

Mewar University, Chittorgarh
Scheme for M.Sc. Environmental Science (CBCS)
2021-22

M.Sc. - I SEMESTER

S.No.	Type of Course	Paper Code	COURSE NAME	Credits	End Term Exam	Teacher Assessment	Total Marks
1	Core Course 1	M1EVS-CT01	Basic Concepts of Ecology and Environment	4	60	40	100
2	Core Course 2	M1EVS-CT02	Earth Processes and Natural Cycles	4	60	40	100
3	Core Course 3	M1EVS-CT03	Natural Resources and Their Conservation	4	60	40	100
4	Core Course 4	M1EVS-CT04	Environmental Pollution and Monitoring	4	60	40	100
5	Core Course Practical 1	M1EVS-CP01	Core Practical-I	4	100		100
6	Core Course Practical 2	M1EVS-CP02	Core Practical-II	4	100		100
Total				24			600

M.Sc. - II SEMESTER

S.No.	Type of Course	Paper Code	COURSE NAME	Credits	End Term Exam	Teacher Assessment	Total Marks
1	Core Course 5	M2EVS-CT05	Biodiversity Conservation	4	60	40	100
2	Core Course 6	M2EVS-CT06	Environmental Impact Assessment	4	60	40	100
3	Core Course 7	M2EVS-CT07	Environmental and Occupational Health	4	60	40	100
4	Core Course 8	M2EVS-CT08	Instrumentation and Environmental Analysis	4	60	40	100
5	Core Course Practical 3	M2EVS-CP03	Core Practical-I	4	100		100
6	Core Course Practical 4	M2EVS-CP04	Core Practical-II	4	100		100
7	Skill Course 1	M2EVS-SEC01	Any one from the given list	2	30	20	50
Total				26			650

M.Sc. - III SEMESTER

S.No.	Type of Course	Paper Code	COURSE NAME	Credits	End Term Exam	Teacher Assessment	Total Marks
1	Core Course 9	M3EVS-CT09	Environmental Engineering and Waste management	4	60	40	100
2	Core Course 10	M3EVS-CT10	Environmental Laws and Ethics	4	60	40	100
3	Discipline Specific Elective 1	M3EVS-ET01	Any one from the given list	4	60	40	100
4	Discipline Specific Elective 2	M3EVS-ET02	Any one from the given list	4	60	40	100
5	Core Course Practical 5	M3EVS-CP04	Core Practical-5	4	100		100
6	Discipline Specific Elective Practical 1	M3EVS-EP01	DSE Practical-1	4	100		100
Total				24			600

M.Sc. - IV SEMESTER (A)

S.No.	Type of Course	Paper Code	COURSE NAME	Credits	Teacher Assessment	Project/ Dissertation Report	Presentation & Viva-Voce	Total Marks
1	Training	M4EVS-PJ01	Major Research Project	26	200	250	200	650

M.Sc. - IV SEMESTER (B)

S.No.	Type of Course	Paper Code	COURSE NAME	Credits	End Term Exam	Teacher Assessment	Total Marks
1	Minor Project	M4EVS-PJ02	Minor Research Project	14	200	150	350
2	Discipline Specific Elective 3	M4EVS-ET03	Any one from the given list	4	60	40	100
3	Discipline Specific Elective 4	M4EVS-ET04	Any one from the given list	4	60	40	100
4	Discipline Specific Elective Practical 2	M3EVS-EP02	DSE Practical-2	4	100		100
Total				26			650



First Semester

MEWAR UNIVERSITY CHITTORGARH (RAJASTHAN)
Scheme of Two Year MTech: Environmental Engineering

Course Code	Course Title	Contact Hours Per Week		Credit Hours	Internal Assessment/Examination		External Examination /Viva-Voce	Total Marks
		L	P		Assignments /LabRecord	Teachers Evaluation		
EVE-611	Environmental Chemistry and Microbiology	4	-	4	30	10	60	100
EVE-612	Air and Noise Pollution	4	-	4	30	10	60	100
EVE-613	Water Treatment Processes	4	-	4	30	10	60	100
EVE-614	Sustainable Waste Management	4	-	4	30	10	60	100
EVE-615/616/617	Elective I	4	-	4	30	10	60	100
EVE-618	Environmental Engineering Lab-I		2	2	10	10	30	50
Total Semester Credits=				22	Total Semester Marks=		550	

Second Semester

Course Code	Course Title	Contact Hours Per Week		Credit Hours	Internal Assessment/Examination		External Examination /Viva-Voce	Total Marks
		L	P		Assignments /LabRecord	Teachers Evaluation		
EVE-621	Solid and Hazardous Waste Management	4	-	4	30	10	60	100
EVE-622	Industrial Waste Management	4	-	4	30	10	60	100
EVE-623	Environmental Impact Assessment	4	-	4	30	10	60	100
EVE-624	Life Cycle Analysis and Design for Environment	4	-	4	30	10	60	100
EVE-625/626/627	Elective II	4	-	4	30	10	60	100
EVE-628	Environmental Engineering Lab-II		2	2	10	10	30	50
Total Semester Credits=				22	Total Semester Marks=		550	



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Third Semester

Course Code	Course Title	Contact Hours Per Week		Credit Hours	Internal Assessment/Examination		External Examination /Viva-Voce	Total Marks	
		L	P		Assignments /LabRecord	Teachers Evaluation			
EVE-631	Renewable Energy Sources	4	-	4	30	10	60	100	
EVE-632	Application of Remote Sensing in Environmental Engineering	4	-	4	30	10	60	100	
EVE-633	Seminar		6	6	-	-	150	150	
EVE-634	Minor Project		8	8	-	-	200	200	
				Total Semester Credits=	22			Total Semester Marks=	550

Fourth Semester

Course Code	Course Title	Contact Hours Per Week		Credit Hours	Internal Assessment/Examination		External Examination /Viva-Voce	Total Marks	
		L	P		Report	Teachers Evaluation			
EVE-641	Dissertation	-	16	16	50	-	350	400	
				Total Semester Credits=	16			Total Semester Marks=	400



Course Objective

The objective of this paper is to familiarize the participants with concepts, and practices in corporate governance and an understanding of values and ethics for application in organizational life

Teaching Methodology

A mix of conceptual lectures, case studies, and discussions

Course Outline

Content

UNIT 1:

□ Issues in and need of corporate governance; codes; code of corporate practices; social responsibility of corporates; corporate social reporting; corporate governance and the role of Board of Directors; corporate governance system worldwide; corporate disclosure and investor protection in India

UNIT 2:

□ Indian value system and values; teaching from scriptures and traditions – Bhagvad Gita, Ramayana, Mahabharata, Upanishadas, Vedas, Bible and Quran

UNIT 3:

□ Ethical issues in capitalism and market systems; ethics and social responsibility; ethics and marketing; ethics in finance; ethics and human resource management; ethics and information technology; ethical theories and approaches; intellectual property rights like designs, patents, trade marks and copyrights.

UNIT 4:

□ Global industrial competition; information technology; competitive strategy; benchmarking; total quality management; brand building;

UNIT 5:

promotional strategies; corporate restructuring; mergers and acquisitions; supply chain management; horizontal organizations; diversifications; the Indian scene

Compulsory Text

S K Bhatia, *Business Ethics and Managerial Values* (New Delhi: Deep and Deep Publishers, 2000)

Recommended Text

- U C Mathur, *Corporate Governance and Business Ethics* (New Delhi: McMillan)
- S Slyer, *Managing for Value* (New Delhi: New Age Publishers, 2002)



MBA-N233 Entrepreneurship Development

Course Objective

The objective of this paper is to familiarize the participants with concepts, techniques and skills of entrepreneurship and enable them to become successful entrepreneurs

Teaching Methodology

A mix of conceptual lectures, case studies, and discussions

Course Outline

Content

UNIT 1:

- Entrepreneurship; definition of entrepreneur; internal and external factors; functions of an entrepreneur; entrepreneurial motivation and barriers; classification of entrepreneurship
- Theory of entrepreneurship; concept of entrepreneurship; development of entrepreneurship; culture; stages in the entrepreneurial process

UNIT 2:

- Family and non-family entrepreneurs; role of professionals; professionalism versus family entrepreneurs; role of women entrepreneurs; successful entrepreneurs

UNIT 3:

- Feasibility analysis; economic, marketing, financial and technical feasibility; project planning; evaluation, monitoring and control of projects; segmentation
- Creativity and the entrepreneurial plan; idea generation, screening and project identification; creative performance; creative problem solving; heuristics, brainstorming, synectics, value analysis and innovation

UNIT 4:

- Institutional support for new ventures; supporting organizations; incentives and facilities; financial institutions; small scale industries; government policies for SSIs
- Venture capital; nature and overview; venture capital process; locating venture capitalists

UNIT 5:

- International entrepreneurship opportunities; the nature of international entrepreneurship; importance of international issues to the firm; international versus domestic entrepreneurship; stages of economic development

Compulsory Text

M J Dollinger, *Entrepreneurship* (New Delhi: Prentice-Hall, 1999)

Recommended Text

- Nina Jacob, *Creativity in Organisations*(New Delhi: Wheeler, 1998)
- Holt, *Entrepreneurship: New Venture Creation* (New Delhi: Prentice-Hall. 1998)



Course Objectives: To acquire knowledge and understanding of Industrial Law.

UNIT 1- Law Related to Specific Industry:

The Factory Act, 1948

Interpretation, Objective and scope of the act, approval, licensing and registration of factories, the inspecting staff, health, safety, provision relating to hazardous process, welfare, working hours of adults, employment of young persons, additional provision regulating employment of women in a factory, annual leave with wages.

UNIT 2- Law Related to Wages:

The Minimum Wages Act, 1948: Important Definition, fixation of minimum wages, objectives and procedure, wages for overtime.

The Payment of Bonus Act, 1965: Object, Scope and application of the Act, definition, establishment to include department, undertaking and branches, eligibility for Bonus, Recovery of the Bonus Due from an Employer, Time Limit for Payment of Bonus.

UNIT 3- Law Related to Social Securities:

The Workman Compensation Act, 1923: Definition, employer's liability for compensation, distribution of compensation, notice and claim.

The Payment of Gratuity Act, 1972: Introduction, definition, Determination of Gratuity, Protection of Gratuity, Nomination, deduction and forfeiture of Gratuity, recovery of Gratuity.

The Employee's Provident Fund Act, 1952: Definition, Employees Provident Fund Scheme, contribution and matters provided for in the scheme. Mode of recovery of moneys due from employers.

UNIT 4- Law Related to equality and empowerment of Women:

The Maternity Benefit Act, 1961: Definition, employment of or work by women prohibited during certain periods, right to payment of maternity benefits, notice of claim for maternity benefit, penalty for contravention of act by employer.

The Equal Remuneration Act, 1976: Object and Scope, Definition, duty of employer to pay equal remuneration to men and women workers for same work or work of a similar nature, authorities for hearing and deciding claims and complaints, maintenance of registers, penalty.

UNIT 5- Law Related to Industrial Relation:

The Trade Union Act, 1926: Definition, Registration of Trade Unions, Rights and Liability of Registered Trade Unions, Regulations, Penalties and Procedures.



The Industrial Dispute Act, 1947: Definition, Authority Under This Act, References of Disputes to Boards, Courts or Tribunals, Procedures, Powers and Duties of Authorities, Strike and Lock-Outs, Lay-off and Retrenchment.

References:

- Y S.S. Gulshan & G.K. Kapoor: Economic, Labour and Industrial Law; Sultan Chand & Sons, 23, Daryaganj, New Delhi-2.
- Y N.D. Kapoor: Handbook of Industrial Law; Sultan Chand & Sons, 23, Daryaganj, New Delhi-2.
- Y P.L. Malik: Industrial Law; Eastern Book Company, 34, Lalbagh, Lucknow.
- Y P.K. Padhi: Labour and Industrial Laws; Prentice Hall of India Pvt. Ltd, New Delhi



EXT-113 Human Value and Ethics 1(1+0)

Theory

Values and Ethics-An Introduction.Goal and Mission of Life.Vision of Life.Principles and Philosophy.Self Exploration.Self Awareness.Self Satisfaction.Decision Making.Motivation.Sensitivity.Success.Selfless Service.Case Study of Ethical Lives.Positive Spirit.Body, Mind and Soul.Attachment and Detachment.Spirituality Quotient.Examination.

Reference/ Suggested Readings:

- Narayanan, P., Intellectual Property Law, Eastern Law House (2007) 3rded.
- Tripathi A.N., Human Values, New Age International (P) Ltd (2008).
- Robbins, S.P., Organizational Behavior,
- Prentice Hall of India (2007)8thed.
- Journal of Intellectual Property Rights, published by National Institute of Science



BP505T.PHARMACEUTICAL JURISPRUDENCE(Theory)

Scope: This course is designed to impart basic knowledge on important legislations related to the profession of pharmacy in India.

45 Hours

Objectives: Upon completion of the course, the students shall be able to understand:

1. The Pharmaceutical legislations and their implications in the development and marketing of pharmaceuticals.
2. Various Indian pharmaceutical Acts and Laws
3. The regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals
4. The code of ethics during the pharmaceutical practice

Course Content:

UNIT-I

10 Hours

Drugs and Cosmetics Act, 1940 and its rules 1945:

Objectives, Definitions, Legal definitions of schedule to the Act and Rules

Import of drugs – Classes of drugs and cosmetics prohibited from import, Import under license or permit. Offences and penalties.

Manufacture of drugs – Prohibition of manufacture and sale of certain drugs,

Conditions for grant of license and conditions of license for manufacture of drugs, Manufacture of drugs for test, examination and analysis, manufacture of new drug, loan license and repacking license.

UNIT-II

10 Hours

Drugs and Cosmetics Act, 1940 and its rules 1945.

Detailed study of Schedule G, H, M, N, P, T, U, V, X, Y, Part XII B, Sch F & DMR (OA) Sale of Drugs –

Wholesale, Retail sale and Restricted license. Offences and penalties

Labeling & Packing of drugs- General labeling requirements and specimen labels for drugs and cosmetics, List of permitted colors. Offences and penalties.

Administration of the Act and Rules – Drugs Technical Advisory Board, Central drugs Laboratory, Drugs Consultative Committee, Government drug analysts, Licensing authorities, controlling authorities, Drugs Inspectors



UNIT-III

10Hours

- **Pharmacy Act-1948:** Objectives, Definitions, Pharmacy Council of India; its constitution and functions, Education Regulations, State and Joint state pharmacy councils; constitution and functions, Registration of Pharmacists, Offences and Penalties

Penalties

- **Medicinal and Toilet Preparation Act -1955:** Objectives, Definitions, Licensing, Manufacture In bond and Outside bond, Export of alcoholic preparations, Manufacture of Ayurvedic, Homeopathic, Patent & Proprietary Preparations. Offences and Penalties.
- **Narcotic Drugs and Psychotropic Substances Act-1985 and Rules:** Objectives, Definitions, Authorities and Officers, Constitution and Function of narcotic & Psychotropic Consultative Committee, National Fund for Controlling the Drug Abuse, Prohibition, Control and Regulation, opium poppy cultivation and production of poppy straw, manufacture, sale and export of opium, Offences and Penalties

UNIT-IV

08Hours

- **Study of Salient Features of Drugs and Magic Remedies Act and its rules:** Objectives, Definitions, Prohibition of certain advertisements, Classes of exempted advertisements, Offences and Penalties
- **Prevention of Cruelty to animals Act-1960:** Objectives, Definitions, Institutional Animal Ethics Committee, CPCSEA guidelines for Breeding and Stocking of Animals, Performance of Experiments, Transfer and acquisition of animals for experiment, Records, Power to suspend or revoke registration, Offences and Penalties
- **National Pharmaceutical Pricing Authority:** Drugs Price Control Order (DPCO)-2013. Objectives, Definitions, Sale prices of bulk drugs, Retail price of formulations, Retail price and ceiling price of scheduled formulations, National List of Essential Medicines (NLEM)

UNIT-V

07Hours

- **Pharmaceutical Legislations –** A brief review, Introduction, Study of drugs enquiry committee, Health survey and development committee, Health committee and Mudaliar committee



- **Code of Pharmaceutical ethics** Definition, Pharmacist in relation to his job, trade, medical profession and his profession, Pharmacist's oath
- **Medical Termination of Pregnancy Act**
- **Right to Information Act**
- **Introduction to Intellectual Property Rights (IPR)**

Recommended books: (Latest Edition)

1. Forensic Pharmacy by B. Suresh
2. Textbook of Forensic Pharmacy by B. M. Mithal
3. Handbook of drug law - by M. L. Mehra
4. A textbook of Forensic Pharmacy by N. K. Jain
5. Drugs and Cosmetics Act/Rules by Govt. of India publications.
6. Medicinal and Toilet preparations act 1955 by Govt. of India publications.
7. Narcotic drugs and psychotropic substances act by Govt. of India publications
8. Drugs and Magic Remedies act by Govt. of India publication
9. Bare Acts of the said laws published by Government. Reference books (Theory)

