**New York City College of Technology**

**Interdisciplinary Committee**

**Course Review Form**

**DATE:** October 14, 2014

**REVIEWER:** Johannah Rodgers

**COURSE TITLE & NUMBER: CMCE 2510**

**CREDIT HOURS:** 3

**PREREQUISITES:** ENG1101, MATH1275

**COURSE IS:** Existing X New In development

**PROPOSED COURSE DESIGNATION**: X College Option X elective Capstone other:

**DEPARTMENT HOUSED IN:** CMCE

**PROPOSED STRUCTURE (e.g., co-taught, guest lecture, LC, other):**  team taught + guest lectures

**CREDIT DISTRIBUTION** (if co-taught): 1.5/1.5

**CATALOG DESCRIPTION:** This special topics interdisciplinary course provides an introduction to sustainable energy systems, such as hydropower, solar, wind, geothermal and natural gas. Students learn about the scientific process of energy production and its applications. Students will explore economic, social, political, and environmental impacts caused by the demand for sustainable resources.

**DESCRIBE & EVALUATE HOW COURSE MEETS INTERDISCIPLINARY CRITERIA?**

While the course focuses on the topic of sustainable energy systems, which is certainly an issue complex enough to require interdisciplinary analysis, it is designed more as a survey course than an inquiry into a topic from two or more discipline-specific perspectives.

**DESCRIBE & EVALUATE THE INTERDISCIPLINARY STRUCTURE?**

The course introduces students to several different methods of energy production, including some that are currently defined as sustainable—wind and solar—two that are debatable as sustainable—hydro-power and geothermal—and one--natural gas—that is categorized as a fossil fuel and therefore generally not considered sustainable except in substitute forms, such as biogases. The first part of the course includes an introduction to different energy generation systems and methods and the second part of the course focuses on a study of one particular energy generation method and system, analyzing its environmental, economic, and political impacts, as well as its rationale in the context of government policies, both domestic and international. The course description indicates that the course will “integrate science and engineering with perspectives from economics and politics.” According to the definition of IDS for the NYCCT Interdisciplinary Committee, and IDS course “brings the analytic methods of two or more academic disciplines to bear on a specific problem or question.” I do not see the course in its current form offering students a thorough introduction to the analytic methods of any two particular academic disciplines. In deciding to include perspectives from so many disciplines, the course does not currently succeed in introducing students to the methods of any two in a way that will give them insight into the work and thinking of the disciplines.

**DOES COURSE MEET REQUIREMENTS FOR GENERAL EDUCATION?** < see links for criteria CityTech: <http://www.300jaystreet.com/college-council/curriculum_proposals/past_proposals> NYS: <http://www.highered.nysed.gov/ocue/lrp/liberalarts.htm> >

Gen Ed courses are intended to help students develop:

1. an appreciation of and capacity for effective personal expression;
2. knowledge about various intellectual traditions;
3. an understanding of and respect for different peoples and civilizations;
4. knowledge of and appreciation for the natural world, achieved through active engagement with the methods and philosophy of natural science;
5. logical thinking, balanced skepticism, and tolerance for ambiguity and uncertainty;
6. a knowledge of and appreciation for the arts and creative expression;
7. skills needed to locate, evaluate, and synthesize information from a variety of sources;
8. skills needed to understand and use basic research techniques
9. skills needed to perform the basic operations of personal computer use.

As proposed, I believe the CMCE2510 course addresses #1, #4, #5.

**STRENGTHS:** Sustainable Energy is a topic that will appeal to students and lends itself to interdisciplinary inquiry.

**WEAKNESSES:** The course as proposed is very broad. This may result in part from the fact that this course was proposed as a “Special Topics” course that could by design be taught by faculty members in a variety of disciplines. However, a subtitle for the course explaining the specific approach to the topic may help give cross-disciplinary focus to both this version of the course and ones developed by other faculty members.

The focus on Natural Gas, which is not generally defined as a renewable or sustainable energy source, may also be somewhat controversial in light of the proposed course title. The proposers may wish to revise the title since this course appears to be about considering many different methods of energy production, some sustainable, some fossil-fuel based, i.e., natural gas, and some of questionable sustainability, i.e., hydro-power and geothermal. If this course is assessing and comparing the impact of a range of energy production systems and possibly questioning the actual “sustainability” of any energy generation system, the title for the course as written may need to be revised.

Additional issues that need to be addressed are: 1/ the course description as listed does not appear to completely reflect the course as it will be taught. Although the course appears to be in two parts, first, an introduction to various types of sustainable energy sources, and second an inquiry into one specific sustainable energy from economic, political, and policy (both domestic and international) perspectives, the course description does not mention that the second half of the course will focus on one specific energy generation system; 2/ students are asked for the midterm paper to assess the validity of a documentary film. I would like to understand more about specific methods that will be used in assessing the validity of the film and from which disciplinary perspectives this validity will be judged.

I recommend including this course as an IDS course with the following revisions:

1/ A revised course title

2/ That the course be designated a 1000-level, not a 2000-level course

3/ That the second half of the course as proposed by faculty members from Construction Management/Civil Engineering and Chemistry focus on scientific and engineering perspectives related to the environmental impact of energy production

4/ That the midterm project assessing the documentary film be given additional definition as an assessment not of the film generally, but of the film’s use and presentation of secondary source material, data, and facts related to the science and engineering of the specific energy system being considered.