

Sem.	CourseCode	ADVANCEDLEARNERS COURSE - II BIOETHICS AND INTELLECTUAL PROPERTY RIGHTS	Total Marks: 100	Hours Per Week	Credits
III	17PBFAL311		ESE: 100	Self Study Paper	2

Objective(s):

- This subject aims at studying ethical concerns about patenting of living organisms and genetic material.
- The objectives also include the effects of international trade, future economic systems and the ethical and social impact of Biosciences.

Course Outcome:

On successful completion of the course students will be able to:

CO1 - Understand the concept of Genetic Engineering

CO2 - Learn the knowledge of Ethical Issues

CO3 - Understand the Biosafety concepts

CO4 - Gain the knowledge of Intellectual Property Rights and Regulations

CO5 - Understand the Patent and its Types

UNIT I**Biosciences, Society and Legal Issues**

Biotechnology and Social responsibility, Public acceptance issues in Biotechnology, Biotechnology and Biological knowledge in developing countries: The legal and socioeconomic impacts of biotechnology, public awareness in genetic engineering . Biodiversity- National and International laws to maintain Biodiversity, Environmental sustainability, Public Vs Private funding.

UNIT II**Ethical Issues:**

Ethical issues regarding genetically modified organisms (foods and crops); bioethics in biodiversity and resource management. Ethical issues in Human Cloning and Stem Cell Research. Testing of drugs on human volunteers, organ transplantation and ethical issues; Xenotransplantation and its ethical and social issues. Human Genome project and Genome editing.

UNIT III**Biosafety Concepts And Issues**

Introduction to Biosafety: definition and needs of biosafety, levels of biosafety, applications of biosafety at work place, Biosafety during development of biotech products. Good manufacturing practice and Good laboratory practices (GMP and GLP). The Cartagena protocol on biosafety. Safety assessment of foods and food ingredients produced by genetically modified microorganisms. Social and ethical implications of biological weapons

UNIT IV

Intellectual Property Rights And Regulations

Introduction to IPR: IP definition and needs, GATT, TRIPS, & WTO Agreement, Different forms of IPR -Copyrights, Trademarks, Industrial designs, Geographical Indications, Traditional Knowledge, Plant varieties, Trade Secrets. Role of IPR in Research and Development. Increasing the value of a technology through the use of Trademark.

UNIT V

Patent

Introduction to Patents -Types of Patent applications: Classification of patents in India, Classification of patents by WIPO, Categories of Patent, Special Patents, Patenting Biological products. Patentable subject matter, Inventions that are not Patentable, Term of patent, Maintenance of a Patent.

Text Books

1. Sateesh, M. K. Bioethics and Biosafety. I. K. International Publishers.
2. Thomas, J.A., Fuch, R.L. (2002). Biotechnology and Safety Assessment (3rdEd). Academic Press.
3. Fleming, D.A., Hunt, D.L., (2000). Biological safety Principles and practices (3rd Ed). ASM Press, Washington.

Reference Books

1. Sassoon A. Biotechnologies and development. UNESCO Publications, 1988.
2. Intellectual Property Rights on Biotechnology by Singh K. BCIL, New Delhi.
3. WTO and International Trade by M B Rao. Vikas Publishing House Pvt. Ltd.
4. Intellectual Property Rights in Agricultural Biotechnology by Erbisch F H and Maredia KM. Orient Longman Ltd.
5. Cartagena Protocol on Biosafety, January 2000.
6. Food Biotechnology in the Ethical prospective, 2nd edition, by Paul B. Thompson, published Springer.

QUESTION PAPER PATTERN		
SECTION - A	SECTION - B	SECTION - C
10 x 2 = 20 Marks Ten questions out of 12 Two questions from each unit	5 x 7 = 35 Marks 5 Questions (Either or choice) Two questions from each unit	3 x 15 = 45 Marks (Answer any three Questions out of 5) One Question from each unit