Course: ENPM 624 – Renewable Energy Applications  
Semester: Fall 2016  
Day(s): Monday  
Time: 4:00pm to 6:40pm  
Location: TBD  
Instructor: Dunbar  
Phone:  
Email: zdunbar@umd.edu  

**Course Description**

This course covers the engineering analysis of renewable energy sources for heating, power generation and other uses. Wind energy, solar thermal, solar photovoltaic, biomass, hydroelectric, geothermal and ocean power systems are discussed. The course provides a broad overview of the growing use of renewable energy sources in the world economy, with detailed analyses of specific applications.

Prerequisites: Undergraduate level thermodynamics, heat and mass transfer and fluid mechanics.

The course makes heavy use of Canvas for course communication and assignments.

Lecture attendance is highly encouraged, but not required. Extensions and/or acceptance of late assignments is permissible only with advanced permission from the instructor. Class lectures and materials are copyright protected and may only be reproduced for personal use. Students are expected to abide by UMD Code of Academic Integrity.

Office hours will be held online through Skype or similar software, at a time to be determined by class consensus.

Students with disabilities may contact the instructor with any concerns or needs.

**Required/Recommended Textbooks**

Renewable Energy: Power for a Sustainable Future by Godfrey Boyle

**Course Outline**

Topics Covered:
Overview of current energy resources  
Photovoltaic solar power  
thermal solar power  
geothermal power  
wind power  
hydroelectric power  
Tidal & wave power  
Biofuels and Biomass  
Energy storage technology
Grading:

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<tr>
<th>Component</th>
<th>Points</th>
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<tr>
<td>Quizzes</td>
<td>45</td>
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<tr>
<td>Midterm</td>
<td>20</td>
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<td>Final</td>
<td>20</td>
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<td>Presentation</td>
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Quizzes will be held online through Canvas.

The midterm and the final exam will be conducted in two sections. An online, timed exam through Canvas consisting of multiple choice, short answer and simple calculations. In addition, there will be an off-line, ‘take-home exam’ section, that will be uploaded to Canvas.