on FMO approach.
CH (OC) 304 T - Photochemistry, Synthetic strategies and Green Chemistry	→Synthetic strategies – Terminology and retro synthetic approach →Principles of green chemistry and alternative approaches

SEMESTER – IV

Paper	Course Outcomes
CH (OC) 401 T - Drug design and Drug Discovery	At the end of the course student will be able to: →Learn about the principles of drug design and drug discovery. →Quantitative structure and activity relationship studies. →Study the combinatorial chemistry.
CH (OC) 402 T - Drug synthesis and mechanism of action	→Understand the action of drug on metabolic process, cell wall and on specific enzymes →Learn how the drugs act on genetic material and on immune system →Study the different types of receptors and how drugs act on them.
CH (OC) 403 T - Advanced Heterocyclic Chemistry	→Know more about the synthesis and reactivity of non aromatic heterocyclic larger ring hetero cycles.
CH (OC) 404 T - Advanced Natural Products	→Learn about the biosynthesis, stereo chemistry structure determination and spectral methods of natural products.

Girraj Government College(A),Nizamabad
Department of Botany

Programme Outcomes (POs) and Program Specific Outcomes

Name of The Programme (UG/PG)	Programme OutComes	Programme Specific Outcomes Students will be able to
UG	Students will gain Knowledge and Understanding about Plant Diversity	Stewardship responsibility
	Students will get Practical Skills in the field and laboratory Experiments	Hands on expertise in Biological sciences
	Presentation skills (oral & writing) in life sciences.	Entrepreneurship skill development
	Scientific knowledge in life science and fundamental metabolism of plants.	They will be able to clear competitive exams like Central University entrance Exams, JAM, TFIR etc.
	Knowledge about biodiversity exploration, estimation and conservation	Career opportunities and job opportunities.
	Students learn to carry out practical work, in the field and in the laboratory, with minimal risk. They gain introductory experience in applying each of the following skills and gain greater proficiency in a selection of them depending on their choice of optional modules	
	Create, select, and apply appropriate techniques, resources, and modern instruments and equipments for Biochemical estimation, Biotechnology, Plant Tissue culture experiments, cellular and physiological activities of plants with an understanding of the application and limitations.	
	Plant identification Apply reasoning informed by the contextual knowledge to assess plant diversity, its	

	importance for society, health, safety, legal and environmental issues and the consequent responsibilities relevant to the biodiversity conservation practice.	
PG	This program is a Research oriented learning	The students will be qualified to face IFS, CSIR-NET, SET, GATE, ICMR.NET, ICAR.NET etc.,
	It enhances skills in handling scientific instruments, planning and executing biological research.	They become focused to take up Research and Teaching opportunities
	It also Promotes creative and novel ideas in biological concepts.	They become Hands on expertise in life sciences.
	It provides Entrepreneurship skill development	It promotes career and job opportunities in both Govt. and private sectors.

Course Outcomes of all Programmes Offered by Department -

Name of The Programme: B.Sc.Botany (UG)

Approved by BOS Academic Year -2020- 2021- for First Year

PROPOSED CBCS COMMON CORE SCHEME FOR B.SC. COURSE

Sl. No.	Name of the Course	Course Code	Year & Semester	Program Specific Outcomes
1	**PAPER-I : Microbial Diversity and Lower Plants DSC: Discipline Specific Core-1A**	**BS 104**	**First Year SEMESTER - I**	The students will be able to understand the structure and reproduction of certain selected algae, fungi and bryophytes.
				learn about the importance of the plant diversity.
				they will know the economic values of this lower group of plant community.
2	**PAPER-II: Gymnosperms, Taxonomy of Angiosperms and Ecology DSC: Discipline Specific Core-1B**	**BS 204**	**First Year SEMESTER - II**	The students will learn about the structure and reproduction of certain selected species of pteridophytes and Gymnosperms.
				learn few representatives of fossil forms.
				the students will understand the relationship of complementary metabolic pathways such as photosynthesis in energy acquisition

				The Students will understand various Angiosperm plant habits.
				Learn about vegetative and reproductive structural features of Angiosperms.
				Understand various modifications and its purpose in plant parts.
				Comprehend the concepts of plant taxonomy and classification of Angiosperms.
				Learn about various Angiosperm families and its economic value.
Approved by BOS Academic Year -2019- 2020 for Second Year **PROPOSED CBCS COMMON CORE SCHEME FOR B.SC. COURSE**				
Sl. No.	**Name of the Course**	**Course Code**	**Year & Semester**	**Program Specific Outcomes**
	PAPER-III: Plant Anatomy and Embryology **DSC: Discipline Specific Core-1C**	**BS 304**	**Second Year SEMESTER - III**	The students will learn about the basic concepts in anatomy.
				understand the various components of stem and wood during its secondary growth.
				be enlightened about the mechanism of pollination and basic structure of the embryo.
	Skill Enhancement Course SEC-1: Nursery and Gardening	**BS 301**	**Second Year SEMESTER - III**	The students will acquire sufficient academic and practical experiences and become self employed in the nursery ventures.
				understand the variousmethods of vegetative propagation
				be empowered with entrepreneurial skills through the production and disease management
				The students will learn about how to prepare suitable soil media for potting up, seedling and cutting.
				be able to impart the skills like germinating seed and transplant seedlings and cutting into pots.
				understand the entrepreneurial skills in nursery technology
	Skill Enhancement Course SEC-2: Biofertilizers and Organic Farming	**BS 302**	**Second Year SEMESTER - III**	learn about the importance of plant protection methods and organic farming systems,
				students will understand the various processes

				in crop improvement program.
				be empowered with entrepreneurial skills through the organic farming and nursery technology
	SEC-3: Greenhouse Technology	**BS 401**	**Second Year SEMESTER - IV**	students will understand the various processes in Green Technology
				be empowered with entrepreneurial skills through theGreen Technology
	SEC-4: Mushroom Culture Technology	**BS 402**	**Second Year SEMESTER - IV**	The students will be Strengthened to promote mushroom cultivation through good laboratory techniques.
				Provided with appropriate training personnel for the promotion of mushroom production in the college.
				enabled for entrepreneurship skill through this course
				students will understand the basic information on mushroom
	PAPER-IV : Cell Biology, Genetics & Plant Physiology- DSC--1D: Discipline Specific Core	**BS 404**	**Second Year SEMESTER - IV**	The students will be able to learn about the basics of cell and its inclusions
				understand the basic concepts of mendelian genetics, its variations and applications
				familiarize with the various concepts of evolution
				The students will understand and appreciate the plant world we depend on
				know about the basic principles of plant function, metabolism, secondary products, cell physiology & principles of growth & development

Approved by BOS Academic Year -2018- 2019 for Final Year ,CBCS Common Core syllabi

Sl. No.	Name of the Course	Course Code	Year & Semester	Program Specific Outcomes
	Skill Enhancement Course SEC-III Nursery and Gardening	**BS501**	**Third Year: Semester-V**	The students will acquire sufficient academic and practical experiences and become self employed in the mushroom and nursery ventures.
				be empowered with entrepreneurial skills through the production and disease

				management
	Generic Elective -1: **Economic Botany**	**BS502**	**Third Year: Semester-V**	The students will understand and appreciate the plant cultivation concept
				understand the commercial values and uses of Vegetables,cereals ,Pulses millets
				The students will understand commercial value of south indian fruits and dry fruits
				To know the fiber yielding Plants
	Cell Biology and Genetics **DSC-IE Discipline Specific Core**	**BS503**	**Third Year: Semester-V Paper-V**	The students will be able to learn about the basics of cell and its inclusions
				to learn the functioning of the cell at the molecular level.
				understand the basic concepts of mendelian genetics, its variations and applications
				The students will be able to acquire knowledge about the nature and function of genes and processes of inheritance as they influence the characteristics of populations and species.
				The students will understand the concepts of microbial and human genetics and genetic mapping.
	Ecology and Biodiversity; **Discipline Specific Elective -A-DSE-1E**	**BS506**	**Third Year: Semester-V Paper-VII**	understand the importance of ecology and conservation
				Understand the ethical principles and commit to environmental ethics and responsibilities and norms of the biodiversity conservation
				Understand the impact of the plant diversity in social and environmental contexts, and demonstrate the knowledge of, and need for sustainable development
	Horticulture **Discipline Specific Elective -B-DSE-2E**	**BS506**	**Third Year: Semester-V**	_____
				Making of organic compost
				Understand the Nursery practices

				understand the entrepreneurial skills in nursery technology
				be empowered with entrepreneurial skills through the organic farming
	Mushroom Culture Technology **Skill Enhancement Course SEC-4**	**BS601**	**Third Year: Semester-VI**	The students will be Strengthened to promote mushroom cultivation through good laboratory techniques.
				Provided with appropriate training personnel for the promotion of mushroom production in the college.
				enabled for entrepreneurship skill through this course
	Generic Elective GE-II: Biodiversity and Human Welfare	**BS602**	**Third Year: Semester-VI**	The students will understand the use of the plant resources to produce valuable products.
				Understand the Loss of Ecosystem diversity
				be enlightened about the opportunities for income and employment generation.
				be able to develop the ability to think and create useful plant products.
	Plant Physiology **(DSC-1F Discipline Specific Core)**	**BS603**	**Third Year: Semester-VI**	The students will understand and appreciate the plant world we depend on
				know about the basic principles of plant function, metabolism, secondary products, cell physiology & principles of growth & development
				Know about the role of Phytochrome in flowering
	Discipline Specific Elective -C-DSE-3E Tissue Culture and Biotechnology	**BS606**	**Third Year: Semester-VI**	The students will understand the basic concepts of molecular biology, genetic engineering and plant tissue culture and its applications.
				The students will learn about the basic concept, technical skills, hands-on experience and training in plant tissue culture and molecular biology.
				Understand the micropropagation methods and hands on experience to students.
				learn about the basic concept of somatic embryogenesis and production of artificial

				seeds
	Discipline Specific Elective -D:DSE-4E **Seed Technology**	**BS606**	**Third Year: Semester-VI**	Understand Cultural practices and harvesting of seed
				The students will learn about the basic concept, technical skills,hands-on experience and training in seed production technology
				Provided with appropriate training personnel for the promotion of mushroom production in the college

Department of Botany
PG- M.Sc. Botany

Programme Outcomes (POs) and Program Specific Outcomes

Name of The Programme (UG/PG)	Programme OutComes	Programme Specific Outcomes Students will be able to
PG	This program is a Research oriented learning	The students will be qualified to face IFS, CSIR-NET, SET, GATE, ICMR.NET, ICAR.NET etc.,
	It enhances skills in handling scientific instruments, planning and executing biological research.	They become focused to take up Research and Teaching opportunities
	It also Promotes creative and novel ideas in biological concepts.	They become Hands on expertise in life sciences.
	It provides Entrepreneurship skill development	It promotes career and job opportunities in both Govt. and private sectors.

Course Outcomes of all Programmes Offered by Department -

Name of The Programme: M.SC. Botany

Sl. No.	Name of the Course	Course Code	Year & Semester	Program Specific Outcomes
1	**Phycology**	**Bot 101**	**I Year Semester – I**	Identify true fungi and demonstrate the principles and application of plant pathology in the control of plant disease. • Demonstrate skills in laboratory, field and glasshouse work related to mycology and plant pathology. • Develop an understanding of microbes, fungi and lichens and appreciate their adaptive strategies • Identify the common plant diseases according to geographical locations and device control measures
2	**Mycology**	**Bot 102**	**I Year Semester – I**	Design the media for fermentation. ¬ Maintain the interested fungal organism in the proper condition. ¬ Pilot to large scale production techniques. ¬ Application and management of industrial effluents Ideas about use of fungi and exploring the fungal organisms for their valuable products ¬ Cultivation of fungi for food, fermentation, SCP and other microbial products ¬ Familiar with Fermentation technology
3	**Bryology, Pteridology and Paleontology**	**Bot 103**	**I Year Semester – I**	• The Students would have explained the importance of lower plants like Algae, Fungi, Lichens and Bryophytes . • They could describe the distribution and occurrence of lower plants. • The graduates could start consultancy

				services to the farmers on various algal culture and value added products from algae.
4	**Plant Biochemistry and Intermediary Metabolism**	**Bot 104**	**I Year Semester – I**	1. Understand how to apply the basic concepts of Plant Physiology in other disciplines of agriculture. 2. To understand, to know and discuss the concept of physiological processes of plants. 3. Understand and describe the distribution of metabolic processes in the cell. 4. Understand the importance of mineral nutrition, transpiration, photosynthesis and respiration of plant organisms. 5. To understand and explain the processes of growth and development of plants
5	**Taxonomy of Angiosperms, Medicinal Botany & Ethnobotany**	**Bot 105**	**I Year Semester – II**	¬ Study plant morphology ¬ Description of a plant specimen. ¬ Study of at least 20 locally available families of flowering plants. ¬ Identification of genus and species of locally available wild plants. ¬ Preparation of botanical keys at generic level by locating key characters. ¬ Knowledge of at least 10 medicinal plant species. ¬ Knowledge of secondary metabolites and its use in taxonomy.
6	**Gymnosperms and Embryology**	**Bot 106**	**I Year Semester – II**	The course will enable students to know the earlier plants, their vegetative and reproductive structures and their importance • Discuss the structural elements of plants floral parts and reproduction • Discuss the Pollination, embroyology and apomixis 1. To gain knowledge of plant cells, tissues and their functions. 2. The students will enable to know the internal structure of stem, leaf and root in monocot and dicot. 3. Students familiarize in secondary

				growth, anomalous secondary growth in monocot and dicot stems. 4. Student able to understand the process of microsporogenesis, megasporogenesis and double fertilization. 5. Students able to understand endosperm and its types and know the structure and development of monocot and dicot embryos.
7	**Developmental Anatomy and Palynology**	**Bot 107**	**I Year** **Semester – II**	• Acquire basic skills on the plant taxonomy with special reference to Angiosperms • Illustrate the types; merits and demerits of various system of classification • Identify the angiosperms families with specific key characters; learn various advanced tools to study plant taxonomy
8	**Plant Physiology**	**Bot 108**	**I Year** **Semester – II**	After completion of the course the students are familiar with various physiological aspects involved in the plant development. ¬ Also the role of enzymes in it and mechanism of photosynthesis, respiration, nitrogen and lipid metabolism. ¬ The students are able to isolate starch, pectine and various nutritive products from the plants . ¬ Qualitative and quantification of the plant contents and its biochemistry and mode /mechanism of synthesis etc
9	**Cell Biology, Genetics, Ecology and Phytogeography**	**Bot 201**	**Final Year** **Semester – III**	The cell structures in relation to function of cells the fundamental unit of life, are concerned in this course along with molecules present in cells. ¬ Apply the principles of cell biology in designing experiment, statistical analysis, and interpretation of results ¬ Operate and solve exercise using computation statistics software. ¬ Get acquitted with basic approach in the research

				methodology.
10	**Carbon assimilation and Crop Productivity**	**Bot 202**	**Final Year** **Semester – III**	The students could know various methods of selection in plant breeding. • They could assert the mutation and level of ploidy. • The graduate could have learn the landscape designing methods. • The students could get employment in agriculture and horticulture centres and plant breeding centre. • They could be an entrepreneur in the field of ornamental plant propagation
11	**Stress Physiology**	**Bot 203**	**Final Year** **Semester – III**	1. Understand how to apply the basic concepts of Plant Physiology in other disciplines of agriculture. 2. To understand, to know and discuss the concept of physiological processes of plants. 3. Understand and describe the distribution of metabolic processes in the cell. 4. Understand the importance of mineral nutrition, transpiration, photosynthesis and respiration of plant organisms. 5. To understand and explain the processes of growth and development of plants.
12	**Plant Tissue Culture and Biotechnology**	**Bot 204**	**Final Year** **Semester – III**	Know about Equipment's required in Tissue culture Lab ¬ Media preparation techniques for different plants ¬ Sterilization techniques for media as well as for explants ¬ Explant Culture.- Anther culture Pollen culture, Micropropagation. Embryo rescue technique. ¬ Somaclonal variation. In vitro mutation. Isolation of plant protoplasts and viability testing.

				¬ Protoplast fusion techniques. ¬ Tissue culture of important Horticultural, medicinal plants
13	**Molecular Genetics, Biostatistics, Ecodiversity and Conservation**	**Bot 205**	**Final Year** **Semester – IV**	1. To gain knowledge about the biological databases. 2. To understand the basic model and structure of proteins and amino acids. 3. To enable the students to understand the basic tools of sequence analysis. 4. To learn the hypothesis of basic statistical tests in large sample. 5. To understand the fundamentals of probability and its distribution. Draw conclusions or make predictions based on data summaries or statistical analyses. • Design research studies in collaboration with physicians, life scientists, or other professionals. • Analyze clinical or survey data using statistical approaches such as longitudinal analysis, mixed effect • logistic regression analyses, and model building techniques. • Provide Biostatistician consultation to clients or colleag
14	**Phytohormones and Plant Development**	**Bot 206**	**Final Year** **Semester – IV**	Understand the various developments of SAM and RAM • Describe the mechanism of seed germination and seed growth • Understand the process of microscopy
15	**Physiology and molecular Biology of Nitrogen Fixation**	**Bot 207**	**Final Year** **Semester – IV**	• Understand in-depth knowledge on Molecular Biology • Understand in detailed mechanisms of DNA Replication • Understand the overall concepts of Transcription, Translation • Understand the process of Mapping and sequencing of genome.

16	**Plant Molecular Biology and Genetic Engineering**	**Bot 208**	**Final Year** **Semester – IV**	To use genetic engineering tools in crop improvement ¬ Use the Bioinformatics toll in Biological data analysis. ¬ Able to explain the methods used for characterizing and managing Biological data . ¬ Classify different types of Biological Databases.

DEPARTMENT OF ZOOLOGY

Zoology Program Outcomes, Program Specific Outcomes and Course Outcomes

Program Outcomes (POs):

Knowledge Outcomes:

After completing B.Sc. Zoology Program, the students will be able to:

PO1: Develop curiosity for Zoology and gain knowledge of the fundamentals of animal sciences, understands the complex interactions among various living organisms.

PO2: Develop awareness about the basic and applied areas of Zoology.

PO3: Gain an insight of the aspects of animal diversity.

PO4: Apply knowledge to solve the issues related to animal sciences.

PO5: Take appropriates steps towards conservation of endemic and endangered animal species.

Skill Outcomes:

After completing B.Sc. Zoology Program, the students will be able to:

PO6: Demonstrates and apply the fundamental knowledge of the basic principles of major fields of Zoology.

PO7: Understand the importance of, abiotic and biotic factors of environment and their conversation.

PO8: Learn good laboratory practices and proper handling of lab instruments.

PO9: Gain knowledge of Agro based Small Scale industries like Sericulture, Fish Farming, Honeybee Farming and Vermicompost preparations.

Attitudinal Outcomes:

After completing B.Sc. Zoology Program, the students will be able to:

PO10: Demonstrate knowledge and understanding of Zoology and management principles and apply these to one's own work, as a member and leader in a team.

PO11: Recognize the need for and have the preparation and ability to engage in independent and life – long learning in the broadest context of technological change.

PO12: Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings.

PO13: Develops sympathy and love towards the animals.

PO14: Apply ethical principles and commit to professional ethics and responsibilities in delivering their duties.

Program Specific Outcomes (PSOs):

After completing B.Sc. Zoology Program, the students will be able to:

PSO1: Understand the nature and basic concepts of Cell Biology, Genetics, Taxonomy, Physiology, Ecology and Applied Zoology.

PSO2: Analyze the relationships among animals, plants and microbes.

PSO3: Perform procedures as per laboratory standards in the areas of Taxonomy, Physiology, Ecology, Cell Biology, Genetics, Applied Zoology, Clinical Science, tools and techniques of Zoology, Toxicology, Entomology, Sericulture, Biochemistry, Fish Biology, Animal Biotechnology, Immunology and Research Methodology.

PSO4: Understand the applications of biological sciences in Apiculture, Aquaculture, Agriculture and Medicine.

PSO5: Gains knowledge about research methodologies, effective communication and skills of problem-solving methods.

PSO6: Contributes the knowledge for Nation building.

Course Outcomes (COs):

Sem-I, Core Paper-I, Title: Animal Diversity – Invertebrates

After successfully completing this course, the students will be able to:

CO1: Understand the animal diversity around us.

CO2: Understand the underlying principles of classification of animals.

CO3: Classify and characterize Phylum Protozoa to Phylum Echinodermata.

CO4: Understand the different systems of type study organisms.

CO5: Describe various unique features of different Phyla like Coral formation, Parasitic Adaptations, Pearl formation, etc.,

Sem-II, Core Paper-II, Title: Animal Diversity – Vertebrates

After successfully completing this course, the students will be able to:

CO1: Gain conceptual knowledge of vertebrates, their adaptations and association in relation to their environment.

CO2: Classify and characterize Phylum Protochordata to Phylum Mammalia.

CO3: Understand complex vertebrate interactions.

CO4: Understand the affinities among Chordata and Non-Chordata.

CO5: Describe the anatomy of different systems with respect to Phylum Protochordata to Phylum Mammalia.

Sem-III, Core Paper-III, Title: Animal Physiology and Animal Behavior

After successfully completing this course, the students will be able to:

CO1: Describe the detailed concepts of digestion, respiration, excretion, the functioning of nerves and muscles.

CO2: Describe the structure and functions of enzymes.

CO3: Gain skills to execute the roles of a biological teacher or medical lab technicians with training as they have basic fundamentals.

CO4: Develop basic understanding of endocrine system and its interactions with other systems.

CO5: Understand animal behavior and response of animals to different instincts.

Sem-IV, Core Paper-IV, Title: Cell Biology, Genetics and Developmental Biology

After successfully completing this course, the students will be able to:

CO1: Give an overview of an animal cell, differentiate Prokaryotes and Eukaryotes and illustrate the mechanism of DNA replication and protein synthesis.

CO2: Describe Mendelian and Non-Mendelian Inheritance.

CO3: Explain the concept behind gene expression, genetic disorder, gene mutations – various causes associated with inborn errors of metabolism.

CO4: Understand the basic concepts of developmental biology.

CO5: Explain the fundamental concepts of gametogenesis, types of eggs, embryogenesis, organogenesis and placenta.

Sem-V, Core Paper-V, Title: Physiology and Biochemistry

After successfully completing this course, the students will be able to:

CO1: Gain fundamental knowledge of physiology and endocrine systems.

CO2: Students learn the detailed concept of digestion, respiration, execration, the functioning of nerves and muscles.

CO3: Gain knowledge of Osmoregulation and Homeostasis.

CO4: Explain the structure of biomolecules.

CO5: Understand the fundamental concepts of bioenergetics in cellular processes.

Sem-V, Elective Paper-VII Title: Entomology

After successfully completing this course, the students will be able to:

CO1: Describe the general insect morphology.

CO2: Describe the insects physiology.

CO3: Gain fundamental understanding of insect pathology.

CO4: Gain knowledge of beneficial and non-beneficial insects.

CO5: Understand the Insects role as source of commercial products (Honey, Wax, Silk, Lax and Medicines), in forensic science; as vectors; in Pest control

Sem-VI, Core Paper-VI Title: Immunology and Animal Biotechnology

After successfully completing this course, the students will be able to:

CO1: Gain in depth knowledge of tissues, cells and molecules involved in host defense mechanisms.

CO2: Understand the types of Immunity.

CO3: Describe the interaction of antigens, antibodies, complements and other immune components.

CO4: Understand the immune mechanisms in disease control, vaccination, process of immune interactions.

CO5: Describe the molecular structure and function of major histocompatibility complex and types of hypersensitivity and mechanism of tolerance,

CO6: Gain knowledge of animal cell in culture, growth of cell lines.

CO7: Understand the concept of culturing animal cells in artificial media.

CO8: Describe the uses of recombinant DNA technology in Genetic manipulations and in a variety of industrial processes.

Sem-VI, Elective Paper-VIII Title: Clincal Science

After successfully completing this course, the students will be able to:

CO1: Understand about composition of blood, blood borne diseases, autopsy and biopsy.

CO2: Learn the techniques of microscopy, microtomy, biopsy, autopsy and immunological techniques.

CO3: Describe the types of immunity, antigens - antibodies and their properties.

CO4: Understand the pathology of diseases caused by various microorganisms such as bacteria, virus, parasites and fungus.

CO5: Apply the knowledge of clinical science and pathology to one's own life.

B SC Computer Science-course- Outcomes

Course : MPCS and MSCS

SEM	CODE	COURSE TITLE	OUTCOMES
SEM-I	CORE-I	PROGRAMMING IN C	CO-1: Develops knowledge on basics of computers and Illustrate the flowchart, algorithm, pseudo code for a given problem, build up programs using various data types and operators CO-2: Develop conditional and iterative statements for a given problem CO-3: Implementing programs using arrays, pointers, dynamic memory management, structures and unions CO-4: Develop solution for a given problem using modular approach and perform file handling
SEM-II	CORE-II	Programming in C++	CO-1: Relate the basic concepts of oops to solve real problems CO-2: Demonstrate the creation of objects and access specifiers CO-3: Classify the advanced OOPs features like inheritance polymorphism etc. CO-4: Demonstrate exception handling, Streams, STL in formulating the solution for a given problem
SEM-III	CORE-III	DATA STRUCTURES WITH C++	CO-1: Understand basic concepts of data structures and analyse computation complexity CO-2: Apply various operations of linear and non-linear data structures CO-3: Apply linear data structures to implement stacks ,queues and linked list concepts. CO-4: Apply linear data structures to implement various sorting, searching techniques CO-5: Apply non-linear data structures to implement Tree traversals ,Graphs Traversals
SEM-IV	CORE-IV	DATABASE MANAGEMENT SYSTEM	CO-1: Appreciate the underlying concepts of database system architecture and technologies CO-2: Develop database schema for a given scenario CO-3: Query the database using the relevant programming language CO-4: Design schedules using multiple transactions

SEM-V	CORE-V	**JavaPrograming**	**CO-1:** Write Java programs using various programming constructs using Java **CO-2:** Solve different mathematical problems using OOP Paradigm **CO-3:** Understand and use Java Collection Framework **CO-4:** Design and analyze the solutions for Thread and database connectivity concepts
	ELECTIVE VII-A	**Operating system**	**CO-1:** Identify System calls and evaluate process scheduling criteria of OS **CO-2:** Develop procedures for process synchronization and scheduling services of an OS **CO-3:** Distinguish disk access, file systems supported by an OS **CO-4:** Extend operating systems virtual memory, protection and security aspects
	ELECTIVE VII-B	**Software Engineering**	**CO-1:** Analyse software engineering framework activities and process models that can be tailored with appropriate methods for developing the projects **CO-2:** Design relevant software system models from the available software requirements and validate desired user model with realistic constraints **CO-3:** Deliver quality software products by applying software testing strategies and product metrics over the entire system life cycle **CO-4:** Specify contemporary issues of handling risk management in Software development
SEM-VI	CORE-VI	**Web technologies**	**CO-1**`Learn Hyper Text Mark-up Language and be able to develop structure and design for web pages. **CO-2:** Learn usage of style sheets in developing the structure and design and fine tuning of web pages. **CO-**3: Learn basic features of JavaScript language and its usage in creating interactive web pages. **CO-4:** Learn JavaScript built-in object features, regular expressions usage, exception

			handling creating interactive web pages. CO-5: Learn the importance of good design and features and concepts relating
	ELECTIVE VIII-A	Computer Networks	CO-1: Understand modern network architectures from a design and performance perspective CO-2: Learn major concepts, principals involved in Data Link Layer and Network Layer CO-3: Analyze how to maintain QoS in Network and maintaining of Congestion Control CO-4: Get an idea of Application Layer functionalities and importance of Security in the Network
	ELECTIVE VII-B	PHP with My SQL	CO-1:. Create small programs using basic PHP concepts CO-2: Apply In-Built and Create User defined functions in PHP programming. CO-3:. Design and develop a Web site using form controls for presenting web based content. CO-4: Debug the Programmes by applying concepts and error handling techniques of PHP.

Department of Microbiology

Program Outcomes

PROGRAM OUTCOMES, PROGRAM SPECIFIC OUTCOMES, COURSE OUTCOMES	
Program Outcome	**Students will acquire and demonstrate competency in laboratory safety and in routine and specialized microbiological laboratory skills applicable to microbiological research or clinical methods,**

	including accurately reporting observations and analysis. Students will demonstrate engagement in the Microbiology discipline through involvement in research or internship activities.
Program Specific Outcome	A general course emphasizing distribution, morphology and physiology of microorganisms in addition to skills in aseptic procedures, isolation and identification. This course also includes sophomore level material covering immunology, virology, epidemiology and DNA technology.
Course: BSC MICROBIOLOGY	**Outcomes**
General Microbiology, Physiology and Microbial genetics	To inculcate knowledge of cell, cell divisions, structure & functions, microbial physiology and genetics of microbes.
Immunology and Medical Microbiology	To inculcate knowledge in human immune response towards microorganisms. To inculcate knowledge in relationship between human disease and microorganisms, pathogenicity, laboratory diagnosis and treatment methods.
Food, industrial Microbiology and Environmental Microbiology	Enable the student to get sufficient knowledge in relationship between food and microbes, techniques used in food processing. To inculcate knowledge in relationship between microbes and environment, knowledge in role of microorganisms in eco-system.

Department of Biotechnology

Programme Outcomes (POs) and Program Specific Outcomes

Name of The Programme (UG/PG)	Programme OutComes	Programme Specific Outcomes Students will be able to

UG	Students will gain Knowledge and Understanding about Biotechnology and able to explain the fundamental biological processes of metabolism, homeostasis, reproduction, development, and genetics, and the relationships between form and functional biological structures at the molecular, cellular, organismal, population, and ecosystem levels of the biological hierarchy	Stewardship responsibility
	Students will get Practical Skills in the field and laboratory Experiments Gene research will improve life, find cures, and improve medicine	Hands on expertise in Biological sciences
	Presentation skills (oral & writing) in life sciences.	Entrepreneurship skill development
	Scientific knowledge in life science and fundamental metabolism in all living organisms.	They will be able to clear competitive exams like Central University entrance Exams, JAM, TFIR etc.
	Opportunity to enhance research skill sin using biological principles and systems to create new products Knowledge about Research, biodiversity exploration, estimation and conservation	Career opportunities and job opportunities.
	Students learn to carry out practical work, in the field and in the laboratory, with minimal risk. They gain introductory experience in applying each of the following skills and gain greater proficiency in a selection of them depending on their choice of optional modules	
	Create, select, and apply appropriate techniques, resources, and modern instruments and equipments for Biochemical estimation, Biotechnology, Plant Tissue culture experiments, genetics,bio statistics, bio informatics, cellular and physiological activities of all living organisms with an understanding of the application and limitations.	

	Apply reasoning informed by the contextual knowledge to assess biotechnological research, its importance for society, health, safety, legal and environmental issues and the consequent responsibilities relevant to the biodiversity conservation practice.	

Course Outcomes of all Programmes Offered by Department -

Name of The Programme: B.Sc.Biotechnolog (UG)

Approved by BOS Academic Year -2020- 2021- for First Year

PROPOSED CBCS COMMON CORE SCHEME FOR B.SC. COURSE

Sl. No.	Name of the Course	Course Code	Year & Semester	Program Specific Outcomes
1	**PAPER-I : Cell Biology & genetics DSC: Discipline Specific Core-1A**	**BS 104**	**First Year SEMESTER - I**	The students will be able to understand the structure and Functions of Cells of the all living organisms.
				learn about the cell division processes & fundamentals of genetics in all living organisms.
				they will know the Importance of genes and genetic material and about Heredity.
2	**PAPER-II: Biochemistry & Microbiology DSC: Discipline Specific Core-1B**	**BS 204**	**First Year SEMESTER - II**	The students will learn about Bio molecules and thier Biochemical activities in metabolism
				Learn about physiological activities bu the involvement of Bio molecules
				the students will understand the relationship of complementary metabolic pathways of carbohydrates, proteins, lipids, enzymes, and

				vitamins, nucleic acids etc.
				The Students will understand about Biochemical Disorders.
				The students will learn about microbiology
				Understand various microorganisms
				Comprehend the concepts of Microbiol taxonomy and classification of microorganisms
				Learn about various Microbiological metabolism and can solve the problems caused by microbes, or exploit their abilities, they have to find out how microbes work

Approved by BOS Academic Year -2019- 2020 for Second Year

PROPOSED CBCS COMMON CORE SCHEME FOR B.SC. COURSE

Sl. No.	Name of the Course	Course Code	Year & Semester	Program Specific Outcomes
	PAPER-III: **Molecular Biology & Recombinant DNA Technology** **DSC: Discipline Specific Core-1C**	**BS 305**	**Second Year SEMESTER - III**	The students will learn about the basic concept on molecular Biology and rDNA Technology.
				understand the various methods in molecular Biology and rDNA Technology. Understand various molecular level mechanisms in daily life activities.
				be enlightened about the Construction of rDNA Technology for the production of various products for man kind.
	Skill Enhancement Course SEC-1: **Industrial Fermentations**	**BS 301**	**Second Year SEMESTER - III**	The students will acquire sufficient academic and practical experiences and become self employed in the Fermentation Technology.
				understand the various methods of Fermentation Technology
				be empowered with entrepreneurial skills through the production and disease management
				The students will learn about how to prepare fermeted foods and products for human walfare
				be able to impart the skills like isolation of microorganisms and strain improvement strategies.

				understand the entrepreneurial skills in fermentation technology.
	Skill Enhancement Course SEC-2: Immunological Techniques	**BS 302**	**Second Year SEMESTER - III**	learn about the importance of IMMUNOLOGICAL Techniques
				students will understand the various processes like Radio Immuno Assay and ELISA
				be empowered with entrepreneurial skills through the Immunological Techniques
	SEC-3: Molecular Markers In Plant Breeding	**BS 401**	**Second Year SEMESTER - IV**	students will understand the various molecular markers
				be empowered with entrepreneurial skills through the Plant Breeding Techniques
	SEC-4: Drug Designing	**BS 402**	**Second Year SEMESTER - IV**	The students will be Strengthened to promote Drug designing
				Understand the concepts of Drug target identification and validation
				enabled for entrepreneurship skill through this course
				students will understand the Applications of Molecular Markers in Plant Breeding
	PAPER-IV : Bioinformatics & Biostatistics DSC--1D: Discipline Specific Core	**BS 405**	**Second Year SEMESTER - IV**	The students will be able to learn about the basics of Bioinformatics
				understand the basic concepts of Biostatistics
				Students will learn about Tools in Bioinformatics and about Biological Databases
				The students will understand Sequence Alignment in Bioinformatics
				know about the basic principles of biostatistics and applications of Biostatistics in biological problems

Approved by BOS Academic Year -2018- 2019 for Final Year ,CBCS Common Core syllabi				
Sl. No.	**Name of the Course**	**Course Code**	**Year & Semester**	**Program Specific Outcomes**
	Skill Enhancement Course SEC-III Molecular Plant Breeding	**BS501**	**Third Year: Semester-V**	The students will acquire sufficient academic and practical experiences and become self employed in the Plant tissue culture and nursery ventures.
				be empowered with entrepreneurial skills through the production and disease management
	Generic Elective -1: Fundamentals of Biotechnology	**BS502**	**Third Year: Semester-V**	The students will understand Biotechnology concept
				understand the commercial values and uses of biotechnology products
				The students will understand construction of rDNA technology
				To know the fiber yielding Plants
	Molecular biology DSC-IE Discipline Specific Core	**BS503**	**Third Year: Semester-V Paper-V**	The students will be able to learn about the basics molecular biology
				to learn the functioning of the cell at the molecular level.
				understand the basic concepts of gene and genomes
				The students will be able to acquire knowledge about the nature and function of genes and processes of inheritance as they influence the characteristics of populations and species.
				The students will understand the concepts of molecular mechanisms with in cell/organisms.
	Plant Biotechnology;	**BS506**	**Third Year:**	understand the importance Plant biotechnology and its applications

	Discipline Specific Elective -A-DSE-1E		**Semester-V Paper-VII**	Understand the production of various products from plant cells / plants for human welfare
				Understand the impact of the plant diversity in social and environmental contexts, and demonstrate the knowledge of, and need for sustainable development
	Animal Biotechnology Discipline Specific Elective -B-DSE-2E	**BS506**	**Third Year: Semester-V**	Students will learn about animal biotechnology and its applications
				Making of medicinal value products
				Understand the animal physiology for life
				understand the entrepreneurial skills in bio technology by using animal cells
				be empowered with entrepreneurial skills through animal pharming
	Intellectual property rights Skill Enhancement Course SEC-4	**BS601**	**Third Year: Semester-VI**	The students will be Strengthened to promote industrial opportunities through good laboratory techniques.
				Understand the rights related to inventions
				enabled for entrepreneurship skill through this course
	Generic Elective GE-II: Applications of Biotechnology	**BS602**	**Third Year: Semester-VI**	The students will understand the use of the Living organisms resources to produce valuable products.
				Understand the Applications of biotechnology in various fields
				be enlightened about the opportunities for income and employment generation.
				be able to develop the ability to think and create useful plant / animal/ microbial products.
	Genetic engineering and Immunology (DSC-1F Discipline Specific Core)	**BS603**	**Third Year: Semester-VI**	The students will understand and appreciate Genetic engineering and know about gene transfer mechanisms from one organism to another
				know about the basic principles of rDNA technology and the production of useful products for mankind
				Know about the role of immune system and

				functions of immune system for daily life of organisms
	Discipline Specific Elective -C-DSE-3E **Industrial Biotechnology, IPR & Biosafety**	**BS606**	**Third Year: Semester-VI**	The students will understand the basic concepts Industrial fermentation technology
				The students will learn about the basic concept, technical skills, hands-on experience and training in Biotechnology industries
				Understand the fermentative production of foods and commercial production of bio-fuels
				learn about the basic concept of IPR and biosafety issues and about patent laws, world trade organisation
	Discipline Specific Elective **Environmental Biotechnology**	**BS606**	**Third Year: Semester-VI**	Understand the components of environment and about ecological system and about pollution and its pollutants
				The students will learn about the basic concept, technical skills,hands-on experience and training in Environmental bio technology
				Provided with appropriate training personnel for the promotion of production of bio- fuels