CE / CHE / ECE / ME 400: The Compleat Engineer
Fall or Spring Semester

Type (check one):	Required: ✓ Elective: (before 2006)
2005-2006 Catalog Data:	ECE 400. The Compleat Engineer. Same as CE 400, ChE 400, ME 400. This course deals with a wide array of issues facing the practicing engineer. Topics include: engineering ethics; regulatory issues; health, safety, and environmental factors; reliability, maintainability, producibility, sustainability; and the context of engineering in the enterprise, in society, and as part of the global economy. Prerequisite: Permission of the department. *One semester, three credits*
Prerequisites:	Permission of Department
Co-Requisites:	None
Textbook:	C.E.Harris, M.S. Pritchard, and M.J. Rabins, *Engineering Ethics*, 2nd Ed, Wadsworth, 2000; and M. Modarres, *Reliability and Risk Analysis*, Marcel Dekker, 1993.
Other Required Materials:	None
Other References:	None
Instructor:	Dr. Bernard B. Beard, Associate Professor of Mechanical Engineering, and Dr. Eric B. Welch, Associate Professor of Electrical and Computer Engineering
Course Objectives:	1. Introduce students to engineering ethics and professionalism 2. Familiarize students with design concerns such as environmental impacts, health, safety, regulatory issues, social/political factors, etc. 3. Introduce concepts of reliability, maintainability, and producibility 4. Develop appreciation for role of engineering in a global economy
Prerequisites by Topics:	1. Design experience
Topics:	1. Ethics and Professionalism 2. Regulatory issues 3. Health, safety, and environmental considerations 4. Reliability, maintainability, producibility, sustainability 5. Quality 6. Human factors engineering 7. The context of engineering in the enterprise and in society 8. Engineering in the global economy 9. Current events and their interactions with the engineering profession
Class Schedule:	Three 50-minute sessions per week

Prepared by: Dr. Bernard B. Beard **Date:** 1/12/2005

Professional Component:

Category (check one)	____ Math/Basic Science __✓__ Engineering ____ General Education ____ Other
Design (check one)	__✓__ Significant ____ Some ____ None
Realistic Constraints (check all that apply)	__✓__ Economic __✓__ Environmental __✓__ Sustainability __✓__ Manufacturability __✓__ Ethical __✓__ Health & Safety __✓__ Social __✓__ Political

Relationship to Program Outcomes:

Check all that apply:

__✓__ (a) an ability to apply knowledge of mathematics, science, and engineering
__✓__ (b) an ability to design and conduct experiments, as well as to analyze and interpret data
__✓__ (c) an ability to design a system, component, or process to meet desired needs
__✓__ (d) an ability to function on multi-disciplinary teams
__✓__ (e) an ability to identify, formulate, and solve engineering problems
__✓__ (f) an understanding of professional and ethical responsibility
__✓__ (g) an ability to communicate effectively
__✓__ (h) the broad education necessary to understand the impact of engineering solutions in a global and societal context
__✓__ (i) a recognition of the need for and an ability to engage in life-long learning
__✓__ (j) a knowledge of contemporary issues
__✓__ (k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice