

PG MICROBIOLOGY
PCMBM20 : BIOETHICS AND BIOSAFETY

Year 2020	Course Code	Title Of The Course	Course Type	Course Category	H/W	Credits	Marks
SEM: IV	PCMBM20	Bioethics and Biosafety	Theory	Core	6	4	100

Course Objective: To provide the learners knowledge about biosafety concerns at the level of individuals, institution, society, region, country and the world.

Course Outcomes (CO):

At the end of the course, the learners will be able to;

CO1: Outline the principles of bioethics and explain the biosafety concerns with safeguard measures.

CO2: Compile the BSA statement for the industrial production of pharmaceuticals.

CO3: Adapt the WHO quality standards in food process technology.

CO4: Discuss on the global scenario of patenting.

CO5: Comprehend the forms of patents, patentability and process of patenting.

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	H	H	M	M	M	H
CO2	H	H	M	L	L	H
CO3	H	M	L	H	M	H
CO4	H	M	L	H	M	H
CO5	H	H	M	M	H	H

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	H	H	H	L	H	H
CO2	H	H	H	M	L	H
CO3	H	H	H	L	M	H
CO4	H	M	H	L	M	H
CO5	H	H	H	L	H	H

H – HIGH (3)

M – MODERATE (2)

L – LOW (1)

COURSE SYLLABUS

UNIT-I : Principles of Bioethics. (15 hours)

- 1.1 Definition- Bioethics. (K1,K2)
- 1.2 Legality, morality and ethics- An introduction (K1,K2)
- 1.3 Introduction to the principles of Bioethics. . (K1,K2)
- 1.4 Principles of autonomy. . (K1,K2)
- 1.5 Human rights. . (K1,K2)
- 1.6 Beneficence and privacy justice equality. . (K1,K2)

UNIT-II : Biosafety concerns. (15 hours)

- 2.1 Introduction to Biosafety. . (K1,K2)
- 2.2 Concept and issues of Biosafety. . (K1,K2)
- 2.3 Rational Vs subjective perceptions of risks and benefits. . (K1,K2)
- 2.4 Relationship between risk hazard, exposure, and safe guard. . (K1,K2)
- 2.5 Biosafety concerns at the level of individuals, institutions, society, region, country and the world. . (K1,K2,K3)
- 2.6 Lab associated infections. . (K1,K2,K4)

UNIT-III: Statement of Ethical practice (15 hours)

- 3.1 Introduction to BSA. . (K1,K2)
- 3.2 History of BSA . . (K1,K2)
- 3.3 British Sociological Association (BSA) statement of ethical practices of biotechnology in the production of pharmaceutical products. . (K1,K2)
- 3.4 BSA statement ethical practices of biotechnology in the production of drugs. . (K1,K2,K3)
- 3.5 BSA statement ethical practices of biotechnology in the production vaccines . (K1,K2,K3)
- 3.6 BSA statement ethical practices of biotechnology in the production biomolecules. (K1,K2,K3)

UNIT-IV: WHO quality standards. (15 hours)

- 4.1 Introduction to WHO and its functions. (K1,K2)
- 4.2 WHO standards – Quality control. (K1,K2,K3)
- 4.3 Quality control in food process technology. (K1,K2,K3,K4,K5)
- 4.4 Quality control in dairy product technology. (K1,K2,K3,K4,K5)

4.5 Quality control for potable water. (K1,K2,K3,K4,K5)

4.6 Quality control measures in pharmaceutical industries. (K1,K2,K3,K4,K5)

UNIT-V : IPR and Patenting. (15 hours)

5.1 Introduction to IPR and Patenting. (K1,K2)

5.2 GATT and IPR, forms of IPR, IPR in India, WTO Act. (K1,K2,K3,K4,K5)

5.3 Convention on Biodiversity (CBD), Patent Co-operation Treaty (PCT).
(K1,K2,K3,K4,K5)

5.4 Forms of patents and patentability, process of Patenting. (K1,K2,K3,K4,K5)

5.5 Indian and international agencies involved in IPR & patenting. (K1,K2,K3,K4,K5)

5.6 Global scenario of patents and India's position, patenting of biological material, GLP, GMP. (K1,K2,K3,K4,K5)

TEXT BOOKS:

1. Frederic H. Erbisch, Karim M. Maredia (2004). Intellectual Property Rights in Agricultural Biotechnology, CABI Publisher.
2. John Bryant (2002) Bioethics for Scientists. John Wiley and Sons Publisher.

REFERENCES BOOKS:

1. Mittal D.P. (1999). Indian Patents Law. Taxmann Allied Services (p) Ltd.
2. Christian Lenk, Nils Hoppe, Roberto Andorno (2007). Ethics and Law of Intellectual Property: Current Problems in Politics, Science and Technology, Ashgate Publisher (p) Ltd.
3. Felix Thiele, Richard E. Ashcroft (2005). Bioethics in a Small World. Springer.

OER:

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