Please check one:  ☑ New course  ☐ Revised course

PART I: CATALOG DESCRIPTION

1. Course prefix and number, such as ART 1000:  AET 3414
2. Title (may not exceed 30 characters, including spaces):  Mgt of App. Engineer. Projects
3. Long title, if any (may not exceed 100 characters, including spaces):  Selection and Management of Applied Engineering Projects
4. Class hours per week, lab hours per week, and credit [e.g., (3-0-3)]:  4-0-4
5. Term(s) to be offered:  ☑ Fall  ☑ Spring  ☐ Summer  ☐ On demand
6. Initial term of offering:  ☐ Fall  ☑ Spring  ☐ Summer  Year:  2011
7. Course description (not to exceed four lines):
   This course is designed to prepare students to analyze and evaluate the worth of products, systems, structures, and services in relation to their costs; develop and utilize network techniques such as PERT/CPM; schedule activities; develop project budgets; allocate resources; and control progress and costs of technical projects.
8. Registration restrictions:
   a. Identify any equivalent courses (e.g., cross-listed course, non-honors version of an honors course).  None
   b. Prerequisite(s), including required test scores, courses, grades in courses, and technical skills. Indicate whether any prerequisite course(s) MAY be taken concurrently with the proposed/revised course.  MAT 2120G: Finite Math, AET 1323 – Computers for Applied Engineering & Technology
   c. Who can waive the prerequisite(s)?
      ☐ No one  ☑ Chair  ☐ Instructor  ☐ Advisor  ☐ Other (Please specify)
   d. Co-requisites (course(s) which MUST be taken concurrently with this one):  None
   e. Repeat status:  ☑ Course may not be repeated.
      ☐ Course may be repeated to a maximum of  hours or 3 times.
   f. Degree, college, major(s), level, or class to which registration in the course is restricted, if any:  None
   g. Degree, college, major(s), level, or class to be excluded from the course, if any:  None
9. Special course attributes [cultural diversity, general education (indicate component), honors, remedial, writing centered or writing intensive] None
10. Grading methods (check all that apply):  ☑ Standard letter  ☐ C/NC  ☐ Audit  ☐ ABC/NC (“Standard letter”—i.e., ABCDF--is assumed to be the default grading method unless the course description indicates otherwise.)
11. Instructional delivery method:  ☑ lecture  ☐ lab  ☐ lecture/lab combined  ☐ independent study/research
      ☐ internship  ☐ performance  ☐ practicum or clinical  ☐ study abroad  ☐ other
PART II: ASSURANCE OF STUDENT LEARNING

1. **List the student learning objectives of this course:**
   1. Apply time value of money concepts to technical project evaluations;
   2. Demonstrate the correct use of nominal and effective interest rates;
   3. Analyze and solve equivalent worth problems using multiple methods;
   4. Define the life cycle of a technical project;
   5. Define the responsibilities/roles of the project manager;
   6. Organize a multidisciplinary project team;
   7. Develop a project plan and work breakdown structure;
   8. Develop a project budget;
   9. Use project management software to build Gantt, PERT, and CPM charts;
   10. Allocate resources for a project;
   11. Define and estimate uncertainty and risk within a project;
   12. Control, monitor, evaluate, and terminate a project.

   a. **If this is a general education course,** … Not a general educational course.

   b. **If this is a graduate-level course,** … Not a graduate-level course.

2. **Identify the assignments/activities the instructor will use to determine how well students attained the learning objectives:** Tests, homework, quizzes, project, and comprehensive final

3. **Explain how the instructor will determine students’ grades for the course:**

<table>
<thead>
<tr>
<th>OBJECTIVES</th>
<th>Quizzes and homework 20%</th>
<th>Tests (3) 45%</th>
<th>Project 20%</th>
<th>Final Exam 15%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>X</td>
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<td>12</td>
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</tbody>
</table>

4. **For technology-delivered and other nontraditional-delivered courses/sections,** …Not technology delivered

5. **For courses numbered 4750–4999,** …Not applicable

6. **If applicable, indicate whether this course is writing-active,**… Not applicable
PART III: OUTLINE OF THE COURSE

Provide a week-by-week outline of the course’s content. Specify units of time (e.g., for a 3-0-3 course, 45 fifty-minute class periods over 15 weeks) for each major topic in the outline. Provide clear and sufficient details about content and procedures so that possible questions of overlap with other courses can be addressed. For technology-delivered or other nontraditional-delivered courses/sections, explain how the course content “units” are sufficiently equivalent to the traditional on-campus semester hour units of time described above.

<table>
<thead>
<tr>
<th>Weeks</th>
<th>Topic(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5</td>
<td>Introduction to time value of money concepts</td>
</tr>
<tr>
<td>1.0</td>
<td>Nominal and effective interest</td>
</tr>
<tr>
<td>1.5</td>
<td>Equivalent worth analysis</td>
</tr>
<tr>
<td>1.5</td>
<td>Breakeven, sensitivity, and payback analysis</td>
</tr>
<tr>
<td>1.0</td>
<td>Effect of depreciation on project selection</td>
</tr>
<tr>
<td>1.5</td>
<td>Effect of taxes on project selection</td>
</tr>
<tr>
<td>1.0</td>
<td>Planning the project</td>
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<tr>
<td>1.0</td>
<td>Budgeting the project</td>
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<tr>
<td>1.0</td>
<td>Scheduling the project</td>
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<tr>
<td>1.0</td>
<td>Allocating resources</td>
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<tr>
<td>1.5</td>
<td>Learning project management software</td>
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<tr>
<td>1.0</td>
<td>Monitoring and controlling the project</td>
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<tr>
<td>0.5</td>
<td>Evaluating and terminating the project</td>
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<tr>
<td>15</td>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

PART IV: PURPOSE AND NEED

1. **Explain the department’s rationale for developing and proposing the course.**
   This course provides the AET students with a general background in both engineering economy and project management. Our students often obtain jobs as engineers or positions with engineering titles and it is expected that they have this knowledge. Eighteen percent of the National Council for Examiners for Engineering and Surveying Fundamentals of Engineering Exam (the first step towards licensure) is comprised of these topics.

   a. **If this is a general education course, you also must indicate the segment of the general education program into which it will be placed, and describe how the course meets the requirements of that segment.** This is not a general education course

   b. **If the course or some sections of the course may be technology delivered, explain why.**

2. **Justify the level of the course and any course prerequisites, co-requisites, or registration restrictions.**
   A junior-level course is suitable for students who are preparing to become managers in industry. The proposed course will provide undergraduate students with the knowledge and skills to effectively evaluate technical projects. With this foundation, students will be able to develop skills that are more advanced and gain additional experience to become effective leaders.

   This course is math intensive and requires students to use the knowledge and skills obtained in MAT 2120G: Finite Math for analyzing and solving problems. The computer usage skills learned in AET 1324: Introduction to Computer Technologies will be applied in this course.
3. **If the course is similar to an existing course or courses, justify its development and offering.**

   This course content is similar to AET 4223: Construction Cost Estimating; AET 4243: Construction Project Management; BUS 2710: Survey of Finance; and MGT 4850: Project Management. Both AET courses focus solely on applying the project costing and management concepts to the construction industry. This course will be taught applying the concepts to all applied engineering project types and will complement the existing courses. The only overlap between this course and BUS 2710 is the concept of time value of money that must be discussed in any class that is discussing the evaluation of money and interest rates across time. There is significant overlap with MGT 4850. AET 3414 has more focus on the economic selection process and focuses solely on project implementation of general applied engineering projects (e.g., equipment selection and installation).

   a. **If the contents substantially duplicate those of an existing course, the new proposal should be discussed with the appropriate chairpersons, deans, or curriculum committees and their responses noted in the proposal.** The proposal has been discussed with the Chair and faculty of the School of Business. The issues and response to the issues have been attached to this document.

   b. **Cite course(s) to be deleted if the new course is approved. If no deletions are planned, note the exceptional need to be met or the curricular gap to be filled.** No courses will be deleted. This course will help the Applied Engineering and Technology curriculum better meet the requirements of our accrediting body as well as providing our students with the appropriate skills for project cost evaluation and management.

4. **Impact on Program(s):**

   a. For undergraduate programs, specify whether this course will be required for a major or minor or used as an approved elective. This course will be an approved elective.

   b. For graduate programs, specify whether this course will be a core requirement for all candidates in a degree or certificate program or an approved elective.

   If the proposed course changes a major, minor, or certificate program in or outside of the department, you must submit a separate proposal requesting that change along with the course proposal. Provide a copy of the existing program in the current catalog with the requested changes noted.

**PART V: IMPLEMENTATION**

1. **Faculty member(s) to whom the course may be assigned:** Dr. Thomas McDonald, Dr. Rigo Chinchilla or other qualified faculty.

   If this is a graduate course and the department does not currently offer a graduate program, it must document that it employs faculty qualified to teach graduate courses.

2. **Additional costs to students:** No additional cost to students

   Include those for supplemental packets, hardware/software, or any other additional instructional, technical, or technological requirements. (Course fees must be approved by the President’s Council.)
3. Text and supplementary materials to be used (Include publication dates):

PART VI: COMMUNITY COLLEGE TRANSFER

If the proposed course is a 1000- or 2000-level course, state either, "A community college course may be
judged equivalent to this course" OR "A community college course will not be judged equivalent to this
course." A community college course will not be judged equivalent to a 3000- or 4000-level course but may
be accepted as a substitute; however, upper-division credit will not be awarded.

PART VII: APPROVALS

Date approved by the department or school: November 8, 2008

Date approved by the college curriculum committee: April 12, 2010

Date approved by the Honors Council *(if this is an honors course)*:

Date approved by CAA: April 29, 2010

*In writing-active courses*, frequent, brief writing activities and assignments are required. Such activities -- some of which are to be
graded – might include five-minute in-class writing assignments, journal keeping, lab reports, essay examinations, short papers, longer
papers, or a variety of other writing-to-learn activities of the instructor's invention. Writing assignments and activities in writing-active
courses are designed primarily to assist students in mastering course content, secondarily to strengthen students' writing skills. In
writing-intensive courses, several writing assignments and writing activities are required. These assignments and activities, which are to
be spread over the course of the semester, serve the dual purpose of strengthening writing skills and deepening understanding of course
content. At least one writing assignment is to be revised by the student after it has been read and commented on by the instructor. In
writing-intensive courses, students’ writing should constitute no less than 35% of the final course grade. In writing-centered courses
(English 1001G, English 1002G, and their honors equivalents), students learn the principles and the process of writing in all of its stages,
from inception to completion. The quality of students' writing is the principal determinant of the course grade. The minimum writing
requirement is 20 pages (5,000 words).