

# **KUMARAGURU COLLEGE OF TECHNOLOGY,**

An autonomous Institution affiliated to Anna University, Chennai

**COIMBATORE – 641 049.**

## **B.Tech., BIOTECHNOLOGY**

**REGULATION 2024**



**I to II Semesters**

**Department of Biotechnology**

## VISION

Strong teaching and research foundation in the area of biotechnology and allied fields through knowledge dissemination to students and the public and to scale new heights in the frontier areas of health and environment and ethics for welfare of humankind globally.

## MISSION

- Develop dynamic curriculum and syllabus to promote innovative and creat practices.
- Encourage students for innovation and setting start-ups and equip leadership an entrepreneurial skills
- Train students on issues related to social welfare.

## PROGRAM SPECIFIC OBJECTIVES (PSOs)

The Program Specific Objectives of Environmental Engineering Postgraduate Program are toprepare the graduates:

**PSO1:** To become successful professional/ entrepreneur by inculcating knowledge in interdisplinary areas in Science, Technology, Engineering and Management

**PSO2:** To provide strong foundation in core areas of biotechnology to provide biotechnological solutions to real life problems with economic, social and sustainable viability.

**PSO3:** Sensitize on environmental, health and bioethical issues, IPR

## PROGRAM OUTCOMES (POs)

Graduates of the Environmental Engineering Postgraduate Program should have the ability to:

**PO1:** Engineering knowledge: Apply the knowledge of mathematics, science, engineering

fundamentals, and an engineering specialization to the solution of complex engineering

problems.

- PO2:** Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- PO3:** Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- PO4:** Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- PO5:** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- PO6:** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- PO7:** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- PO8:** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- PO9:** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- PO10:** Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- PO11:** Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- PO12:** Life-long learning: 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.

**PSO1:** An ability to apply the knowledge of food/ medical / environmental and computational biology to perform image analysis and processing, data mining and Big data analytics.

**PSO2:** An ability to understand and design solutions using bioprocess principles, bioanalytical instrumentation and techniques and cell culture techniques.

**KUMARAGURU COLLEGE OF TECHNOLOGY****BIOTECHNOLOGY  
REGULATION 2024  
B.Tech., Biotechnology****Semester I**

S.No	Course code	Course Title	Course Mode	Course Type	L	T	P	J	C
1	24HST101	Heritage of Tamil	Theory	HS	1	0	0	0	1
2	24MAI112	Computational Linear Algebra and Calculus	Embedded	BS	3	0	2	0	4
3	24CYI103	Foundations of Chemistry for Biotechnology	Embedded	BS	3	0	2	0	4
4	24BTT101	Concepts of Biology	Theory	BS	2	0	0	0	2
5	24ADP001	Basics of AI	Practical	ES	0	0	2	0	1
6	24BTT102	Bioprocess Calculations	Theory	ES	2	1	0	0	3
7	24INP102	Innovation Practicum -1	Practical	ES	0	0	2	0	1
8	24MEI103	Computer-Aided Engineering Graphics	Embedded	ES	2	0	2	0	3
9	24HSP111	Holistic Wellness- 1	Practical	HS	0	0	2	0	1
10	24INP101	Design Thinking	Practical	HS	0	0	2	0	1
11	24INO--	FCLF -General Stack	Practical	OE	0	0	2	0	1
<b>Total Credits</b>									<b>22</b>
<b>Total Contact Hours/week</b>									<b>30</b>

**Semester II**

S.No	Course code	Course Title	Course Mode	Course Type	L	T	P	J	C
1	24HST102	Tamil and Technology	Theory	HS	1	0	0	0	1
2	24HST100	Effective Communication/ Professional Communication	Theory	HS	2	0	0	0	2
3	24MAI122	Advanced Computational Calculus	Embedded	BS	3	0	2	0	4
4	24PHI105	Foundational Physics for Biotechnology	Embedded	BS	3	0	2	0	4
5	24BTI103	Biochemistry and Cellular Energetics	Embedded	BS	3	0	2	0	4
6	24BTT104	Cell Biology	Theory	PC	3	0	0	0	3
7	24INP103	Innovation Practicum -2	Practical	ES	0	0	2	0	1
8	24CSI101	Logical thinking and Problem Solving	Embedded	ES	3	0	2	0	4
9	24HSP112	Holistic Wellness- 2	Practical	HS	0	0	2	0	1
10	24INO1--	FCLF-General Stack	Practical	OE	0	0	2	0	1
<b>Total Credits</b>									<b>18</b>
<b>Total Contact Hours/week</b>									<b>22</b>