



	2. Design and conduct experiments, as well as analyze and present results in a professional manner. <b>(b)</b>
√	3. Design, model, analyze and realize a component, system (thermal or mechanical), or process to meet specific requirements and realistic constraints. <b>(c, ME2)</b>
	4. Communicate effectively, and function in multidisciplinary teams. <b>(d, g)</b>
√	5. Identify, formulate, and solve engineering problems. <b>(e)</b>
√	6. Understand professional and ethical issues and the responsibilities of the engineering practice. <b>(f)</b>
√	7. Recognize contemporary issues and environmental, cultural, and economical consideration of the engineering profession. <b>(j, h)</b>
	8. Identify the need for professional development and engage in life-long learning. <b>(i)</b>
	9. Use the techniques, skills, and modern engineering and computing tools necessary for engineering practice. <b>(k)</b>
√	10. Apply the basics of statistics and probability. <b>(ME3)</b>
	11. Recognize the need and engage in solving national environmental issues.

**Course relationship to 2006/2007 ABET criteria for mechanical engineering programs:**

	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:**

Dr. Mahmoud Rababah

**Date:**

5 Feb. 2020

**Course Contents:**

Ch 1. Introduction

Ch 2. Materials

Ch 3. Load and Stress Analysis

Ch 4. Deflection and Stiffness

Ch 5. Failures Resulting from Static Loading

Ch 6. Fatigue Failure Resulting from Variable Loading

Ch 7. Shafts and shaft components

Ch 8. Screws, Fasteners, and the Design of Nonpermanent Joints

Ch 9. Welding, Bonding, and the Design of Permanent Joints

Ch 10. Mechanical Springs