ME 49200
TECHNOLOGY AND VALUES

Course Outcomes [Related ME Program Outcomes in Brackets]

1. Develop awareness of technology's impact on people and society. [A6]
2. Learn to critically assess complex interdisciplinary issues. [B4]
3. Develop a tolerant mind, open to changes in values and institutions. [C2]
4. Develop moral autonomy and a moral vision. [B3]
5. Develop skills necessary for ethical assessment of potential technological solutions. [B3]

Engineering Ethics (4 wks)
1. Ethics theories
2. Ethical dilemmas
3. Whistle-blowing
4. Case studies
5. Ethical design

Energy and Environment (3 wks)
1. Resources
2. Pollution
3. Population
4. Poverty
5. Economic Development
6. Appropriate Technology

Economics and Politics (3 wks)
1. Corporations
2. Economic Growth
3. Research and Development
4. Risk assessment
5. Legal issues
6. Democratic Decision-Making
7. Role of the Media

Culture and Community (3 wks)
1. Technological Optimism
2. Technological Pessimism
3. Cultural Paradigms
4. Technological Fixes
5. Political Fixes
6. Technological Determinism
7. Role of the Engineer
8. Futuristics

Philosophy and Religion (2 wks)
1. Personal Responsibility
2. Human Values
3. Warfare
4. God and Spirituality
5. Stewardship

Revision Date: 8/06/2012
**1. COURSE NUMBER AND NAME:** ME 49200 Technology and Values

**2. CREDITS AND CONTACT HOURS:** 3 credits
   a. Lecture – 1 day per week at 150 minutes for 16 weeks

**3. COURSE COORDINATOR OR INSTRUCTOR:** P. Meckl

**4. TEXTBOOK:**

**5. SPECIFIC COURSE INFORMATION:**
   a. **Catalog Description:** The impact of science and technology on personal and societal value systems. The special responsibility of engineers. Practical methods for using human values to guide future technological developments. Societal problems considered: warfare, energy, over-population, resource depletion, and environmental degradation. Inter-disciplinary approaches stressed. Typically offered in spring (alternate years).
   
   b. **Prerequisites:**
      Senior Standing
   
   c. **Status:** Elective

**6. SPECIFIC GOALS FOR THE COURSE**
   a. **Course Outcomes:**
      [Related ME Program Outcomes in Brackets]
      1. Develop awareness of *technology’s impact on people and society*. [A6]
      2. Learn to critically *assess complex interdisciplinary issues*. [B4]
      3. Develop a tolerant mind, *open to changes in values and institutions*. [C2]
      4. Develop *moral autonomy* and a *moral vision*. [B3]
      5. Develop skills necessary for *ethical assessment* of potential technological solutions. [B3]

   b. **Related ME Program Outcomes:**
      [Related ABET Outcomes Listed in Brackets]
      A1. Engineering Fundamentals;          B3. Prof/Ethical Responsibility;  
      A3. Experimental Skills;              B5. Life-Long Learning;           
      A4. Modern Engr Tools;                C1. Leadership,                    
      A5. Design Skills;                    C2. Global Engineering Skills;     
      A6. Impact of Engr Solns;             C3. Innovation;                    
      B1. Communication Skills;             C4. Entrepreneurship              
      B2. Teamwork Skills

**7. LIST OF TOPICS:** See following page.

**PREPARED BY:** P. Meckl

**REVISION DATE:** August 6, 2012