**Revise Course (EGR 166, effective Fall 2013)**

### Summary of Changes

EGR 166 is requested for general education designation.

### Course Changes

#### Course Details

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<tbody>
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<td>Is this same course also offered at the Grad (Undergrad) level</td>
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### Course Listing

Current Course Listing

Fundamentals of the following energy types: mechanical, wind, hydro, thermal, biomass, fossil fuels, geothermal, solar, nuclear radiation, and electricity. The effect of energy on transportation, economics and sustainability of the environment.

Amended Prerequisites / Corequisites / Restrictions

Amended Course Description

Grading Mode

(N grades are not allowed for Rackham programs)

Standard (ABCDE)

Repeat Status

Not repeatable for additional credit

Can be Y grade

Not repeatable for additional credit

No

Cross Listings (will automatically be created/changed)

The only change is to request for the technology attribute

**IF THIS AFFECTS PROGRAM REQUIREMENTS, A PROGRAM FORM IS REQUIRED**

### Approvers

<table>
<thead>
<tr>
<th>Name</th>
<th>Reviewer Type</th>
<th>Review Status</th>
<th>Review Time</th>
<th>Reason</th>
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https://sis.umflint.edu/prod/zwcc_course_change.view_change

11/5/2012
<table>
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<th>Role</th>
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<tr>
<td>Kristina Hansen</td>
<td>Catalog Editor</td>
<td>Accepted</td>
<td>11-02-2012 03:03</td>
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<tr>
<td>Olanrewaju Aluko</td>
<td>Requester</td>
<td>Accepted</td>
<td>11-02-2012 09:14</td>
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<td>Rhonda Broadworth</td>
<td>Previewer</td>
<td>Pending</td>
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<td>Stephen Turner</td>
<td>Department Chair</td>
<td>Accepted</td>
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**Accept or Reject request**

- **Accept Change Request** [Reason]
- **Reject Change Request** [Reason]
- **Reject / Amend Change Request** [Reason]

**RELEASE: 8.5.3**

https://sis.umflint.edu/prod/zwcc_course_change.view_change
Course Title: Energy and Environment EGR 166

Learning Outcome No. 1 - Reflect on one's own learning

Narrative: In this course, students will complete assignments that will make them reflect on various topics covered and how the knowledge acquired has been able to influence the choice of the energy they use daily and how they use this energy through appropriate choices of technology to maintain a better environment.

Assessment tools: Students will be assigned hypothetical problems that will make them reflect on knowledge gained in the classroom environment and will also develop creative ideas. This will involve written report and presentations.

Learning Outcome No. 3 - Demonstrate the ability to think critically

Narrative: This course will provide the fundamental knowledge about energy conversion and how this affects both the environment and the economy on the local and global scales. The course will help the students develop an understanding of the complex interrelationships among the many technical and economic factors involved in energy and energy utilizations. Different sources of energy and their conversions and utilizations will be presented. Students will be asked to explore the better ways in which the energy can be utilized to minimize energy waste and also reduce environmental pollution.

Assessment tools: Homework assignments which contain questions that call for analysis, synthesis and applications of concepts will be given to the students periodically for grading.

Learning Outcome No. 4 - Demonstrate the ability to think creatively

Narrative: This course will also be structured toward creating a portion of its focus to orient students to creative thinking processes using brainstorming and team discussion. Classroom discussions about the pros and cons of different techniques for energy conversion and utilization will be included.

Assessment tools: Students will be periodically given data and charts related to energy utilization to analyze in group and also make creative deductions based on their findings.

Learning Outcome No. 5 - Produce competent written work

Narrative: A final paper describing the environmental effect of different energy conversion devices such as gas turbine, wind turbine, domestic electrical appliances, etc., and their advantages, limitations and economic feasibility will be required. Students will use books, library resources, and internet and journal papers to seek knowledge about the topic.

Assessment tools: Students will write project report and make presentation on selected topics.

Learning Outcome No. 12 - Apply knowledge to complex issues

Narrative: The course content will include how various energy transformation techniques are reshaping the energy utilization because of economic, environmental sustainability, public awareness, and government regulations. Students will acquire the knowledge about how energy transformation technology can influence local, regional, and global economic growth and environment. Analyses will be performed on changes in global energy consumption and utilization patterns.

Assessment tools: Both real-life and hypothetical problems will be assigned to students in homework and examinations.