Course Description

use this for Proposing New Courses or GE/USCP Courses

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Department: ARCH
College: CAED
Proposer: Margot McDonald
E-mail: mmcdonal@calpoly.edu
Date: 5.19.04

Experimental: ☐ Subtitle: ☒ Begin Date: Fall 2004

I. Summary Description

1. Course Prefix, Number, Title: ARCH 477 Advanced Topics in Environmental Architecture

2. Catalog Description as it will appear in the catalog including units, prerequisite, mode, grading. (substantive, but no more than 40 words of content description)
Theory and application of methods used to address energy and ecological issues of integrated building and site design. Class Schedule will list topic selected.

3. Total Course Units: 4.0
Number of units per mode of instruction: Lec Lab Act Sem 4 Supv

If course has fewer than 4 units and is not an exception, provide a compelling reason.

4. Grading Type: Regular ☒ Credit/NC ☐

5. Distance Education (DE): No ☒ Yes ☐ If yes, % taught via DE.

6. General Education (GE): No ☒ Yes ☐ If yes, GE Area:

7. United States Cultural Pluralism (USCP): No ☒ Yes ☐ If yes, refer to USCP criteria

8. Community Based Learning (CBL): No ☒ Yes ☐ If yes, refer to CBL criteria

9. Prerequisite/Co-requisites: (note: 300-400 level courses must have prerequisite) ARCH 307

10. Crosslisted Course: No ☒ Yes ☐ If yes, indicate other course prefix and number:

11. Repeatable? Is the course repeatable for multiple credit? No ☒ Yes ☐ If yes, maximum # units: 12.0
Is the course repeatable in the same term? No ☒ Yes ☒
12. Variable Course Content (Subtopics with Different Titles): No ☐ Yes ☒

13. Replacement Course: *(meets prior course requirement & repeats)* No ☒ Yes ☐ If yes, indicate prior course prefix, number, title and units:

14. Course Classification Number(s) C/S#: C-5

II. Explanation

A. Proposed for Major, Minor, Support, Certificate or Credential Program(s)?

   Major, required (if yes, specify): No ☐ Yes ☐

   major, elective (if yes, specify): No ☐ Yes ☒ Architecture

   concentration (if yes, specify): No ☒ Yes ☐

   specialization (if yes, specify): No ☒ Yes ☐

   Minor (if yes, specify): No ☐ Yes ☒ Sustainable Environments Minor

   Support for other programs (if yes, specify): No ☒ Yes ☐

   Certificate programs (if yes, specify): No ☒ Yes ☐

   Credential programs (if yes, specify): No ☒ Yes ☐

B. Need

   Briefly explain the need for this new course, and describe how it fits into the programs checked above and their missions and strategic plans.

   Environmental resource issues related to materials, land, air, water, and waste are transforming the way that buildings are designed. While students receive exposure to the fundamentals of “sustainable design” in required architecture courses, this seminar will allow students a vehicle to explore related subtopics at greater depth.

C. Prerequisites

   Briefly explain the reason for any prerequisites or co-requisites for the course.

   Students will need competency in the fundamentals of energy and mass transfer (thermal, light, electricity, acoustics, and water) as it relates to buildings and their environmental context.

III. Syllabus

   Note:

   • Excerpts from materials already prepared for accrediting agencies may be used in this section.
   • It is understood that the syllabus will be updated and modified as needed.
   • For additional information if course is proposed for GE, see [http://www.calpoly.edu/~acadprog/gened/05-07currcycle/ccintro.htm](http://www.calpoly.edu/~acadprog/gened/05-07currcycle/ccintro.htm)
   • For additional information if course is proposed for USCP, see [www.calpoly.edu/~acadprog/curriculum/culturalpluralism.html](http://www.calpoly.edu/~acadprog/curriculum/culturalpluralism.html)
For additional information if course is proposed for CBL, see 
http://academics.calpoly.edu/community/cbl/criteria.htm

For courses with multiple sections, faculty and/or subtopics, describe the consistent principles or key elements that will inform all sections regardless of the subtopic or faculty who will teach the course by providing a representative sample of a syllabus.

A. Learning Outcomes
What should students know or be able to do after taking this course?
Students completing this course should be able to develop sound technical and environmental solutions to building and site design issues, assess and evaluate alternative design solutions based on quantitative and qualitative information, and present results in a professional format.

B. Course Content
Provide a week-by-week outline (readings, discussion topics, lab experiments, activities, assignments, etc.)
Example Subtopic: Environmental Assessment and Green Building Rating Systems
study buildings. Reports will be presented using audio-visual/web technologies as well as electronic report submittal.

Final exam: Mock LEED accreditation exam. (Note that this examination will parallel the format and questions of the professional LEED exam that provides designers with LEED accreditation.)

C. **Assessment Methodologies**
   List and describe the assessment methodologies that will be used to determine the extent to which students have achieved the learning outcomes listed in Section III. Students will be assessed on their competency with course material through written essay assignments corresponding to each of the LEED categories above, (mock LEED) exam covering quantitative and qualitative knowledge of green building rating systems and related environmental technologies, and a term research project presented orally and in a combined illustrated text report format.

IV. **Consultation**

A. Attach signed concurrence memos from any other departments that will be affected by the new course or its prerequisites. N/A

B. List all courses that already cover any significant part of the planned subject matter of this course either within the department or from other departments. Explain why duplication of subject matter is necessary. Attach signed concurrence memos from any other departments with which there will be significant duplication. None.

V. **Resources** (in consultation with the College Dean/Associate Dean)

A. Explain the impact of this new course on allocation of current/new resources.

   **Equipment** (List new equipment needed, and amount and source of funds.)
   None.

   **Supplies** (List new supplies needed, who will need to purchase the supplies [i.e., students, department], and amount and source of funds.)
   None.

   **Facilities** (List type of teaching environment needed.)
   Seminar/lecture classroom. Smart room required for presentation technology.

   **Faculty** (List faculty members who will initially teach the course, and explain how the time needed for them to teach this course will be made available.)
   McDonald (Pena also qualified). Consolidation and reduction of three required environmental control systems courses (2 lectures and 2 labs) into two (2 lectures and 2 activities) has made the necessary time and budget available to teach this selective.

   **Library or Information Technology** (List new periodicals required for initiation and conduct of the course, and number of new volumes of books required; estimate the costs involved. List computer facilities and software needed, and amount and source of funds.)
   The CAED (Harold and Evelyn Hay) Media Resource Center as well as Kenedy Library have the necessary books, magazines, and journals for the course.

B. For Department and College Planning Purposes:

   Estimated number of students in one section of this course? 20
<table>
<thead>
<tr>
<th>Estimated number of sections offered:</th>
<th>each quarter: 1</th>
<th>each year: 3</th>
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### VI. Approval Signatures

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<tr>
<th>Role</th>
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<tbody>
<tr>
<td>Department Head/Chair:</td>
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<tr>
<td>College Curriculum Chair:</td>
</tr>
<tr>
<td>College Dean:</td>
</tr>
<tr>
<td>(This signature is the Dean's guarantee that s/he will provide any additional resources needed to support this course.)</td>
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<td>Vice Provost for Academic Programs:</td>
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For questions and concerns contact Mary Whiteford at 756-5475

Last modified October 24, 2003