MECHANICAL ENGINEERING PROGRAM

ABET COURSE SYLLABUS

ME 453 Trends and Opportunities in HVAC&R. (1 Activity) Elective

Course Description: Overview of the roles of the Heating, Ventilating, Air-Conditioning and Refrigeration (HVAC&R) industry. Presentation of state-of-the-art HVAC&R systems, components and design solutions. Includes guest speakers from HVAC&R industry. 1 activity.

Prerequisite Courses: ME 302 or ENVE 304.

Prerequisites by Topic: Thermodynamics.

Textbook: None

References: None

Course Coordinator/Instructor: Steffen Peuker, Assistant Professor of ME

Course Learning Outcomes: Student will be able to:
1. Explain the scope and purpose of the HVAC&R industry.
2. Examine environmental challenges and how HVAC&R design solutions address those challenges.
3. Differentiate between different HVAC&R design solutions.
4. Describe advantages and disadvantages for each of the design solutions/systems presented in class.
5. Formulate a personal plan to land a job in the HVAC&R industry.

Relationship of Course to Mechanical Engineering Student Outcomes:
SO 1: 
SO 2: Mastered (M)
SO 3: 
SO 4: Mastered (M)
SO 5:
SO 6: 
SO 7:

Topics Covered: 1. What is the HVAC&R industry?
2. How to land a job in the HVAC&R industry?
3. Design Challenges for achieving Sustainable Buildings
4. Specific design solutions for different applications, e.g. hospital, data centers, office buildings etc.
5. Building Automation Systems  
6. Working for a Design-Build company  
7. The future of HVAC&R – Opportunities and challenges  

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<thead>
<tr>
<th>Laboratory Projects:</th>
<th>N/A</th>
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<tbody>
<tr>
<td>Class/Lab Schedule:</td>
<td>One 110-minute activity per week.</td>
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<tr>
<td><strong>Contribution of Course to Meeting the Professional Component:</strong></td>
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<tr>
<td>(a) College-level mathematics and basic sciences:</td>
<td>0 credits</td>
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<td>(b) Engineering Topics:</td>
<td>1 credits</td>
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<td>Design:</td>
<td>0 credit</td>
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<td>(c) General Education:</td>
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<td>(d) Other:</td>
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<tr>
<th>Prepared by:</th>
<th>Date:</th>
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<tbody>
<tr>
<td>Steffen Peuker</td>
<td>6/12/19</td>
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