

ME 335 – Probability & Statistics for Engineers
Fall 2003

Required or Elective: Required

2003-2004 Catalog Data:

Fundamentals of probability, distribution theory, data analysis and statistics, interval estimation, hypothesis testing, and regression analysis.

Prerequisite(s): Mathematics 408D and Mechanical Engineering 205 with a grade of at least C in each, and admission to an appropriate major sequence in engineering.

Textbook(s):

Anthony J. Hayter, *Probability and Statistics for Engineers*, 2nd Edition

Other Required Material:

None

Course Objectives:

To develop a thorough understanding of the methods of probability and statistics which are used to model engineering problems and develop the necessary skills to implement and analyze basic statistical models using computer software packages.

Topics Covered (# of classes per topic):

1. Probability Theory (6)
2. Random Variables & Distributions (7)
3. Statistics, Inferences, etc. (10)
4. Regression Analysis (5)

Class/Laboratory Schedule (Type, number and duration of sessions each week)

1. Class: 2 per week; 75 minutes each
2. Recitation: 1 per week; 50 minutes
3. Lab: 0 per week; 0 minutes

Design Assignments:

None

Laboratory Projects:

None

Contribution of Course to Meeting the Professional Component:

	SCH	
Math and Science	1.5	
Engineering Topics	1.5	(Including: <u>0</u> SCH of Engineering Design)
General Education		

Relationship of the Course to ME Program Outcomes:

ABET a - k	✓	ME Program Outcomes
a	✓	1. Knowledge of and ability to apply engineering and science fundamentals to real problems.
e	✓	2. Ability to formulate and solve open-ended problems.
c		3. Ability to design mechanical components, systems, and processes.
b	✓	4. Ability to set up and conduct experiments, and to present the results in a professional manner.
k	✓	5. Ability to use modern computer tools in mechanical engineering.
g		6. Ability to communicate in written, oral and graphical forms.
d		7. Ability to work in teams and apply interpersonal skills in engineering contexts.
i	✓	8. Ability and desire to lay a foundation for continued learning beyond the baccalaureate degree.
f		9. Awareness of professional issues in engineering practice, including ethical responsibility, safety, the creative enterprise, and loyalty and commitment to the profession.
h, j		10. Awareness of contemporary issues in engineering practice, including economic, social, political, and environmental issues and global impact.

ABET EC2000 Program Criteria for Mechanical Engineering Achieved:

MECHANICAL ENGINEERING PROGRAM CRITERIA

✓	Programs must demonstrate that graduates have:
	A. Knowledge of chemistry and calculus-based physics with depth in at least one;
	B. The ability to apply advanced mathematics through multivariate calculus and differential equations;
✓	C. Familiarity with statistics and linear algebra;
	D. The ability to work professionally in both thermal and mechanical systems areas including the design and realization of such systems.

Prepared by: J. Hasenbein Date: March 4, 2004