

**University of Colorado at Boulder  
Lockheed Martin Engineering Management Program**

**EMEN 5000**

**Engineering Analysis  
Spring Term 2008**

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**TEXT**

Hagen, *Introduction to Engineering Analysis*, second edition, 2005.

**GRADING**

Exam I 100 points		Exam II 100 points			Exam III 100 points		Course Total 300 points		
The maximum points necessary for the respective grade is listed below. Instructor reserves the option to reduce the points necessary for each grade.									
A	A-	B+	B	B-	C+	C	C-	D	F
280	270	260	250	240	230	220	210	180	<180

**COURSE OUTLINE**

<b><u>Week</u></b>	<b><u>Date Due</u></b>	<b><u>Material</u></b>
1	Aug 28	<b>Introduction</b> Review of the course topics and focus; introduction to critical thinking concepts and the role of analysis in engineering. <b>Chapter 1: The Role of Analysis in Engineering</b> <i>Problem 2</i>
2	Sept 4	<b>Chapter 2: Dimensions and Units</b> Introduction of the systems of units used in science and engineering; discussion of unit conversion and order of magnitude estimates. <i>Problems 4, 7, 19, 33, 37</i>
3	Sept 11	<b>Chapter 3: Analysis Methodology</b> Review of key mathematics tools from trigonometry, calculus, vectors, mathematical series, and numerical methods; system for organizing and structuring problems. <i>Problems 2, 8, 12, 16, 20</i>

4,5	Sept 25	<p><b>Chapter 4: Mechanics</b>  Study of vector unit systems, problems in static equilibrium, motion in one dimension, motion in a plane, and Newton's Laws of Motion.  <i>Problems 3, 7, 12, 17</i></p>
6	Oct 2	<b>EXAM I</b>
7,8	Oct 16	<p><b>Chapter 5: Electrical Circuits</b>  Introduction to the concept of charge and Coulombs Law, electric potential, and voltage; analysis of DC circuits  <i>Problems 3, 13, 27</i></p>
9,10	Oct 30	<p><b>Chapter 6: Thermodynamics</b>  Introduction to the theory of gases with pressure, temperature, and volume relationships; concepts of energy; The Laws of Thermodynamics.  <i>Problems 3,7,18,29,35</i></p>
11	Nov 6	<b>EXAM II</b>
12	Nov 13	<p><b>Chapter 7: Fluid Mechanics</b>  Study of the properties of fluids; analysis of problems in static fluids; Evaluation of dynamic fluids using the Bernoulli Equation  <i>Problems 3,12,19,26</i></p>
13	Nov 20	<p><b>Chapter 8: Data Analysis: Graphing</b>  “A picture is worth a thousand words.”  <i>Problems 1,2,8,10,11,20</i></p>
14		<b>FALL AND THANKSGIVING BREAK</b>
15	Dec 4	<p><b>Chapter 9: Data Analysis: Statistics</b>  Study of a branch of applied mathematics addressing the collection, presentation, analysis, and interpretation of data.  <i>Problems 2,3,5,8,16,17</i></p>
16	Dec 11	<b>EXAM III</b>