

**School of Engineering and Computer Science**  
**MECH 101: Introduction to Mechanical Engineering**

<b>Catalog Data:</b>	<b>101 Introduction to Mechanical Engineering 2</b> Course Prerequisite: MATH 171 or concurrent enrollment. Introduction to mechanical engineering profession, engineering problem solving, computers in engineering design methods. Typically offered Spring.
<b>Class Schedule:</b>	Two 50-minute lecture sessions per week, for one semester.
<b>Laboratory Schedule:</b>	None
<b>Prerequisites by Course:</b>	MATH 171 or concurrent enrollment.
<b>Prerequisites by Topic:</b>	<ol style="list-style-type: none"> <li>1. Graphs, properties and applications of polynomial, rational, exponential and logarithmic functions.</li> <li>2. Properties and applications of trigonometric functions.</li> </ol>
<b>Textbook:</b>	Hagen, K. D. (2014). <i>Introduction to Engineering Analysis</i> , 4th ed. Upper Saddle River, NJ: Pearson Education, Inc. (publishing as Prentice-Hall). ISBN-13: 978-0-13-3485165.
<b>Course Coordinator:</b>	Dr. Dave Kim
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>1. Explore mechanical engineering profession and careers.</li> <li>2. Define fundamental concepts in mechanics, including vectors, forces, work, energy, etc., for engineering problem-solving.</li> <li>3. Participate in a team-work class project to design and build a prototype with constraints.</li> <li>4. Write a technical report on the class-project and give a professional presentation at the end of class.</li> </ol>
<b>Topics Covered:</b>	<ol style="list-style-type: none"> <li>1. Overview of the mechanical engineering profession</li> <li>2. Mechanical engineering career exploration</li> <li>3. Introduction to mechanical engineering disciplines</li> <li>4. Engineering problem solving</li> <li>5. Fundamentals of mechanics: vectors, forces, work, energy, etc.</li> <li>6. Engineering team projects</li> </ol>
<b>Lab Experiments and Activities:</b>	None
<b>Course Outcomes:</b>	Students will be able to:

	<b>Assessed for Student Outcomes</b>	2-a. Develop an engineering problem statement for a mechanical system. 2-d. Provide solutions and prototypes that meet specified needs for engineering designs. 5-a. Establish common goals, tasks, timeline, etc., as a team for design projects. 5-b. Share responsibilities and information on design project schedule and tasks with other members as a team.	
	<b>Other</b>	3-b. Deliver well-organized, logical oral presentations accommodating audience interests and background, including good explanations when questioned.	
<b><i>Required or Elective Course:</i></b>	Required		
<b><i>Relationship of Course to Program:</i></b>	Meets: Educational Objectives <u>1, 2, 3</u> Student Outcomes <u>2, 3, 5</u>		
<b><i>Prepared by:</i></b>	Dr. Dave Kim	<b>Date:</b>	11/16/2023
<b><i>Approved by USC:</i></b>	11/16/2023		