

16BT305 BIOETHICS AND INTELLECTUAL PROPERTY RIGHTS

Hours Per Week :

L	T	P	C
3	1	-	4

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Course Description and Objectives:

This course describes ethical perspective and moral obligations related to biotechnology. It also imparts knowledge on intellectual property and its legalities. The objective of this course is to create awareness on legal rights, responsibilities, regulatory affairs and ethical stand point of intellectual assets in the field of biological research.

Course Outcomes:

Upon completion of the course, the student will be able to

- CO1: Design containment facilities at different biosafety levels.
- CO2: Explore the biosafety opportunities by analysing key relevant obligations in WTO agreements.
- CO3: Devise the business strategies for small and medium sized enterprises.
- CO4: Apply the environmental ethics on biological conservation and global issues.
- CO5: Acquire adequate knowledge in the use of genetically modified organisms and its effect on human health.

SKILLS:

- ✓ *Read and understand scientific article/patent.*
- ✓ *Complete the procedure for a patent application.*
- ✓ *Imbibe scientific discipline.*

UNIT - 1

L-9, T-3

ENGINEERING ETHICS AND BIOETHICS: Senses of "Engineering Ethics", variety of moral issues, types of inquiry, moral dilemmas, moral autonomy; Kohlberg's theory, Gilligan's theory, consensus and controversy; Models of professional roles - theories about right action, self-interest, customs and religion, uses of ethical theories; Introduction to bioethics; Social and ethical issues in biotechnology; Definition of biosafety; Biosafety for human health and environment; Social and ethical issues; Use of genetically modified organisms and their release into the environment; Special procedures for rDNA based products, transgenic plants and animals.

UNIT - 2

L-9, T-3

REGULATORY AFFAIRS: Regulation, national and international guidelines of biosafety, rDNA guidelines, regulatory requirements for drugs and biologicals GLP and GMP.

UNIT - 3

L-9, T-3

INTELLECTUAL PROPERTY RIGHTS: Intellectual property rights and protection, patents and methods of application of patents, trade secrets, copyrights, trademarks, legal implications, farmer's rights and plant breeder's rights; International and national conventions on biotechnology and related areas; WTO guidelines.

UNIT - 4

L-9, T-3

SAFETY, RESPONSIBILITIES AND RIGHTS: Assessment of safety and risk; Risk benefit analysis and reducing risk; The three mile island and case studies; Collegiality and loyalty; Respect for authority; Collective bargaining; Confidentiality; Conflicts of interest; Occupational crime; Professional rights and employee rights.

UNIT - 5

L-9, T-3

GLOBAL ISSUES: Multinational corporations; Environmental ethics; Computer ethics; Weapons development and bioterrorisms; Engineers as managers; Consulting engineers; Engineers as expert witnesses and advisors; Moral leadership; Sample code of ethics.

TEXT BOOKS:

1. M. Martin and R. Schinzinger, "Ethics in Engineering", McGraw Hill, New York 1996.
2. M. Govindarajan, S. Natarajan and V.S.S. Kumar, "Engineering Ethics", Prentice Hall of India, New Delhi, 2004.

REFERENCE BOOKS:

1. A. Sasson, "Biotechnologies and Development", UNESCO Publications, 1988.
2. A. Sasson, "Biotechnologies in developing countries present and future", UNESCO publishers, 1993.
3. E. G. Seebauer and R. L. Barry, "Fundamentals of Ethics for Scientists and Engineers", Oxford University Press, Oxford, 2001.

ACTIVITIES:

- *Open house debate on patenting and environmental issues.*
- *Plenary session on ethical and moral implications of intellectual properties.*
- *Mock session on drafting and defending a patent.*
- *Organize guest lectures on BT cotton and brinjal.*