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| **logo University of Management & Technology** School of Engineering Department of Electrical Engineering |
| MS 215 Engineering Ethics |
| **Lecture Schedule** | See time table | **Semester** | Fall 2014 |
| **Pre-requisite** | N/A | **Credit Hours** | 3 |
| **Instructor(s)** | Tabraiz Ahmed Alvi (Sec A, Sec C)Usman Ali ( Sec D) | **Contact** | tabraiz.alvi@umt.edu.pkusman.ali@umt.edu.pk |
| **Office** | Work shop lab main building | **Office Hours** | See office window |
| **Teaching Assistant** | None | **Contact** | N/A |
| **Course Description** | This course is designed to develop engineering ethics in the students. Topics that will be covered are: Introduction to ethical concepts, Ethics and professionalism, Moral reasoning and codes of ethics, Moral frame works, Engineering as social experimentation, Commitment to safety, risk and liability in engineering, Workplace responsibilities and rights, Honesty, Integrity and Reliability, Engineers as employees, Environmental ethics, Global issues, Engineers and technological progress, Responsibility for research integrity, Fair credit in research and publication, Credit and intellectual property in engineering practice, Making a life in engineering and science, Case studies on professional behavior. The course directly contributes to **objectives** b, c, d, and g of the HEC Electrical Engineering Curriculum. |
| **Expected Outcomes** | The course strongly supports expected **outcomes** b, c, d and g of the HEC Electrical Engineering Curriculum. Upon completion of this course, students will:* Be able to identify new possibilities and risks in the engineering projects Have good understanding of wireless communication systems at the physical layer
* Be able to point out the dangers and prevent harm.
* To promote responsible conduct
* To solve ethical dilemmas in engineering
* Be able to explore both micro and macro issues
* Be cautious optimistic in technological development
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| **Textbook(s)** | **Recommended Text:*** Ethics in Engineering, Martin M. W., Martin M. and R. Schinzinger, McGraw-

Hill, (Latest Edition)**Reference:*** Ethics in Engineering Practice and Research, Whitbeck C., Cambridge

 University Press, (Latest Edition)* Engineering Ethics: Concepts and Cases, Harris Jr. C. E., Pritchard M. S. and

 M. J. Rabins, Wadsworth Publishing, (Latest Edition) |
| **Grading Policy** | Final Term: 50% Mid Term: 25% Quizzes, Assignments & presentations: 25%  |

**Tentative Course Schedule**

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| **Lecture** | **Topics** | **Textbook (TB) /****Reference (Ref) Readings** |
| 1 | Introduction | TB Ch 0 |
| 2 - 4 | Scope of Engineering Ethics, Accepting and Sharing Responsibility, Responsible Professionals and Ethical Corporations | TB 1.1 – 1.3 |
| 5 – 6 | Resolving Ethical Dilemmas, Codes of Ethics | TB 2.1 – 2.3 |
| 7 – 9 | Right Ethics and Duty Ethics, Virtue ethics ,Self-Realization and Self Interest | TB 3.2 – 3.4 |
| 10 – 13 | Engineering as Experimentation, Engineers as Responsible Experimenters, Case Study for Engineering as Social Experimentation | TB 4.1 – 4.3 |
| 14 – 15 | Safety and Risk, Assessing and reducing Risk, Case Studies in impact of Safety /Risk on design | TB 5.1 – 5.2 |
| **Mid Term Exam (8th Week)** |
| 17 - 19 | Teamwork, Confidentiality and Conflicts of interest, Rights of Engineers, Whistle Blowing | TB 6.1 – 6.4,  |
| 20 -22 | Honesty | TB 7.1 – 7.4 |
| 23-24 | Engineering, Ecology and Economics, Ethical frameworks | TB 8.1 – 8.2 |
| 25-27 | Multinational Corporations, Global Issues, Computer Ethics and the internet | TB 9.1 – 9.3 |
| 28-30 | Engineers and Technological Progress | TB 10.1 – 10.2 |
| 31-32 | Presentations  | None |
| **Final Term Exam (Comprehensive)** |