New Course Request

Indiana University

IUB lead campus: Campus also for IUPUI

Check Appropriate Boxes: Undergraduate credit [ ] Graduate credit [x] Professional credit [ ]

1. School/Division: Public and Environmental Affairs
2. Academic Subject Code: SPEA

3. Course Number: E 511 (must be cleared with University Enrollment Services)

4. Instructor: David Good

5. Course Title: Sustainability Assessment

Recommended Abbreviation (Optional) (Limited to 32 Characters including spaces)

6. First time this course is to be offered (Semester/Year): Spring 2011

7. Credit Hours: Fixed at [3] or Variable from [ ] to [ ]

8. Is this course to be graded S-F (only)? Yes [x] No [ ]

9. Is variable title approval being requested? Yes [ ] No [x]

10. Course description (not to exceed 50 words) for Bulletin publication: P: SPEA-E 538, SPEA-V 506 or equivalent

   There has been a proliferation of various metrics that measure the sustainability of products, services, buildings, and institutions. Three are developed: life cycle analysis (ISO14040), the USGBC's LEED certification, and the AASHE's STARS metric. Various uses of these metrics to design products, certify performances, and improve outcomes will be evaluated.

11. Lecture Contact Hours: Fixed at [3] or Variable from [ ] to [ ]

12. Non-Lecture Contact Hours: Fixed at [ ] or Variable from [ ] to [ ]

13. Estimated enrollment: [25] of which [XX 100%] percent are expected to be graduate students.

14. Frequency of scheduling: annually [x] Will this course be required for majors? No [ ]

   (an elective)

15. Justification for new course: This course provides a "hands on" set of tools that are commonly used to evaluate sustainability in organizations, products, and services. These tools are an essential component of the revised sustainability concentration.

16. Are the necessary reading materials currently available in the appropriate library? Yes [x]

17. Please append a complete outline of the proposed course, and indicate instructor (if known), textbooks, and other materials.

18. If this course overlaps with existing courses, please explain with which courses it overlaps and whether this overlap is necessary, desirable, or unimportant. No course overlap.

19. A copy of every new course proposal must be submitted to departments, schools, or divisions in which there may be overlap of the new course with existing courses or areas of strong concern, with instructions that they send comments directly to the originating Curriculum Committee. Please append a list of departments, schools, or divisions thus consulted.

Submitted by: X David Noyes
Department Chairman/Division Director

Date: 1/27/2010

Approved by: X David Noyes
Dean

Date: 1/27/2010

Chancellor/Vice-President

Date

University Enrollment Services

Date

After School/Division approval, forward the last copy (without attachments) to University Enrollment Services for initial processing, and the remaining four copies and attachments to the Campus Chancellor or Vice-President.

UPS 724
University Enrollment Services Final—White; Chancellor/Vice-President—Blue; School/Division—Yellow; Department/Division—Pink; University Enrollment Services Advance—White
E511: Sustainability Assessment

Course Description, Philosophy and Objectives:
Plastic or paper? Carbon footprint. Cradle to grave. LEED platinum. Wells to wheels. Over the last two decades an enormous number of metrics have been developed to measure the social appropriateness of nations, institutions, projects, products and services. These metrics are used for a wide variety of purposes from institutional evaluation to product design. In this course these sustainability metrics are examined both from a theoretical perspective and practical “hands on” perspective. On the theoretical level we want to evaluate whether they do what we think they should do. We are also interested in whether they have potential unintended consequences. At the practical level, it is useful to actually know how to implement the sustainable assessments. In that regard we examine three different levels of assessment: Institutional, through the Association for the Advancement of Sustainability in Higher Education’s STARS program. At the project level we implement the U.S. Green Building Council’s LEED certification assessment. Finally at the product and service level we will perform life cycle analysis and some of its variants using ISO14040 standards. Because of the large amount of data to perform life cycle analysis, assessments are typically software and database driven. We will use Simapro, version 7 for that purpose. We will also explore other approaches, including the input-output approach, that relies on completely different data sources.

It is useful to note that these tools are very interdisciplinary in nature, emphasizing planning and architecture, industrial engineering and ecology and public policy analysis. Most enterprises subject themselves to sustainability assessment voluntarily. The theoretical aspects of the course evaluate why they do that (is it to provide real social value or simply “green wash?”) We will also examine metrics at the country level that emphasize the social (education and health), political and economic aspects of sustainability.

Course Texts and Materials:
There are reasonable textbooks available for pieces of the material covered in this course, e.g., life cycle analysis, but not everything. Consequently, there will be class notes provided that structures some of the material were textbooks are not available. These will be available directly at the class website www.classwebsite.iu.edu/sustainableassessment.


Prerequisites:
Students are expected to have a firm understanding of college level algebra. This is fulfilled through the formal requirement for this course is E538 or V506 or equivalent. Students without this background are strongly encouraged to take a preparatory course. Measurement is fundamentally a quantitative thing. We will, from time to time use some calculus in this class to enhance the understanding of those familiar with it.

Student Evaluation:

<table>
<thead>
<tr>
<th>Class participation</th>
<th>Course Team project</th>
<th>Final Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>40%</td>
<td>20%</td>
</tr>
<tr>
<td>Homework (about 4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30%</td>
<td></td>
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</tbody>
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The team project (teams of four students each will be constructed in the first two weeks of the semester) is clearly the key evaluation aspect of the course. These teams will use a combination of peer evaluation and instructor evaluation of individual performance. While SPEA students are typically overwhelmed with team projects and here is yet another one. However, the data intensive aspects of sustainability assessment make individual projects untenable within the scope of a one semester course. Students are encouraged to work together on homework assignments as well. The purpose of the project is to gain experience with implementing the measurement tools. The purpose of the final exam is to evaluate student understanding of the more abstract aspects regarding use, value and potential misuse of the sustainability metrics. Academic misconduct is defined and sanctions described at http://registrar.indiana.edu/misconduct.shtml.