Master of Science

(M.Sc.)

Environmental Science & Technology

COURSE STRUCTURE

School of Engineering & Technology
Navrachana University
Vadodara

Academic Advisory Board (Environmental Science and Technology)

1. **Prof. Abir Mullick**, Provost, Navrachana University, Vadodara

2. **Prof. C. N. Murthy**, Member (External), The Maharaja Sayajirao University of Baroda, Vadodara

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5. **Dr. K. S. Kumar**, Member (Internal), Navrachana University, Vadodara

6. **Ms. Neha Singh**, Member (Internal), Navrachana University, Vadodara

1st Year

Semester – I — Total Credits = 22

Objectives: *The student can recognize and recall relevant knowledge from*

- *ecological and physical sciences and their importance in environment*
- *chemistry associated with environment*
- *toxicology and its nature in ecosystem*
- *environmental health and safety*
- *socio-economic and political aspects of environmental policies and institutions*
- *computer applications in environmental science*

Sr. No.	Course Code	Course Title	*L*	*T*	*P*	C
Theory Courses						
1.	EN 101	Ecology & Environment	*3*	*0*	*0*	**3**
2.	EN 102	Physical Environment	*3*	*0*	*0*	**3**
3.	EN 103	Energy & Environment	*3*	*0*	*0*	**3**
4.	EN 104	Environmental Analytical Chemistry	*3*	*0*	*0*	**3**
5.	EN 105	Ecotoxicology and Occupational Safety	*3*	*0*	*0*	**3**
Elective Courses						
1.	IT 125	Computer Applications in Sciences	*2*	*0*	*1*	**3**
2.	EN 106	Socio-economic Dimensions of Environmental Management	*3*	*0*	*0*	**3**
Practical Courses						
1.	EN 107	EN Laboratory – I	*0*	*0*	*2*	**2**
2.	EN 108	EN Laboratory – II	*0*	*0*	*2*	**2**

Semester – II — Total Credits = 24

Objectives: *The student can understand the core concepts of*

- *analytical instrumentation and its application in developing analytical methods to determine pollutants*
- *pollution and behavior of pollutants*
- *solid waste management across different segments*
- *sustainability by restoration and rehabilitation*
- *to resolve the environmental challenges with effective skill and responsibility*
- *fundamentals of management*
- *research approach*

Sr. No.	Course Code	Course Title	*L*	*T*	*P*	C
Theory Courses						
1.	EN 110	Analytical Instrumentation	*3*	*0*	*0*	**3**
2.	EN 111	Water Pollution & Control Technology	*3*	*0*	*0*	**3**
3.	EN 112	Air and Noise: Pollution & Its control Technology	*3*	*0*	*0*	**3**
4.	EN 113	Soil Pollution & Its control technology	*3*	*0*	*0*	**3**
5.	EN 114	Solid & Hazardous Waste Control Technology	*3*	*0*	*0*	**3**
Elective Courses						
1.	MG 225	Management Basics	*3*	*0*	*0*	**3**
2.	PS 301	Research Methodology	*2*	*0*	*1*	**3**
Practical Courses						
1.	EN 115	EN Laboratory – III (Based on EN109 & EN110)	*0*	*0*	*2*	**2**
2.	EN 116	EN Laboratory – IV (Based on EN111)	*0*	*0*	*2*	**2**
Seminar						
1.	EN 117	Environmental Colloquium	0	1	1	**2**

2nd Year

Semester – III **Total Credits: 24**

Objectives: *The student be capable of using technological concepts:*

- *of industrial pollution and their behavior*
- *to analyze remote sensed data for solving geospatial problems*
- *sustainability by restoration and rehabilitation*
- *to have effective skill to make informed and responsible decision that lead to resolve the environmental challenges*

Sr. No.	Course Code	Course Title	*L*	*T*	*P*	C
Theory Courses						
1.	EN 201	Industrial Water & Wastewater Treatment Technology	*3*	*0*	*0*	**3**
2.	EN 202	Environmental Remote Sensing and GIS	*3*	*0*	*0*	**3**
3.	EN 203	Cleaner Technologies	*3*	*0*	*0*	**3**
4.	EN 204	Statistical Data Analysis & Environmental Modeling	*3*	*0*	*0*	**3**
5.	EN 205	Environmental Legislation	*3*	*0*	*0*	**3**
Elective Courses						
1.	EN 206	Environmental Hydraulics & Hydrology	*3*	*0*	*0*	**3**
2.	EN 207	Industrial & Environmental Psychology	*3*	*0*	*0*	**3**
Practical Courses						
1.	EN 208	EN Laboratory – V	*0*	*0*	*2*	**2**
2.	EN 209	EN Laboratory – VI	*0*	*0*	*2*	**2**
Workshops						
1.	EN 210	Environmental Workshops	0	1	1	**2**

Semester – IV **Total Credits: 22**

Objectives: *The student be able to:*

- *distinguish between parts, relate them each other to formulize overall structure and purpose*
- *make judgment and justify decisions related to environmental science and technology*
- *put elements together to form whole function and create a new product or point of view*
- *acquire the skills for identifying and solving environmental problems via the conducting of research project*

Sr. No.	Course Code	Course Title	*L*	*T*	*P*	C
Theory Courses						
1.	EN 211	Watershed Management	*3*	*0*	*0*	**3**
2.	EN 212	Environmental Nanotechnology	*3*	*0*	*0*	**3**
3.	EN 213	Environmental Safety & Management	*3*	*0*	*0*	**3**
4.	EN 214	Natural Hazards & Disaster Management	*3*	*0*	*0*	**3**
5.	EN 215	Environmental Impact Assessment & Auditing	*3*	*0*	*0*	**3**
Research Work						
1.	EN 216	Dissertation	*0*	*2*	*4*	**6**
Comprehensive Viva						
1.	EN 217	Comprehensive Viva – voce	*0*	*1*	*0*	**1**

Note: All course codes are tentative