

2.6.1 - Programme and course outcomes for all Programmes offered by the institution are stated and displayed on website and communicated to teachers and students.

Governing body of Karnatak Science College is so reflective and the prime focus is on the vision and mission of the institute. The governance of the college matches vision and the mission of the college. Our vision and the missions are as follows.

VISION

Just Equitable, Tranquil, Harmonious Social Order with Scientific Temperament.

MISSIONS

- To enhance ability of students, in order to make them special and thereby creating experiences so surprisingly positive and memorable.
- Providing a variety of options for delivering dazzling science education to our students.
- To offer invigorating experiences in a way that build confidence and creates a sustainable, yet positive defining moments.
- To inspire students to believe in one, and do what they say they will.
- To help students network with people who have common needs and an interest to do something extra.
- Provide necessary infrastructure to identify and generate talented human resource pool, which will be beneficial to our society at large.
- To transform students into sharp thinkers, writers, speakers and leaders in the professions of their choice.
- To install scientific temperament in the younger generation.

GOALS AND OBJECTIVES

- Importing education of pure sciences,
- Providing the curriculum relevant to social needs.
- Create awareness about development in science and technology.
- Sensitizing the goal and competence among the youth.
- Inculcating a sense of national character contributing to national integration and development.
- Creating pleasant environment to achieve excellent in academic, co-academic and extracurricular activities,

- Establish MOU with neighbouring industries.
- Empowering students to take up challenging career opportunities.
- Designing an action plan to help physically challenged persons, slow learners students from rural backgrounds.

Programme Outcome

Department of Physics

Culminate in depth knowledge of almost all basic branches of physics such as mechanics, properties of matter, relativity, electricity and magnetism, wave motion, optics, thermal physics, electronics, classical mechanics, quantum mechanics, spectroscopy, nuclear physics, condensed matter physics and also advanced areas like Nanoscience, energy science, astrophysics, instrumentation.

Communicate effectively physics concepts with examples related to day to day life. Acquire ability of recognizing and distinguishing various aspects of physics found in real life. Learn, perform and design experiments in the laboratory to demonstrate the concepts principles, laws of physics, theories learnt in the class rooms. Acquire ability of critical thinking and logical reasoning in physics problems and their solutions. Develop ability to analyze physics problem including simple to thought provoking problems and apply the acquired knowledge to solve. Appreciate the importance of physics subjects and its application for pursuing interdisciplinary and multidisciplinary higher education and research in these areas. Understand the vast scope of physics as theoretical and experimental science with application in finding solution of problems in nature spanning from smallest dimension 10-15 nm to highest dimension 10²⁶ m in space, covering energy ranges from 10⁻¹⁰ eV to 10²⁵ eV. Think independently and develop algorithm and program using programming techniques for solving real world physics problems. Develop ability of working independently and to make in-depth study of various notions of physics. Develop ability to apply the knowledge and skill acquired through experiments of physics in laboratories to solve real life problems. Pursue advanced studies and research in varied areas of physical science.

Course Outcomes

1. The students 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 experimental design and implementation, analysis of experimental data and numerical and mathematical methods in problem solutions.
3. The students will demonstrate a purposeful knowledge of scientific literature and ethical issues related to physics.
4. The students will effectively communicate their knowledge of physics from basic concepts to specific detailed presentations through a variety of oral, written and computational modalities.
5. To acquire the basic knowledge of mechanics, properties of matter and gravitation.
6. Learn motion of bodies and sound waves.
7. To inspire interest for the knowledge of concepts in physical and geometrical physics.

Department of Chemistry

Programme Outcome

Students will demonstrate an understanding of major concepts in all disciplines of chemistry. Students will employ critical thinking and the scientific method to design, carry out, record and analyze the results of chemical experiments and get an awareness of the impact of chemistry on the environment, society and cultures outside the specific community.

Course Outcomes

1. Students will gain an understanding of methods of analysis related to chemical analysis goals such as detection of elements.
2. Enable the students to get understand the laws of thermodynamics and the Computer C Programming.
3. After completing this course, students must have a basic knowledge of textile chemistry for an understanding of the chemical structure and properties of textile fibers and the properties of textile precursors and dyes.
4. To understand the principles of radio activity.
5. To study the magnetic properties of molecules, chemical kinetics and photo chemistry.
6. To enable the students to learn about classification of polymers- methods of preparation of polymers, different types of polymerization, molecular weight of polymers.
7. Students to learn about electro chemistry.

Department of Botany

Programme Outcome

To inculcate in students the scientific study of plants this in turn is used in many aspects of human life. Plants are necessary for supporting all life forms on earth, either directly or indirectly. It's study helps in better understanding of our selves at the cellular and genetic level.

Course Outcomes

1. Students will be able to define and explain major concept in the biological sciences.
2. It will help student to use instruments in biological processes and interpret the results in a better and scientific way.
3. It enable the students to explain and apply the scientific method including designing and conducting experiments and testing hypotheses.
4. Students will be able to communicate biological knowledge in oral and written form.
5. Students are able to impart their practical knowledge in the field of agriculture, pharmacology, herbal medication, environmental issues etc.

Department of Zoology

Programme Outcome

To understand the nature and basic concepts of Zoology. To understand the analysis of relationship among animals, plants, microbes and environment. It provides insight into how "Life" works and consequently, how we work. The concept of students is cleared in the laboratory of Bio- Science.

Course Outcomes

1. Students will be able to demonstrate the ability to read, understand and critically review scientific information.
2. Students will be able to demonstrate ethical conduct in scientific activities.
3. Students will be able to recognize the relationship between structure and function at all levels: molecular, cellular and organism.

Department of Mathematics

Programme Outcome

Think in a critical manner. Familiarize the students with suitable tools of mathematical analysis to handle issues and problems in mathematics and related sciences. Acquire good knowledge and understanding to solve specific theoretical and applied problems in advanced areas of mathematics and statistics. Provide students/learners sufficient knowledge and skills

enabling them to undertake further studies in mathematics and its allied areas on multiple disciplines concerned with mathematics. Encourage the students to develop a range of generic skills helpful in employment, internships and social activities.

Course Outcomes

1. Demonstrate basic manipulative skills in algebra, geometry, trigonometry and beginning calculus.
2. Apply the underlying unifying structures of mathematics and the relationships among them.
3. Demonstrate proficiency in writing proofs. Investigate and apply mathematics problems and solutions in a variety of contexts related to science, technology, business and industry and illustrate these solutions using symbolic, numeric or graphical methods.
4. Students can understand the foundation of Mathematics.
5. They are able to perform basic computation in higher Mathematics.
6. Students are able to develop problem solving skills.
7. They are able to communicate Mathematical ideas with others.
8. They can enhance the quality of analysis and research in different mathematical fields.
9. Operations research can develop the management quality in different industries and factories.

Department of Geography

Programme Outcome

Geography mainly concerns changes in spatial attributes in a temporal perspective. Geography is tailored to meet the students' specific educational and professional goals in mind. It focuses on spatial studies, qualitative as well as quantitative, and emphasises on human-environment relationship. During the programme, the students are trained on advanced concepts of physical and human geography. Allows them to concentrate on specific areas of the subject, on which they complete their field reports. After completing the course, the students will be amply prepared for professional careers in geography and allied disciplines like GIS and Remote Sensing.

Course Outcomes

1. It develops the skills including critical thinking, problem solving, reasoning, analysis, interpretations and synthesizing information's and communication literacy, media and internet literacy, data interpretation and analysis and computer programming.

2. It imparts the knowledge about different places on earth and how they relate with each other.
3. It helps the students to identify and appreciate important events and National and International policies; make better and informed decisions regarding the best use of National resources.
4. It helps the students to know about the relationship between human being and the environment and the general process of natural resources.
5. It enables the students to understand how population growth and technological advances affect the environment.
6. It help the students to gain the understanding of International mattes and multicultural concerns, read maps, interpret local and global information and understand International networks for trade.

Bachelor of Computer Applications

PROGRAMME OUTCOME

Focuses on preparing student for roles pertaining to computer applications and IT industry. Start from the basics and in every semester learns each and everything about computers. Develop programming skills, networking skills, learn applications, packages, programming languages and modern techniques of IT. Get skill and info not only about computer and information technology but also in common, organization and management. Learn programming language such as Java, C++, HTML, SQL, etc... Information about various computer applications and latest development in IT and communication system is also provided. Gives overview of the topics in IT like networking, computer graphics, web development, trouble shooting, and hardware and software skills. Bachelor in computer applications (BCA) gives a number of opportunities to individuals to go ahead and shine in their lives. A few of them are like software programmer, system and network administrator, web designer faculty for computer science and computer applications.

Course Outcomes :

1. Develop the student's ability to use English language accurately and effectively by enhancing their communication skills and Mastering the art of a professional business presentation
2. Distinguish different communication process and its practical application.

3. More effective written communication Demonstrate a working knowledge Definite and Indefinite Integrals. Evaluate expectations and conditional expectations of random variables Familiar with parts of computer
4. Understand the input and output devices.
5. Basic ideas of storage devices, computer Networks and Operating System
6. Use the 'C' language constructs in the right way Design, develop and test programs written in 'C'
7. Create programs involving decision structures, loops, strings and functions.
8. Design programs involving structures and pointers.

Department of Geology

Programme Outcome

Programme Outcomes Ensuring an atmosphere conducive to teaching and learning. Preparing students for the competitive world. Holistic development of young adults enrolled as students. Providing Quality Higher Education and taking care of intellectual, social, economic, emotional needs of students Adopting student-friendly approaches to teaching and learning as far as practicable Kindling interest in students not only in their subjects but also in related fields and help them ramify and diversify areas of interest Encouraging participation of Faculty in discussions to teach students with different learning paces Promotion of leadership qualities.

Course Outcomes

1. Students will acquire a solid base of knowledge in the science of geology as a whole as well as earth materials, earth history, sedimentation and stratigraphy, deformational processes and structural features, and geomorphic processes and landforms.
2. Students will develop proficiency in conveying complex geologic concepts in clear, technically correct writing.
3. Students will develop proficiency in oral communication of complex geologic concepts.

4. Students will develop the aptitudes and dispositions necessary to help democratize society by obtaining and maintaining employment as a professional geologist.

Criminology and Forensic Science

Program Outcomes

Understand the concepts of basic and applied sciences including psychology and its applications in forensics. Analyze the sample in field and laboratory test of crime exhibits with the latest norms and standards. Analyze the different crime scenario and make decisions regarding analysis of crime exhibits. Evaluate the various results and presenting into the court of law on requirements. Apply the knowledge of basic and applied sciences, social sciences and arts in various forensic problems. Identify and analyze forensic problems using standard methods based on scientific approach. Understand, select, and apply appropriate techniques, resources, and modern scientific techniques with an understanding of its merits and limitations. Apply ethical principles and commit to professional ethics and responsibilities and norms of the forensic practices. Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology. Understand and analyze the impact of forensic solutions to the society and criminal justice setup. Function effectively as an individual, and as a member or leader in diverse teams, and in a multidisciplinary setting. Recognize the need for, and have the preparation and ability to engage in independent and lifelong learning in the broadest context of Technological change.

Course Outcome:

1. Understand the basic concepts of crime, criminology, victimology and forensic science.
2. Understand and interpret the criminal behavior and its linkage to different crime scenario
3. Interpret various principles of forensic science and its connection to different crime scenario
4. Analyze various crime scenario and apply it into a case study.
5. Classify and evaluate crime and its connections with victim and perpetrator.

Department of Statistics

Program Outcomes

Statistics is the language of the uncertainties riddled modern information age. This program is a compact combination of detailed courses of Statistics and adequate amount of courses on Computer Science, Mathematics and Operations research to complement and offer diversification after the completion of program. The thrust of the program is to provide a platform for pursuing higher studies leading to post-graduate or doctorate degrees. Along with this students are equipped with skill enhancement courses like Research methodology, Statistical packages and R language. Apart from this there is a range of Generic electives courses in Economics, Commerce, Computer Science etc. which students choose as per their interest and aptitude. This enhances theoretical rigor with technical skills which prepare students to become globally competitive to enter into a promising professional life even after graduation. This program offers a range of traditional avenues in academics, Govt. Service, IAS, Indian Statistical/ Economic Services, Industries, Commerce, Investment Banking, Banks and Insurance Sectors, CSO and NSSO, Research Personnel/Investigator in Govt. organizations such as NCAER, IAMR, ICMR, Statistical and Economic Bureau & various PSUs., Market Research, Actuarial Sciences, Biostatistics, Demography etc. It also provides an array of non-traditional employment avenues ranging from Stock Brokers Analyst, Sports Analyst, Poll Analyst, Business Analyst, Financial Analyst, ContentAnalystetc.

Course Outcomes

1. Student will learn concepts of statistical population and sample, variables and attributes.
2. Tabular and graphical representation of data based on variables.
3. Student will understand Conditions for the consistency' and criteria for the independence of data based on attributes.
4. Students will learn measures of central tendency, Dispersion, Skewness and Kurtosis.
5. Students will know the moments and their use in studying various characteristics of data.
6. Students will understand different approaches to the theory of probability.
7. Students will understand the important theorems on probability and their use in solving problem. Concept of correlation, various correlation coefficients- Pearson's correlation coefficient, Spearman's rank correlation coefficient, partial correlation coefficient and multiple correlation coefficient.

8. Students understand the concept of Principle of least squares for curve fitting and regression lines.



Principal
Karnatak Science College
Dharwad.

KARNATAK UNIVERSITY, DHARWAD



'A' Grade
NAAC Accredited 2014

CBCS SYLLABUS

For

BACHELOR OF SCIENCE

ZOOLOGY

(I to IV Semesters)

FROM

2020-21 & ONWARDS



PREAMBLE

Zoology is the study of animals as well as human beings. It comprises and deals with the study of Organism Development, structure, classification, habits, distribution, physiology, biochemistry, genetics, evolution, etc. Many branches, specialization and fields of Zoology have contributed immensely to the progress of human welfare. The university has introduced the CBCS system, which gives an opportunity to the students to choose any field and acquire knowledge in the subject Zoology. The knowledge gained in the subject not only leads the students to pursue higher education and research, but also enables them to undertake self employment.

OBJECTIVES

The main purpose of B.Sc. Zoology course is to create knowledge among the students to know the importance of animals with emphasis on the following domains.

- To improve the knowledge on the systematic classification, physical structure, physiological reactions, biological functions, culture and maintenance of beneficial organisms, etc.
- To gain skill in microscopy, preparation of sample, observations of animal activities at molecular, structural and organisms level.
- * To make the students to acquaint with estimations, analysis molecules to carry out routine clinical analysis of any samples.
- To make the students to aware and emphasize the role of genes/chromosomes in inheritance and genetic diseases.
- To make them self employable and a good entrepreneur in due course.

For fulfilment of the above objectives, the following papers namely, non chordate, histology, evolution, paleontology, biostatistics, molecular cell biology, developmental biology, biochemistry, physiology, ecology, applied zoology, genetics, biotechnology, nanotechnology, ecology, zoogeography and wildlife biology have been introduced in the B.Sc. Zoology degree course.

OUTCOME OF THE COURSE

By learning Zoology subject with emphasis on above said different domains, the students will acquire the necessary knowledge and skills to pursue further studies and research in a wide range of subjects like, molecular biology, applied zoology, genetics, biotechnology, environmental biology, wildlife biology, ethology, etc. One can also make use of the knowledge to become a self entrepreneur using the

economically important animals and their products.