


### Theory syllabus

Scheme A-1 (For course of science Discipline having Major Practicum Component)

		Part A - Introduction	
PROGRAMME : PG Diploma	Class: M.Sc	I Year/ II Semester	Session- 2025-26
		Subject- <del>CHM</del> <b>Environmental Chemistry</b>	
1	Course Code	CHM (Constitutional, Human and Moral Values)- Elective-III	
2	Course Title	<b>Responsible Innovation: Ethics, Law, and Constitution.</b>	
3	Course type	VAC (Value Added Courses)	
4	Pre- requisite (if any)	To study this course a student must have had One Year PG diploma certificate or Four year (Hon's/Hon's with research degree course)	
5	Course Learning Outcomes (CLO)	<ul style="list-style-type: none"> <li>Understand the concept and scope of responsible innovation.</li> <li>know ethical dilemmas in scientific and technological advancement.</li> <li>Understand legal and constitutional principles to innovation-related issues.</li> <li>To know policies and regulations governing innovation, IP, and public welfare.</li> <li>Understand strategies for inclusive, sustainable, and ethically aligned innovation</li> </ul>	
6	Credit Value	02	
7	Total Marks	Max. Marks: 60-40	Min. Passing Marks: 40



**Part B- Content of the Course**

Total No. of Lectures- Tutorials- Practical (in hour per week) :2 hour per week

Unit	Topics	No. of Lectures
I	<b>Foundations of Responsible Innovation</b> <ul style="list-style-type: none"> <li>• Concept of innovation: Types and impacts</li> <li>• What is "responsible" innovation? Frameworks and models</li> <li>• Stakeholder engagement and inclusive innovation</li> <li>• Anticipatory governance and sustainability</li> </ul>	06
II	<b>Ethics and Innovation</b> <ul style="list-style-type: none"> <li>• Ethical theories and decision-making models</li> <li>• Ethics in AI, biotechnology, data science, energy, and environment</li> <li>• Risk, uncertainty, and precaution in innovation</li> <li>• Research ethics: Integrity, plagiarism, and accountability</li> <li>• Case studies: Ethical issues in emerging technologies</li> </ul>	06
III	<b>Legal Frameworks and Innovation Governance</b> <ul style="list-style-type: none"> <li>• Intellectual Property Rights (IPR): Patents, copyrights, and trademarks</li> <li>• Legal regulation of emerging technologies</li> <li>• Innovation policies in India (Start-up India, Digital India, National Innovation Council)</li> <li>• Corporate responsibility, technology law, and liability</li> <li>• Case laws involving innovation and public interest</li> </ul>	06
IV	<b>Constitution, Rights, and Innovation</b> <ul style="list-style-type: none"> <li>• Constitutional values and innovation: Justice, equality, liberty</li> <li>• Fundamental Rights and Duties in innovation context</li> <li>• Right to privacy, right to health, environmental rights, and data protection</li> <li>• Role of the judiciary in regulating technology</li> <li>• Constitutional morality and public interest litigation (PIL)</li> </ul>	06
V	<b>Global and Indian Perspectives on Responsible Innovation</b> <ul style="list-style-type: none"> <li>• UNESCO and EU frameworks on Responsible Research and Innovation (RRI)</li> <li>• Indian perspective on ethics and social justice in technology</li> <li>• Innovation and marginalized communities: Bridging the digital divide</li> <li>• Policy recommendations and ethical foresight in Indian context</li> <li>• National Education Policy (NEP) 2020 and responsible research education</li> </ul>	06



Part C- Learning Resources

Text Books, Reference Books, Other resources

Suggested Reading	<ol style="list-style-type: none"><li>1. Stilgoe, J., Owen, R., &amp; Macnaghten, P. – Developing a Framework for Responsible Innovation</li><li>2. Gaur, R.R., Sangal, R., &amp; Bagaria, G.P. – Human Values and Professional Ethics</li><li>3. Basu, D.D. – Introduction to the Constitution of India</li><li>4. Deborah G. Johnson – Ethics in Technology</li><li>5. World Economic Forum – Ethics by Design: An Organizational Approach</li><li>6. Government of India – National Innovation and Start-up Policy (NISIP)</li><li>7. Relevant articles from journals like Journal of Responsible Innovation, Science and Public Policy</li><li>8. Responsible Innovation: Managing the Responsible Emergence of Science and Innovation in Society" Edited by Richard Owen, John Bessant, and Maggie Heintz</li><li>9. The Ethics of Innovation: Navigating the Gray Area" By G. Pascal Zachary and Sarah J. Evanega</li></ol>
Suggested equivalent online courses	<ol style="list-style-type: none"><li>1. Data Ethics, AI and Responsible Innovation by: University of Edinburgh via Coursera</li><li>2. Responsible Research and Innovation (RRI): An Online Introduction by: University of Cambridge</li><li>3. Responsible Innovation for Research by: University College London (UCL)</li><li>4. Social Research Ethics by: SWAYAM (India)</li><li>5. Responsible Innovation in Industry by: TU Delft</li></ol>

*[Handwritten signatures and initials]*