NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

DEPARTMENT OF HUMANITIES

COURSE PLAN – PART I			
Name of the programme and specialization	B.Tech. – Mechanical Engineering		
Course Title	Professional Ethics		
Course Code	HSIR14	No. of Credits	3
Course Code of Pre-requisite subject(s)	None		
Session	July / ~~January~~ 2022	Section (if, applicable)	A
Name of Faculty	Dr. S Dharmalingam	Department	Visiting Faculty -
Official Email	sdharma59@gmail.com	Telephone No.	+91- 9443342066
Name of Course Coordinator(s) (if, applicable)	-		
Official E-mail	-	Telephone No.	-
Course Type (please tick appropriately)	☐ √ Core course	☐	Elective course

Syllabus (approved in BoS)

HSIR14 – Professional Ethics
Course Type: Core
No. of Credits: 3

Course Content :

Unit – 1: Morals, Values and Ethics - Integrity - work Ethic - Service Learning - Civic Virtue - Respect for others - Living peacefully - Caring - Sharing - Honesty - Courage - Valuing time - Co-operation - Commitment - Empathy - Self-Confidence - Character - Spirituality - The role of engineers in modern society - social expectations.

Unit – 2: Sense of 'Engineering Ethics' - Variety of moral issues - types of inquiry - moral dilemmas – moral autonomy - Kohlberg's theory - Gilligan's theory - Consensus and controversy - Models of Professional Roles & Professionalism - theories about right action - Self-interest - customs and religion - uses of ethical theories.

Unit – 3: Engineering as experimentation - engineers as responsible experimenters - Research ethics - Codes of ethics - Industrial Standard - Balanced outlook on law - the challenger case study.

Unit-4: Safety and risk - assessment of safety and risk - Riysis - Risk benefit analysis and reducing risk - Govt. Regulator's approach to risks - the Three mile island and Chernobyl case studies & Bhopal - Threat of Nuclear power, depletion of ozone, greenery effects - Collegiality and loyalty – respect for authority - collective bargaining -

Confidentiality - conflicts of interest - occupation crime - professional rights - employees' rights - Intellectual Property rights (IPR) - discrimination.

Unit – 5: Multinational corporations - Business ethics - Environmental ethics - computer ethics - Role in Technological Development - Weapons development engineers as managers – consulting engineers - engineers as expert witnesses and advisors - Honesty - leadership - sample code of conduct ethics like ASME, ASCE, IEEE, Institution of Engineers (India), Indian Institute of Materials Management Institution of electronics and telecommunication engineers (IETE), India, etc.

Reference Books:

1. Mike Martin and Roland Schinzinger, "Ethics in Engineering", McGraw Hill, New York (2005).
2. Charles E Harris, Michael S Pritchard and Michael J Rabins, "Engineering Ethics – Concepts and Cases", Thompson Learning, (2000).
3. Charles D Fleddermann, "Engineering Ethics", Prentice Hall, New Mexico, (1999).
4. John R Boatright, "Ethics and the Conduct of Business", Pearson Education, (2003)
5. Edmund G Seebauer and Robert L Barry, "Fundamentals of Ethics for Scientists and Engineers", Oxford University Press, (2001)
6. Prof. (Col) P S Bajaj and Dr. Raj Agrawal, "Business Ethics – An Indian Perspective", Biztantra, New Delhi, (2004)
7. Websites

COURSE OUTCOMES:

Upon completion of the course, students will be able to:

- **Understand the core values that shape the ethical behaviour of an engineer**
- **Have awareness on professional ethics and human values.**
- **Know their role in technological development.**

COURSE OBJECTIVES

1. Identify the core values that shape the ethical behavior of an engineer
2. To create an awareness on professional ethics and Human Values
3. To appreciate the rights of others

COURSE PLAN – PART II

COURSE OVERVIEW

Professionals work in a wide variety of settings and across many different industries including business, science, education, art, and public service. Many professions have Codes of Conduct that specify ethical behavior and expectations particular to that field. In addition, professionals must often make ethical judgments in their area of specialty that falls outside their specific Code of Conduct.

Professionals often need to apply moral reasoning to their interactions with co-workers, clients, and the general public. These resources offer insights that apply to a wide range of professionals as they seek to develop standards of ethical behavior in

their careers.

This course aims to give exposure to the students with knowledge in the field of Professional Ethics.

COURSE TEACHING AND LEARNING ACTIVITIES (Add more rows)

S.No.	Week/Contact Hours	Topic	Mode of Delivery
1	29th Aug. – 14th Sep.. 2022 8 contact hours	Introduction / Professional Ethics and Human Values - Course Objectives – An Overview of the Syllabus - Course Modules - Relevance to Engineering Profession **Human Values** **Unit -1:** Morals, Values and Ethics - Integrity - work Ethic - Service Learning - Civic Virtue - Respect for others - Living peacefully - Caring - Sharing - Honesty - Courage - Valuing time - Co-operation - Commitment - Empathy - Self-Confidence - Character - Spirituality - The role of engineers in modern society - social expectations.	Chalk and talk. Power point presentation
2	15th Sep. –05th Oct. 2022 8 contact hours	**ENGINEERING ETHICS** **Unit – 2:** Sense of 'Engineering Ethics' - Variety of moral issues - types of inquiry - moral dilemmas – moral autonomy - Kohlberg's theory - Gilligan's theory - Consensus and controversy - Models of Professional Roles & Professionalism - theories about right action - Self-interest - customs and religion - uses of ethical theories.	Chalk and talk. Power point presentation
3	06th Oct.. – 24th Oct. 2022 8 contact hours	**ENGINEERING AS SOCIAL EXPERIMENTATION** **Unit -3:** Engineering as experimentation - engineers as responsible experimenters - Research ethics - Codes of ethics - Industrial Standards - Balanced outlook on law - the challenger case study.	Chalk and talk. Power point presentation
4	25th Oct.. – 10th Nov. 2022 9 contact hours	**ENGINEER'S RIGHTS AND RESPONSIBILITIES ON SAFETY** **Unit-4:** Safety and risk - assessment of safety and risk - Risk benefit analysis and reducing risk - Govt. Regulator's approach to risks - the three mile island and Chernobyl case studies & Bhopal - Threat of Nuclear power, depletion of	Chalk and talk. Power point presentation

		ozone, greenery effects - Collegiality and loyalty – respect for authority - collective bargaining - Confidentiality - conflicts of interest - occupation crime - professional rights - employees' rights - Intellectual Property rights (IPR) - discrimination.	
5	11th Nov. – 25th Nov. 2022 8 contact hours	**GLOBAL ISSUES** **Unit – 5:** Multinational corporations - Business ethics - Environmental ethics - computer ethics - Role in Technological Development - Weapons development engineers as managers – consulting engineers - engineers as expert witnesses and advisors - Honesty - leadership - sample code of conduct ethics like ASME, ASCE, IEEE, Institution of Engineers (India), Indian Institute of Materials Management Institution of electronics and telecommunication engineers (IETE), India, etc.,. Conclusions Review	Chalk and talk. Power point presentation

COURSE ASSESSMENT METHODS (shall range from 4 to 6**)**

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Assessment – I (Written test)	1st week of Oct. 22	1 hour	20
2	Assignment - I	During regular hours		5
3	Assessment – II (Written test)	1st week of Nov. 22	1 hour	20
4	Assignment – II Seminar presentation by students	During regular hours		5
CPA	Compensation Assessment*	4th week of Nov. 22	1 hour	20
5	Final Assessment *	1st week of Dec. 22	3 hours	50

***mandatory; refer to guidelines on page 4**

1. Exact d**at**e and time for the assessments (Sl. No. 1,3, 5 and CPA) will be informed later.
2. Grading will be based on the clusters (range) of the total marks (all the assessments i.e., Assessment 1 to 4, put together for each student) scored. For grading, Gap theory or Normalized curve method will be used to decide the clusters (range) of the total marks.

COURSE EXIT SURVEY (mention the ways in which the feedback about the course shall be assessed)

Anonymous feedback through questionnaire.
Direct feedback from the students by having face-to-face meeting individually and as the class as a whole.
Feedback from the students during the class committee meetings.

COURSE POLICY (including compensation assessment to be specified**)**

MODE OF CORRESPONDENCE (email/ phone etc)

1. All the correspondence (schedule of classes/ schedule of assessment/ course material/ any other information regarding this course) will be done through the class representative.
2. Queries (if required) may be emailed to me / contact me immediately after the class hours for any clarifications.

COMPENSATION ASSESSMENT

If any student is not able to attend **Assessment-I** / Assessment-II due to genuine reason, he/she is permitted to attend the Compensation Assessment (CPA) with 20% weightage (20 marks). At any case, CPA will not be considered as an improvement test.

ATTENDANCE POLICY (A uniform attendance policy as specified below shall be followed)

- At least 75% attendance in each course is mandatory.
- A maximum of 10% shall be allowed under On Duty (OD) category.
- Students with less than 65% of attendance shall be prevented from writing the final assessment and shall be awarded 'V' grade.

ACADEMIC DISHONESTY & PLAGIARISM

- Possessing a mobile phone, carrying bits of paper, talking to other students, copying from others during an assessment will be treated as punishable dishonesty.
- Zero mark to be awarded for the offenders. For copying from another student, both students get the same penalty of zero mark.
- The departmental disciplinary committee including the course faculty member, PAC chairperson and the HoD, as members shall verify the facts of the malpractice and award the punishment if the student is found guilty. The report shall be submitted to the Academic office.
- The above policy against academic dishonesty shall be applicable for all the programmes.

ADDITIONAL INFORMATION, IF ANY

The students are advised to clarify their doubts can discuss during the lecture. Other than, for out-of-class discussion, the prior permission is required.

FOR APPROVAL

Course Faculty _____ CC- Chairperson _____ HOD _____ 12/04/2022

Guidelines

a) The number of assessments for any theory course shall range from 4 to 6.

b) Every theory course shall have a final assessment on the entire syllabus with at least 30% weightage.

c) One compensation assessment for absentees in assessments (other than final assessment) is mandatory. Only genuine cases of absence shall be considered.

d) The passing minimum shall be as per the regulations.

B.Tech. Admitted in				P.G.
2018	2017	2016	2015	
35% or (Class average/2) whichever is greater.		(Peak/3) or (Class Average/2) whichever is lower		40%

e) Attendance policy and the policy on academic dishonesty & plagiarism by students are uniform for all the courses.

f) Absolute grading policy shall be incorporated if the number of students per course is less than 10.

g) Necessary care shall be taken to ensure that the course plan is reasonable and is objective.