

B.Sc. Biotechnology: Semester-III	
BST305: Biotechnology –Issue and Ethical	
Teaching Scheme Lectures: 3 hrs/Week Tutorials: 1 hrs/Week Credits: 4	Examination Scheme Class Test - 12Marks Teachers Assessment - 6Marks Attendance – 12 Marks End Semester Exam – 70 marks

Prerequisite: BST 206 Ecology & Environment Biotechnology

Course Objectives:

1. To give overview of Genetic screening for any predisposition symptoms
2. To give complete knowledge of Social issue, public opinions against the molecular technologies
3. To describe ethical issues against the molecular technologies
4. To explain the Legality, morality and ethics, the principles of bioethics: autonomy, human rights, beneficence, privacy, justice, equity etc.
5. To explain biomedical practice to biotechnology, ethical conflicts in biotechnology
6. To explain Intellectual Property Rights

Course Outcomes:

After completing the course, students will be able to:

CO1: Understand and apply the principles and techniques of molecular biology which prepares students for further education and/or employment in teaching, basic research, or the health professions

CO2: Students will be able to design and carry out scientific experiments as well as accurately record and analyze the results of such experiments

CO3: Students will be skilled in problem solving, critical thinking and analytical reasoning as applied to scientific problems

CO4: Students will be able to clearly communicate the results of scientific work in oral, written and electronic formats to both scientists and the public at large

Detailed Syllabus:

UNIT-1 Molecular technologies

Molecular technologies – an overview of Genetic screening for any predisposition symptoms, Cancer screening, Cloning, Gene therapy, DNA fingerprinting (Paternity and Forensics) in vitro fertilization, surrogate motherhood, PGD, transgenic organisms, Xeno-transplantation, GMOs, Social issues - public opinions against the molecular

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Technologies, Legal issues – legal actions taken by countries for use of the molecular technologies. Ethical issues – ethical issues against the molecular technologies

UNIT-2 Legality, morality and ethics

Legality, morality and ethics, the principles of bioethics: autonomy, human rights, beneficence, privacy, justice, equity etc., biomedical practice to biotechnology, ethical conflicts in biotechnology - interference with nature, bioethics vs. business ethics, Necessity of Bioethics, different paradigms of Bioethics – National & International

UNIT-3 Intellectual Property Rights

Intellectual Property Rights – Why IPR is necessary, TRIPS & IPR, IPR – national & international scenario, IPR protection of life forms, Biotechnology and bio-safety concerns at the level of individuals, institutions, society, region, country and the world. Role of patent in pharmaceutical industry, computer related Innovations, Case studies Rice, Haldi, Neem, etc. and challenges ahead

Reference Books:


1. The law and strategy of Biotechnological patents by Sibley. Butterworth publications.
2. Intellectual property rights – Ganguli – Tata McGrawhill
3. Intellectual property right – Watal – Oxford Publishing House.


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