ENG 491  **Interdisciplinary Design Proj**  credit: 1 TO 4 hours.
Disciplined, multi-department, team-structured project design experience with an overall (or major phase) end-of-term completion date. Projects involve design specification through a proposal, analyses of cost and other tradeoffs among alternative designs, design review, fabrication and assembly, functional and environmental testing, and demonstrations (as applicable). Reports and presentations at the end of each term. Individual engineering activities as well as team responsibilities. 1 to 4 undergraduate hours. No graduate credit. Senior standing required. May be repeated. Credit toward the degree is determined by the student's major department. Prerequisite: Consent of instructor.

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<th>Type</th>
<th>Section</th>
<th>Time</th>
<th>Days</th>
<th>Location</th>
<th>Instructor</th>
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<tbody>
<tr>
<td>55653</td>
<td>Lecture</td>
<td>CU1</td>
<td>08:30 AM - 09:50 AM</td>
<td>TR</td>
<td>225A - Talbot Laboratory</td>
<td>Lembeck, M</td>
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**Nanosatellite Design Build 1**  
Instructor Approval Required  
Nanosatellite Design and Build 1 is an introductory course in the design of small satellites. It is an interdisciplinary, systems-level course that teaches a range of topics, including electronics, space environments, attitude control and determination, and structural design, among others. The course is linked with a campus research library, and promotes the to students to get directly involved with real space missions and projects on going at the university. The course has a strong lab component, offering the opportunity to design and build real satellite hardware, and learn about and develop tests for simulating the space environment. After completing a lab training module, students formulate their own final semester projects with direct application to the current satellite programme. Students are expected to be highly independent with good time management skills, and are encouraged to continue to Nanosatellite Design and Build 2.

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<td>47381</td>
<td>Lecture</td>
<td>SD</td>
<td>ARRANGED -</td>
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Credit Hours: 3 hours 
Instructor Approval Required  
Students will work as an interdisciplinary team to design a net-zero solar smart-home for the DoE Race to Zero design competition, including an innovative architectural design; efficient HVAC system; photovoltaic power generation; high-efficiency water systems; smart lighting, appliances and home automation; and construction and financial planning. Students will work directly with industry partners and participate in DoE green building training.