

MECHANICAL ENGINEERING PROGRAM
ABET COURSE SYLLABUS

ME 264 Introduction to Mechanical Engineering For Transfer Students (1 Unit) Required for Transfer Students

Course Description: (2019-20 Catalog)	Introduction to Mechanical Engineering and its application in professional practice. Includes design, analysis, testing and dissection of mechanical engineering systems. 1 laboratory.
Prerequisite Courses:	None
Prerequisites by Topic:	None
Textbook: (and/or other required material)	None
References:	None
Course Coordinator/Instructor:	Sarah Harding, Lecturer, ME Department
Course Learning Outcomes:	<ol style="list-style-type: none">1. Students will investigate mechanical systems through hands on laboratory experiences.2. Students will design a simple system.
Relationship of Course to Mechanical Engineering Student Outcomes:	SO 1: Introduce (I) SO 2: SO 3: SO 4: SO 5: Introduce (I) SO 6: Introduce (I) SO 7:
Topics Covered:	<ol style="list-style-type: none">1. Design process: Search for problems, problem definition, idea generation techniques, idea selection, implementation, evaluation, and iterations.2. Considerations in Design: Strength and strain, forces, dynamics, materials, size, human factors, energy required, power transmission, etc.3. Individual and Team projects in dissection of mechanical devices and in design.4. Laboratory Safety, safe shop practice

Laboratory Projects:

1. Reverse Engineering: dissection of household appliances, electric drills, compressors, and lawn mower engines. (5 labs)
2. Introduction to Experimentation, Data Analysis, and Reporting: Students discover the properties of three different springs (helical, torsional, leaf) and write a formal report discussing the results. (1 lab)
3. Introduction to Mechatronics Concentration: Students are directed to develop open-ended designs to generate certain behaviors using basic mechatronics components. (1 lab)
4. Introduction to HVAC&R Concentration: Students collect data from a household AC unit and compare results to manufacturer. (1 lab)
5. Design Theory and Practice: Design projects include a conceptual design, prototype build, and a final design (2 labs)
6. Basic Shop Practice and Fabrication Techniques: Students tour the student machine shop and take the safety certification test.

Class/Lab Schedule:

One 170 minute lab per week.

Contribution of Course to Meeting the Professional Component:

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| (a) College-level mathematics and basic sciences: | 0 credits |
| (b) Engineering Topics: | 0 credits |
| Design | 1 credit |
| (c) General Education: | 0 credits |
| (d) Other: | 0 credits |

Prepared by:
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Date:
10/15/2019
