

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:

DIGITAL LIBRARIES:

1. <http://www.loc.gov/>
2. <http://library.clark.edu/>
3. <http://www.dli.ernet.in/>
4. <http://www.loc.gov/education/>

PIMBE20: IEC-V: ENTREPRENEURSHIP AND MANAGEMENT IN MICROBIAL TECHNOLOGY

Year 2020	Course Code	Title Of The Course	Course Type	Course Category	H/ W	Credits	Marks
SEM: III	PIMBE20	Entrepreneurship and Management in Microbial Technology	Theory	Independent elective	-	2	100

Course Objective: To provide an understanding on the concepts of entrepreneurship such as Planning, decision making, leadership, organizations and authority and to provide idea on the basic requirements for establishing a bio-based start-up programme.

Course Outcomes (CO):

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

CO1: Acquaint basic concepts of management such as planning, decision making, leadership, organization and authority.

CO2: Compile the motivational theories.

CO3: Explain the concepts of centralization and decentralization.

CO4: Discuss on IPR and Bioethics with an understanding of government policies.

CO5: Attain skill to manage start up and run an organization.

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 : Understanding management and administration.

- 1.1 Understanding management and administration. (K1,K2)
- 1.2 Management: Nature and scope. (K1,K2)
- 1.3 Management: functional aspects/areas. (K1,K2)
- 1.1 Evolution of management thought: early, contemporary and modern. (K1,K2)
- 1.2 Roles of Management. (K1,K2)
- 1.3 Levels of managements. (K1,K2)

UNIT-II: Major components of management skills.

- 2.1 Major component of management skills. (K1,K2,K3)
- 2.2 Planning: nature, purpose and importance. (K1,K2,K3)
- 2.3 Types of plans. (K1,K2,K3,K4,K5,K6)
- 2.4 Steps in planning & planning premises. (K1,K2,K3,K4,K5,K6)
- 2.5 Hierarchy of plans. (K1,K2,K3,K4,K5,K6)
- 2.6 Components of planning, Decision making. (K1,K2,K3,K4,K5,K6)

UNIT- III : Motivational theories

- 3.1 Leadership Meaning and nature of directing. (K1,K2,K3)
- 3.2 Understanding, Supervision, motivation . (K1,K2,K3)
- 3.3 Leadership styles, Motivation Theories (Abraham Maslo, Herzberg and Victor Hvrom's).
(K1,K2)
- 3.4 Communication – Meaning and importance. (K1,K2,K3)
- 3.5 Meaning and steps in controlling – Essentials of a control system. (K1,K2,K3)
- 3.6 Methods of establishing control (in brief). (K1, K2,K3)

UNIT-IV: Centralization Vs Decentralization

- 4.1 Centralization Vs Decentralization of authority and responsibility. (K1,K2)
- 4.2 Nature and importance of staffing–Process of Recruitment and Selection. (K1,K2,K3)
- 4.3 Organisation: nature and purpose. (K1,K2,K3)
- 4.4 Principles of organization. (K1,K2,K3)
- 4.5 Types of organization. (K1,K2,K3)
- 4.6 Departmental Committees. (K1,K2,K3,K4,K5,K6)

UNIT-V: Structure of biobased technology company.

- 5.1 Structure of a Bio based technology Company. (K1,K2,K3)
- 5.2 Start-up of Bio based technology Company. (K1,K2,K3,K4,K5,K6)
- 5.3 New Product Development. (K1,K2,K3,K4,K5,K6)
- 5.4 Market Research. (K1,K2,K3,K4,K5,K6)
- 5.5 Capital and source investors. (K1,K2,K3,K4,K5, K6)
- 5.6 Sales & Marketing Principles. (K1,K2,K3, K4, K5)

TEXT BOOKS:

- 1. Naidu, NVR. (2013) Management and Entrepreneurship . 1st edn. I. K. International Pvt Ltd
- 2. Tripathi, PC., Reddy, PN. (2008) Principles of Management — Tata McGraw Hill,

REFERENCE BOOKS:

- 1. Desai V. (2004) .Dynamics of Entrepreneurial Development & Management– Vasant Desai – Himalaya Publishing House
- 2. Charantimath , PM. (2006) Entrepreneurship Development Pearson Education – 2006
- 3. Thomson Robbins, S. (2003) Entrepreneurship Development– 17th Edition - Pearson Education/PHI

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