Cover Sheet: Request 11022

EGS 4XXX - Fundamentals of Engineering Project Management

Info

Process	Course|New|Ugrad/Pro
Status	Pending
Submitter	Mcelroy,William J mcelrowj@eng.ufl.edu
Created	6/14/2016 11:46:12 AM
Updated	11/8/2016 1:43:34 PM
Description of request	This course provides engineering students with a comprehensive understanding of how to plan, optimize and efficiently manage projects (or tasks) to implement products, services or developments. This includes building the structure, processes, components and linkages with a team for successful project delivery within schedule, budget and quality requirements.

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	ENG - Engineering - General 011940001	van Oostrom, Hans		8/22/2016
Deleted Rev_FEPM Syllabus 5.pdf					6/14/2016
College	Approved	ENG - College of Engineering	Caple, Elizabeth		10/17/2016
No document changes					
University Curriculum Committee	Comment	PV - University Curriculum Committee (UCC)	Case, Brandon	Added to the November agenda.	10/25/2016
No document changes					
University Curriculum Committee	Pending	PV - University Curriculum Committee (UCC)			10/25/2016
No document changes					
Statewide Course Numbering System					
No document changes					
Office of the Registrar					
No document changes					
Student Academic Support System					
No document changes					
Catalog					
No document changes					
College Notified					
No document changes					

Course|New for request 11022

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Submitter: Mcelroy,William J mcelrowj@eng.ufl.edu
Created: 6/14/2016 3:35:38 PM
Form version: 5

Responses

Recommended PrefixEGS
Course Level 4
Number XXX
Lab Code None
Course Title Fundamentals of Engineering Project Management
Transcript Title Fund. Engr Proj Mgmt
Effective Term Earliest Available
Effective Year Earliest Available
Rotating Topic?No
Amount of Credit3

Repeatable Credit?No

S/U Only?No
Contact Type Regularly Scheduled
Degree Type Baccalaureate

Weekly Contact Hours 3
Category of Instruction Joint (Ugrad/Grad)
Delivery Method(s) On-Campus
Course Description This course provides engineering students with a comprehensive understanding of how to plan, optimize and efficiently manage projects (or tasks) to implement products, services or developments. This includes building the structure, processes, components and linkages with a team for successful project delivery within schedule, budget and quality requirements.
Prerequisites junior/senior level standing
Co-requisites none
Rationale and Placement in Curriculum In today's cost-competitive and often complex work environment, engineers are very likely to be called upon to manage projects (or tasks) that implement their stakeholders', or company's products, services, or developments in an optimized, efficient manner. This course provides students with skills and knowledge in organizing multi-disciplinary teams to achieve successful project outcomes; enables students to understand the key components of a successful project and to embed the necessary processes, components, and attributes into execution of their projects; allows practice of communication skills to organize project teams; and allows students to develop project trouble-shooting capabilities through careful analysis and root cause determinations. Course completion is one of alternatives for obtaining the Engineering Leadership Certificate, the Engineering Entrepreneurship Certificate, or the Engineering Innovation Certificate to be offered by the Herbert Wertheim College of Engineering. The course meets the required level of contact hours of formal project management education for the Project Management Institute's Certified Associate in

Project Management (CAPM). Meeting this requirement enables the student to undertake the certification examination for this level (along with the student's degree certification).This course has been taught under the EIN 4905 and ESI 6900 designations

Course Objectives Specific learning objectives are: To prepare engineering students to plan, develop, lead, manage, and successfully implement and deliver projects within their chosen practice area. This involves an in-depth study of the various components, phases, and attributes of a project. Coupled with the theory of project management, students will practice and gain hands-on experience with the implementation and use of most key components in a team setting, using the "flipped" classroom practice of implementing sections on theory through team-based and individual exercises that analyze case studies and real-life examples. Students will have the opportunity to link their knowledge and skills together to understand the basis of a successful project.

Course Textbook(s) and/or Other Assigned Readinga. Title: A Guide to the Project Management Body of Knowledge (PMBOK Guide)

b. Author: Project Management Institute, Inc.

c. Publication date and edition: 2013, Fifth Edition

d. ISBN number: 978-1-935589-67-9

The PMBOK Guide will be available free of charge to all enrolled students through the Course Reserve tab in Canvas. In addition, students should expect to have additional reading assignments that will be posted on the Course Reserve tab (comprised of journal articles) and other handouts (posted on the modules tab) that support various project components under discussion at the time The journal articles and handouts are available free of charge to all enrolled students.

Weekly Schedule of Topics WK Discussion Topics and Class Activities

1 Course Overview, Basic Concepts Key concepts, definitions, perspectives on key historical PM developments and projects

2 Self-Awareness, PM as a Leader and Manager; Self-assessment to develop situational leadership awareness and connections to PM leadership and management concepts

3 Contracts and agreements; terms and conditions definitions/components

4 Risk Management; developing a risk management plan

5 Quality Control/Assurance; understanding basic concepts

6 Safety/Customer Service Key components and concepts

7 Chartering and Endorsement Concepts; practicing the process to get your team on the 'same sheet of music' and gain support from everyone involved

8 Work Breakdown Structures; Understanding and brainstorming a simple project layout

9 Costing and pricing a project; Estimating both the cost and price for a project and maximizing the difference (margin enhancement)

10 Project Execution Plans; Bringing your planning altogether into one useful document

11 Cost and Schedule controls;Techniques to manage the costs and schedule of your project

12 The Hoover Dam construction or onsite campus project site visit; Case study of an early complex project/ongoing campus construction project

13 Earned Value Management; Project monitoring/trouble-shooting techniques including a team project

14 Earned Value Management (cont'd)

15 Closeout/lessons learned; Closeout techniques and learning path forward

16 Finals

Grading Scheme Undergraduate students:

- Individual and team assignments: 35% of total class points (comprised of up to 10

assignments)
- Unscheduled quizzes (up to 5) and scheduled exams (up to 4) comprising 65% of the student's grade

Graduate students:
- Individual and team assignments (up to 10) plus assignments in a specific case study (up to 5): 50% of total class points
- Unscheduled quizzes (up to 5) and scheduled exams (up to 4) comprising 50% of the student's grade.

The final class grade will be based on the student's performance on class assignments within the grade scale for the class. The instructor reserves the right to establish a 'curve' for the class, depending on class-specific performance as indicated in the table below:

A = 90 or above C = 70 - 73
A- = 87 – 89

C- = 67 - 69
B+ = 84 – 86

D+ = 64 - 66
B = 80 – 83

D = 60 - 63
B- = 77 – 79

D- = 57 - 59
C+ = 74 – 76

E = 56 or below

Graduate students will be assigned a semester-long problem case study. Periodic assignments and submittals will be required to correspond with PM concepts developed in class.

For undergraduate students, a grade of C- will not be a qualifying grade for critical tracking courses. In order to graduate, students must have an overall GPA and an upper-division GPA of 2.0 or better (C or better). Note: a C- average is equivalent to a GPA of 1.67, and therefore, it does not satisfy this graduation requirement. For more information on grades and grading policies, please visit:
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

For graduate students, an overall GPA of 3.00 truncated and a 3.00 truncated GPA in their major (and in the minor, if a minor is declared) is needed for graduation. For more information on grades and grading policies, please visit:
http://gradcatalog.ufl.edu/content.php?catoid=4&navoid=907#grades

Additional Links and Policies Attendance and Expectations: Student attendance at class sessions is not mandatory. Scheduled exams and assignments and unscheduled lecture quizzes may be made up only through excused absences by the instructor in accordance with university policy. Required readings have been specifically chosen to provide a certain insight or skill; questions regarding reading content will be included in the exams. Unless stated otherwise, assignments are to be submitted via Canvas by the stated deadline. Late submissions are not accepted, subject to the statements above and the policies of the undergraduate (https://catalog.ufl.edu/ugrad/current) or graduate (http://gradschool.ufl.edu/students/catalog.html) catalogues, as appropriate.

Students are expected to actively participate in all class discussions and group project assignments.

Make-up Exam Policy: Makeup exams will only be allowed at the discretion of the instructor, subject to the conditions stated above and the policies of the undergraduate (https://catalog.ufl.edu/ugrad/current) or graduate (http://gradschool.ufl.edu/students/catalog.html) catalogues, as appropriate.

Honesty Policy: All students admitted to the University of Florida have signed a statement of academic honesty committing themselves to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action. This statement is a reminder to uphold your obligation as a UF student and to be honest in all work submitted and exams taken in this course and all others.

Accommodation for Students with Disabilities: Students requesting classroom accommodation must first register with the Dean of Students Office. That office will provide the student with documentation that he/she must provide to the course instructor when requesting accommodation.

UF Counseling Services: Resources are available on-campus for students having personal problems or lacking clear career and academic goals. The resources include:

- UF Counseling & Wellness Center, 3190 Radio Rd, 392-1575, psychological and psychiatric services
- Career Resource Center, Reitz Union, 392-1601, career and job search services.

Software Use: All faculty, staff and student of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Instructor(s) John W. Caldwell, PhD, Adjunct Instructor (retired Vice-President, CH2M HILL)

Syllabus
Fundamentals of Engineering Project Management
(Currently EIN 4905 and ESI 6900)

1. **Catalog Description:** This course provides engineering students with a comprehensive understanding of how to plan, optimize and efficiently manage projects (or tasks) to implement products, services or developments. This includes building the structure, processes, components and linkages with a team for successful project delivery within schedule, budget and quality requirements.

2. **Credit Hours:** 3
   Graduate students will not receive graduate credit for taking the undergraduate version of the class. They can enroll in the undergraduate section, but the credits will not count toward the degree.

3. **Pre-requisite:** None

4. **Course Objectives:** In today's cost-competitive and often complex work environment, engineers are very likely to be called upon to manage projects (or tasks) that implement their stakeholder's, or company's products, services, or developments in an optimized, efficient manner. This course provides students with skills and knowledge in organizing multi-disciplinary teams to achieve successful project outcomes; enables students to understand the key components of a successful project and to embed the necessary processes, components, and attributes into execution of their projects; allows practice of communication skills to organize project teams; and allows students to develop project trouble-shooting capabilities through careful analysis and root cause determinations.

   Specific learning objectives are: To prepare engineering students to plan, develop, lead, manage, and successfully implement and deliver projects within their chosen practice area. This involves an in-depth study of the various components, phases, and attributes of a project. Coupled with the theory of project management, students will practice and gain hands-on experience with implementation and use of key components in a team setting. This will be accomplished using the "flipped" classroom practice of implementing sections on theory through team-based and individual exercises that analyze case studies and real-life examples. Students will have the opportunity to link their knowledge and skills together to understand the basis of a successful project.

5. **Contribution of course to meeting the professional component:** N/A as the course is not specific to a major under ABET purview. However, the course meets the required level of contact hours of formal project management education for the Project Management Institute's Certified Associate in Project Management (CAPM). Meeting this requirement enables the student to undertake the certification examination for this level (along with the student's degree certification).

6. **Relationship of course to program outcomes:** N/A as course is not specific to a major under ABET purview.

7. **Instructor:** John W. Caldwell, PhD, Adjunct Instructor (retired Vice-President, CH2M HILL)
    a. Office location and hours: On-campus (NEB) by appointment only during course days
    b. 352-392-7047 (Offices of the Engineering Leadership and Innovation Institutes); or cell 949-500-4037
    c. E-mail address: johnwcaldwell@ufl.edu
    d. Web site: UF course Canvas web site

8. **Teaching Assistant:** None

9. **Meeting Times:** TBD

10. **Class schedule:** The course will be delivered in a single weekly 3-hour session (with 15 minute breaks every 50 minutes). The first session will consist of review and testing of understanding of the previewed lecture material (in the 'flipped' classroom mode). The following two sessions will involve practical application of the theories learned through discussion and case study analysis as learning assignments to be submitted by the student project teams The learning assignments will enable the practical application and demonstration of the session theory.

11. **Meeting Location:** TBD

12. **Material and Supply Fees:** – N/A

13. **Textbooks and Software Required:**

    a. Title: A Guide to the Project Management Body of Knowledge (PMBOK Guide)
    b. Author: Project Management Institute, Inc.
    c. Publication date and edition: 2013, Fifth Edition
    d. ISBN number: 978-1-935589-67-9

    The PMBOK Guide will be available free of charge to all enrolled students through the Course Reserve tab in Canvas. In addition, students should expect to have additional reading assignments that will be posted on the Course Reserve tab (comprised of journal articles) and other handouts (posted on the modules tab) that support various project components under discussion at the time. The journal articles and handouts are available free of charge to all enrolled students.

    Software:
    - Microsoft Excel

- Ability to create Adobe PDF files

14. Recommended Reading: assigned in class as applicable

15. Course Outline: *Fundamentals of Engineering Project Management* is designed to introduce engineering students (both undergraduate and graduate) to the concepts, theories and applications of project management in multiple professional settings. Students will obtain a strong team-based and individual, hands-on, learning experience through a course curriculum consisting of supporting lectures on the various theories of project management and the application of these theories through team-based learning activities and assignments utilizing case studies and role-playing. The course will generally be delivered according to the following schedule (subject to revision by the instructor):

Week	**Discussion Topics**	**"Flipped Classroom" activities or continued discussions**
1	Course Overview, Basic Concepts	Key concepts, definitions, perspectives on key historical PM developments and projects
2	Self-Awareness, PM as a Leader and Manager	Self-assessment to develop situational leadership awareness and connections to PM leadership and management concepts
3	Contracts and agreements	Terms and conditions definitions/components
4	Risk Management	Developing a risk management plan
5	Quality Control/Assurance	Understanding basic concepts
6	Safety/Customer Service	Key components and concepts
7	Chartering and Endorsement Concepts	Practicing the process to get your team on the 'same sheet of music' and gain support from everyone involved
8	Work Breakdown Structures	Understanding and brainstorming a simple project layout
9	Costing and pricing a project	Estimating both the cost and price for a project and maximizing the difference (margin enhancement)
10	Project Execution Plans	Bringing your planning altogether into one useful document
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12	The Hoover Dam construction or onsite campus project site visit	Case study of an early complex project/ongoing campus construction project
13	Earned Value Management	Project monitoring/trouble-shooting techniques including a team project
14	Earned Value Management	cont'd
15	Closeout/lessons learned	Closeout techniques and learning path forward
16	Finals	

16. Attendance and Expectations: Student attendance at class sessions is not mandatory. Scheduled exams and assignments and unscheduled lecture quizzes may be made up only through excused absences by the instructor in accordance with university policy. Required readings have been specifically chosen to provide a certain insight or skill; questions regarding reading content will be included in the exams. Unless stated otherwise, assignments are to be submitted via Canvas by the stated deadline. Late submissions are not accepted, subject to the statements above and the policies of the undergraduate (https://catalog.ufl.edu/ugrad/current) or graduate (http://gradschool.ufl.edu/students/catalog.html) catalogues, as appropriate.

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