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# MIDDLESEX COUNTY COLLEGE

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## COURSE SYLLABUS

<b>Department:</b>	Engineering Technologies
<b>Program:</b>	Mechanical Engineering Technology
<b>Course Number:</b>	MEC 260
<b>Title of Course:</b>	Mechanical Design Project
<b>Curriculum Coordinator:</b>	Rick Schieni
<b>Designation:</b>	Required Course

### Course Description:

Students working in teams, integrate their knowledge of theoretical concepts and practical applications of kinematics, robotics, manufacturing, statics, fluids, electrical, electronics, and graphics to complete a comprehensive design project. Emphasis will be in areas related to pharmaceutical, orthotics, medical devices and instruments, instrumentation, fluid transport, precision manufacturing, and assembly. Oral presentation and a technical report are required.

### Prerequisite:

MEC 228 Kinematics Design

### Co-requisites:

MCT 220 Introduction to Engineering Technology  
MEC 204 Fluid Mechanics

### Textbook and /or other required material:

None

### Course Learning Outcomes and their relationships to Student Outcomes:

1. Complete a comprehensive design project, which requires a working model. **(SO d)**
2. Analyze and solve technical problems. **(SO b)**
3. Utilize software to solve problems and produce technical documents.
4. Prepare material list and a cost estimate for the design project.
5. Present information developed in the process of carrying out the design project. **(SO f)**
6. Utilize graphical techniques and word processing software to produce engineering drawings, specifications and design reports. **(SO j)**
7. Demonstrate creativity in the design of the project.
8. Analyze, evaluate and discuss elements of the design project during the final oral presentation.
9. Recognize the need for and an ability to engage in lifelong learning. **(SO g)**
10. Understand professional, ethical and social responsibilities. **(SO h)**
11. Commitment to quality, timeliness, and continuous improvement. **(SO i)**

**Topics Covered:**

- Team building and project research
- Scope of work
- Presentation of preliminary design and calculations
- Material list and cost estimate
- Design and build with weekly written and oral updates
- Technical report and oral presentation

**Class/Laboratory schedule. Number of sessions each week and duration of each session:**

1 lecture hour per week for 14 weeks

2 laboratory hours per week for 14 weeks

**Criterion 5 Contribution:**

Technical Content

<b>Prepared By:</b>	Joseph Misuraca	<b>Date:</b>	3-20-2008
<b>Updated By:</b>	Thom Sabol	<b>Date:</b>	February 13, 2009
<b>Rev 2:</b>	Misuraca Update mapping of course outcomes to 2014-2015 ABET student outcomes	<b>Date:</b>	4/8/14
<b>Rev 3:</b>	General Update	<b>Date:</b>	3/15/21