



# Indo-American College

Not just another college

Permanently Affiliated to THIRUVALLUVAR UNIVERSITY, Vellore.

Accredited by NAAC with 'B' Grade

Recognised Under Section 2 (f) & 12 (b) of UGC Act.

T.N.Govt.G.O.MS. No.172, Higher Education Dept, dt.27-4-1998

## DEPARTMENT OF BIOCHEMISTRY & BIOINFORMATICS

### PROGRAMME OUTCOME (M. Sc)

<b>PO1:</b>	The students achieved for best computational performance in a specific context
<b>PO 2:</b>	They cultivate the highest level of learning and technological key outcomes.
<b>PO 3:</b>	We were choose social welfare oriented skill based subject and its applications in biology, helps to the students & social welfare.
<b>PO 4:</b>	We were organizing many extension activities live internship programme, industrial visit, hands on training workshop, project oriented instrumentation programmes. It exposes the students for job opportunity and individual talents.
<b>PO 5:</b>	These competence of a course possess upon achieved for course specific Goals

### COURSE OUTCOMES

S. No	Course Code	Course Title	Course Outcomes
1.	GBC11	Advances In Cell Biology	<ul style="list-style-type: none"><li>The course emphasize the cellular organization in prokaryotes and eukaryotes and explains the regulation of molecular trafficking and inter/intra cellular communication with the response to the external stimuli.</li></ul>
2.	GBC12	Chemistry Of Biomolecules	<ul style="list-style-type: none"><li>The course study of the structure of bio molecules and its important functions in the living system and understood the various significance.</li></ul>
3.	GBC13	Human Physiology	<ul style="list-style-type: none"><li>The course helps the students to understand the human physiology such as blood components and circulation digestion, vision, respiration, excretion, hormonal secretions that is important mechanisms and understanding healthcare by practicing professional ethics.</li></ul>

4.	GEBC14A	Pharmaceutical Biochemistry	<ul style="list-style-type: none"> <li>This course gives the knowledge of pharmacokinetics and helps to understand the Pharma science in a variety of applications, mechanisms of drugs. And also know Advanced clinical drugs and chemo therapy.</li> </ul>
5.	GEBC14B	Plant Biochemistry	<ul style="list-style-type: none"> <li>The course focuses on plant physiology. Students to gain the knowledge on photosynthesis, plant hormones, nitrogen fixation, stress tolerance and types of stress and defense mechanism in plants.</li> </ul>
6.	GEBC14C	Cancer Biology	<ul style="list-style-type: none"> <li>Cancer describes an enormous spectrum of diseases that all originate from uncontrolled cellular growth. Broadly divided into benign tumors.</li> </ul>
7.	GOBC15A	Bio Instrumentation	<ul style="list-style-type: none"> <li>This course gives to the knowledge and skills of biological instruments such as microscope, centrifuge, chromatography, electrophoresis, spectroscopy and its type of various methods using for clinical analysis, and quantitative of Biomolecules.</li> </ul>
8.	GOBC15B	Developmental Biology	<ul style="list-style-type: none"> <li>This course deals with the development of higher organisms and various regulatory factors controlling the expression on a gene, it also emphasizes the effects of teratogens during the development of an embryo.</li> </ul>
9.	GOBC15C	Nanoscience And Technology	<ul style="list-style-type: none"> <li>The course helps the students to understand the detailed on concepts of nano science, nano particles and it types, synthesis characterization process and deals to the treatments of disease cells in clinical trials.</li> </ul>
10.	GBC21	Analytical Biochemistry	<ul style="list-style-type: none"> <li>The course helps the students to understand the concepts for analysis and diagnosis using various analytical techniques and report the results considering ethics and human values.</li> </ul>
11.	GBC22	Molecular Biology	<ul style="list-style-type: none"> <li>The course helps the students to understand the detailed concepts of Biomolecules that is important in understanding the DNA, RNA and it mechanisms, gene expressions in biological system.</li> </ul>

12.	GBC23	Metabolic Regulation And Disorders	<ul style="list-style-type: none"> <li>This course enables us to understand the metabolic pathways pertaining to the production and utilization of energy which includes anabolic and catabolic reactions and lack of enzyme with deals on several disorders.</li> </ul>
13.	GPBC24	Practical I	<ul style="list-style-type: none"> <li>This practical focuses on the isolation , Quantitative analysis of the biological important molecules from living samples, and also various biochemical techniques are helps us to use it on research area and also in nutritional and clinical diagnosis .</li> </ul>
14.	GPBC25	Practical II	<ul style="list-style-type: none"> <li>This practical focuses on the identifications and analysis of immunological studies on blood grouping ,pregnancy ,rheumatoid factor, microbial techniques and various clinical diagnosis.</li> </ul>
15.	GEBC26A	Microbiology	<ul style="list-style-type: none"> <li>The course Describe the microbial world, Growth and control of microorganisms. Study of different types and structure of viruses, Bacteria and disease causing agents widen the knowledge of students. Study of Industrial importance of bacteria in dairy, fermentation process. Eukaryotic organisms like fungi and algae contribute the knowledge on sustainable environment.</li> </ul>
16.	GEBC26B	Bio Informatics	<ul style="list-style-type: none"> <li>The course helps to bioinformatics methodology and distinguishes between the commercial, research perspective of bioinformatics and gain knowledge of computational biology.</li> </ul>
17.	GEBC26C	Biochemical And Environmental Toxicology	<ul style="list-style-type: none"> <li>The course helps to knowledge of toxic compounds, clinical drug delivery methods, toxicity testing of environmental system.</li> </ul>
18.	GOBC27A	Herbal Medicine	<ul style="list-style-type: none"> <li>The course helps to understand herbal science with medicinal plants, traditional medical knowledge and plants in diet in life that are applicable to the human health.</li> </ul>

19.	GOBC27B	Herbal Drug Development	<ul style="list-style-type: none"> <li>The course gives knowledge of herbal drugs importance, collection of herbs process and preservation methods. Isolation and estimation of phyto constituents and drug development for human health.</li> </ul>
20.	GOBC27C	Organic Farming	<ul style="list-style-type: none"> <li>The Study of this course gives a nontoxic way of agriculture practices gives ecofriendly food production and safety .To know The certification of organic products with make entrepreneurship skills</li> </ul>
21	GFS20	Field Study	<ul style="list-style-type: none"> <li>Related to field of interest student on field collect the information and submit report.</li> </ul>
22.	GHR20	Human Rights	<ul style="list-style-type: none"> <li>The study of this course gives knowledge of human rights, importance various concepts in international, political, social and cultural rights, declarations of UNO.</li> </ul>
23.	GBC31	Molecular Endocrinology	<ul style="list-style-type: none"> <li>This course gives knowledge of endocrine gland that physiological functions and mechanism of endocrine system, hormonal action, regulations and importance.</li> </ul>
24.	GBC32	Enzyme Technology	<ul style="list-style-type: none"> <li>This course gives understanding enzymes classifications and purification process, how enzymes could be used as drugs in medical field and to use it for the development of industry, society and for healthcare by practicing professional ethics.</li> </ul>
25.	GBC33	Biotechnology	<ul style="list-style-type: none"> <li>The course provides for the students to learn about the genetic engineering tools, sequencing methods, gene transfer methods, industrially important products and their various applications of Immunology and Animal Biotechnology related to human welfare.</li> </ul>
26.	GEBC34A	Phytomedicine	<ul style="list-style-type: none"> <li>This course provides knowledge on medicinal use of plants and chemical constituents applied to various clinical diagnosis .propagation of rare plants marketing and export ideas.</li> </ul>
27.	GEBC34B	Genetic Engineering	<ul style="list-style-type: none"> <li>The course highlights the different concepts of genetic engineering and its</li> </ul>

			<p>applications. It addresses the environmental issues and conservation of energy resources. It equips the students with molecular techniques in genetic engineering. The syllabus emphasizes various methods of waste management, benefits of bioremediation and importance of bioleaching.</p>
28.	GEBC34C	Diagnostic Biochemistry	<ul style="list-style-type: none"> <li>This course highlights the metabolic disorders and diagnostics. An understanding of the concepts helps in understanding the in born errors, iso enzymes, lipid metabolism diagnosis and hormonal importance. It also facilitates the students to practice medical ethics in diagnosis and treatment.</li> </ul>
29.	GOBC35A	Mushroom Cultivation	<ul style="list-style-type: none"> <li>This course gain a knowledge about types of mushrooms, its cultivation process, storage methods, recipes and its nutritive values, research purpose.</li> </ul>
30	GOBC35B	Methods In Food Preservation	<ul style="list-style-type: none"> <li>This course provide a knowledge of food processing ,preservation process and techniques ,food drying and freezing concepts are understand about food preservation.</li> </ul>
31	GOBC35C	Human Physiology And Nutrition	<ul style="list-style-type: none"> <li>The course helps the students to understand the human physiology such as blood circulation, respiration, digestion, vision, excretion, reproduction, Analysis nutrition values of food that is important in understanding healthcare by practicing professional ethics.</li> </ul>
32	GBC41	Research Methodology	<ul style="list-style-type: none"> <li>The course helps students to have knowledge on metric system, atomic orbital, physical chemistry, radioactivity which is important in working in industry and applications extend to environment.</li> </ul>
33	GBC42	Advanced Clinical Biochemistry	<ul style="list-style-type: none"> <li>This course highlights the metabolic disorders and diagnostics. An understanding of the concepts helps in understanding the biochemical reasoning behind many disorders and to find new therapies and thus practice human values for the up liftmen of society and to reduce the pain and sufferings through</li> </ul>

			better health care through early diagnosis. It also facilitates the students to practice medical ethics in diagnosis and treatment.
34	GEBC43A	Bio Informatics	<ul style="list-style-type: none"> <li>The course helps to bioinformatics methodology and distinguishes between the commercial, research perspective of bioinformatics and gain knowledge of computational biology.</li> </ul>
35	GEBC43B	Nano Biotechnology	<ul style="list-style-type: none"> <li>Nano biotechnology is a new field of science that introduces special physicochemical and biological properties of nanostructures and their applications in various areas such as medicine and agriculture.</li> </ul>
36	GEBC43C	Stem Cell Technology	<ul style="list-style-type: none"> <li>Stem cell technology is a rapidly developing field that combines the efforts of cell biologists, geneticists, and clinicians and offers hope of effective.</li> </ul>
37	GOBC44A	Evolutionary Biology	<ul style="list-style-type: none"> <li>Evolutionary biology is a sub discipline of the biological sciences concerned with the origin of life and the diversification and adaptation of life forms over time.</li> </ul>
38	GOBC44B	Bioremediation	<ul style="list-style-type: none"> <li>Bioremediation is a branch of biotechnology that employs the use of living organisms, like microbes and bacteria, in the removal of contaminants, pollutants, and toxins from soil, water, and other environments.</li> </ul>
39	GOBC44C	Life Science Disease And Prevention	<ul style="list-style-type: none"> <li>The course helps the students to understand the concepts for balanced diet, basic lifestyle diseases, communicable and non-communicable diseases and how to maintain good health.</li> </ul>
40	GPBC45	Practical III Enzymology And Clinical Diagnostics	<ul style="list-style-type: none"> <li>This practical's focuses on the skills pertaining to the clinical diagnosis. The evaluation of diseases and disorders improves proper diagnosis and efficient treatment strategies. Thereby enhancing the live hood.</li> </ul>

41	GPBC46	Practical IV Haematological Methods And Urine Analysis	<ul style="list-style-type: none"><li>• The practical deals with gain a clinical knowledge of blood collection, preservation, hematological studies in humans and also in urine sample collection, preservation and quantitative analysis of Biomolecules.</li></ul>
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