Course Description:
This course is an elective course in the Engineering Management Program curriculum.
Software project management is concerned with knowledge about the planning, organization and monitoring of all software life-cycle phases. The management of software development projects is critical for ensuring that:

- the solutions or applications are what the organization needs and wants;
- the work is coordinated within and across teams;
- correct resources are available when necessary and are not sitting idle when not needed;
- project work is divided appropriately;
- communication is facilitated amongst and between team members, management, users, and other stakeholders whether co-located or widely disbursed; and
- project progress, costs, schedule, and deliverables are accurately controlled and documented.

In this course, we will explore different software project management topics from project concept through development and delivery, based upon best practices. We will explore how to manage projects that use different development methodologies (e.g., waterfall, iterative, or agile methodologies) or a blend of development methodologies. We will also dive more deeply into certain topics in project management, such as Change, Risk, and Portfolio Management; managing global projects and those with virtual teams; and look at some of the reasons why projects fail and what we can do to either keep our project from failing or how to salvage a project going south.

Throughout the course, we will be exploring and applying project management principles through in class discussions and business case studies. And as this is a Project Management class, you will be expected to work in project teams on several/many of your assignments. Plan for this and make sure you allow enough time to meet, discuss, and finish them together.

Instructor Information:
Instructor: Dr. Megan R MacMillan
Phone: 720.938.3028 (c) / 303.661.0264 (h)
Email: megan.macmillan@colorado.edu
Office Hours: by appointment

Books:
- There are 3 books for this course:

Required Texts

There will also be several articles that will be assigned; keep an eye on the website for details.

The following are suggestions for other books that you may or may not want to purchase. The first book is full of information about the differences of software project management from regular software management. The second book maps the PMBOK to Agile Development and Agile Project Management practices. The third book is an interesting book discussing how to manage agile teams (project managers, scrum masters, product owners, and developers). And the 4th book is a good book discussing ways to scale Agile methods throughout the organization.

- **The Software Project Manager’s Bridge to Agility**, Michele Slinger and Stacia Broderick, Addison-Wesley Professional, 2008.

Expectations:
Please check the website for ongoing details for this course. Changes may be made throughout this course based upon the background and interest of the students as well as whether we are able to engage any outside speakers to come speak with you.

For each topic covered, it will be the student’s responsibility to:

- Have read any assigned materials before the lecture. This includes monitoring the corresponding class website to ensure that you are up-to-date with any changes that may happen during the course of the semester.
- Attend (or watch) and participate in classroom discussions. This can happen both synchronously during class and asynchronously on the discussion board or through email.
- Be respectful of the others in the classroom and those online. Listen to the opinions of others with an open mind.
- Be on time to class and turn in assignments on time.
- Be part of making this a successful course through:
  - bringing topics, questions and ideas for improving our learning experience;
  - bringing knowledge and experience to the discussion boards with other students;
  - bringing ignorance and inexperience to the discussion boards with other students (if you don't know how to do or handle something or have questions of your fellow students, ask on the discussion boards; there will be many students with a lot of experience who will be happy to help and perhaps learn something while helping);
  - bringing your best to class (or your viewing of the class)—listen thoughtfully and ask questions during the lectures; remember, some digressions from the lectures will be more relevant to everyone’s learning than the lecture. Also remember that some digressions are just digressions and will not be relevant or beneficial to others. Those things we should discuss out of class.

It will be my responsibility to:

- Come to class prepared, ready to teach, and ready to listen to the ideas, experiences and knowledge of the students in the class.
- To keep the website up-to-date.
- Be available for additional questions and comments of the students both inside and outside of class.
• Be respectful of the students, both in the classroom and online and to listen to the opinions of others with an open mind.
• Be prepared to make changes to the course as needed to keep the course the most relevant for the students in class.

Requirements:
• Classes will be conducted Mondays from 5:30 pm to 8:00 pm during the fall semester of the 2013-2014 school year.
• There will be homework assigned during or at the end of most of the lectures; in general, these will be due at the beginning of the lecture two weeks after they have been assigned.
• You will be expected to participate in classroom discussions (if you are in class or participating over GoToMeeting) and online in the
• There will be 2-3 case studies assigned during the semester and several homework assignments.
• There will be a final project / paper worth 150 points.
• You are required to use your CU student e-mail account on the course website, and in communicating with the instructor. All of your e-mail from professors and the university will be sent to your CU e-mail account. You can choose to also redirect your CU email to an alternate (work/personal) email account. For assistance in activating your email account and forwarding email, contact the Help Desk at 303-735-HELP or Help@colorado.edu.
• You will need to register and use eCollege as part of this class. You are expected to add to the discussions every week as part of your involvement in this class.
• When you register on ECollege, you can set your e-mail address to be sent from the course website to any address you choose. I know it can be a hassle to check multiple e-mail locations on a daily / regular basis, but you must use your CU e-mail address for this purpose (e.g. firstname.lastname@colorado.edu). If you do not know your assigned CU address, contact ITS (dial 5-HELP from any on-campus phone) and they will provide it to you. The EMP has standardized the use of the colorado.edu address as the e-mail address by which we will communicate with students.
(Additional information associated with the use of the ECollege website and accessing videos of the lectures are available on the ECollege website, under the Course Home section.)

Grading:

Final Project/Paper: 150 points (Final -100 points; mid-term write-up-50 points)
Case Studies: 100 points
Exercises: 100 points
Discussion / Journal: 50 points

Homework / Assignment Guidelines

- All case studies, homework, and your final paper/project must be submitted via e-college on or before the due date in order to receive full credit. Late submission will be penalized unless prior arrangements have been made with the instructor.
- All homework and case studies should be submitted in one of the following formats: Microsoft Word, Microsoft PowerPoint, or Adobe PDF.
- All homework and case studies must have a cover page that includes your name and the assignment number. Please add a table of contents to all case studies and to your final project / paper. You will get one reminder on this; after that, you will lose points on your assignments.
- My grading will take into account punctuation, grammar, spelling, and the format of your work. In business, your work is viewed more critically if there are errors, if it is difficult to read, or if it looks non-professional. I will, too.

Schedule:

The schedule follows the proposed and tentative lecture topics. However, some topics may be added or dropped based upon student background and experience as well as interests that arise during the semester and whether we are able to get any guest lectures. Please see the schedule link on the course home.

<table>
<thead>
<tr>
<th>Date</th>
<th>Subject</th>
<th>Readings and Assignments</th>
<th>What is due this class</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/26/2013</td>
<td>Introduction:</td>
<td>Making Things Happen: Chapter 1: A Brief History..., Chapter 2: The truth about schedules; and Chapter 3: How to figure out what to do</td>
<td>Output from Class</td>
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</tbody>
</table>
### Class 1

**Overview**
- Project Management Fundamentals
- PM Market
- Classic Mistakes

**Effective Project Management: Introduction. Part I: Chapters 1 – 2.**

**Assigned Exercise: #1**
1. What is your background in Software Engineering and in Project Management?
2. What development methodologies are you most comfortable with and use at work?
3. What do you *want* from this class?
4. What do you *need* to get out of this class?

**Discussion:** Read the following article and discussion following. Be part of the discussion with your fellow students here on eCollege (rather than where the article resides).

http://www.techrepublic.com/blog/project-management/project-managers-views-on-the-value-of-a-pmp-certification/6273?tag=nl.e053&amp;cid=e053&amp;ttag=e053&amp;ftag=TRE23f0416

**Prepping for Your Final:** Start thinking about a topic in Software Project Management that you are interested in. You will turn that topic into a final project / research paper for the term. Example ideas / areas will be posted up on the eCollege website. By the class after Labor Day, you will need to have determined an area / topic and post it for instructor approval.

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### Exercise

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<tr>
<th>Date</th>
<th>Topic</th>
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<tr>
<td>9/2/2013</td>
<td><strong>LABOR DAY – NO CLASS</strong></td>
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<tr>
<td>9/9/2012</td>
<td><strong>Overview of Software Development Methodologies and How Project Management fits in:</strong></td>
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</table>

**Effective Project Management: Part II: Chapters 9 – 10.**

**Making Sense of Agile Project Management: Chapter 7: Fundamental Principles behind SDLC Models, Chapter 8: Software Development Life Cycles.**

**Articles On eCollege:**
[TBD: SOFTWARE DEVELOPMENT METHODOLOGIES]

**Due:**
- Exercise #1
  - Upload on eCollege in the Lecture ID Discussion Area.
- Topic / area for Final paper / project uploaded to instructor for approval.
### Assigned Exercise #2:
Think about a project that you are currently involved with or have been recently. Describe what kind of software development methodology(s) were used, the methodologies you as project manager used, and the different things that went well and that did not go well. Write this in bullet format and along the ideas of a “Lessons Learned” document (see example on eCollege).

### Website:

**Effective Project Management: Part II: Chapters 11 – 12.**

**Making Things Happen:** Chapter 4: Writing the good vision; Chapter 5: Where ideas come from; and Chapter 6 What to do with ideas once you have them


**Assigned Case Study #1:**
Create a project team of 3-4 people. See Case Study 1 on the website for particulars.
Use Chapter 5 from "Making Sense of Agile Project Management" and a real project / project team / organization (one that a member of the team was part of in the past or is currently). Develop an Action Plan for moving to Agile or for scaling it throughout your organization.

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<thead>
<tr>
<th>Date</th>
<th>Classroom</th>
<th>Topic</th>
<th>Resources</th>
<th>Due</th>
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</table>
**Making Sense of Agile Project Management: Chapter 3 & 4.**  
Readings on Website: Cost Estimation  
Applied Software Management - Estimation | Case Study #1 (assigned 9/17/2012) |
| 10/14/2013 | Class 7   | Communication, Negotiation Technique, Risk Management                  | **Readings on Website:**  
Negotiation Tips for Project Managers: Learning From Historic Cases  
Negotiation Constellations  
A Framework For Software Project Risk  
Software Risk Management--Importance and Practices  
Top Ten Lists of Software Project Risks  
PEOPLE FACTORS IN AGILE SOFTWARE DEVELOPMENT AND PROJECT MANAGEMENT | Mid-term summary of project. |
| 10/21/2013 | Class 8   | Communication, Negotiation Technique, Risk Management                  | **Assigned Exercise #3:**  
Read the Agile Exercise linked to here and answer the questions at the end. | Nothing due. |
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<tr>
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<th>Class</th>
<th>Topic</th>
<th>Chapter(s)</th>
<th>Due</th>
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<tr>
<td>10/28/2013</td>
<td>Class 9</td>
<td><strong>Assigned Exercise #4:</strong> Create a team of 3 to 5 (or stay with your old team, your choice). You work for Google. Create a new product extension with the ultimate search and shopping experience (searching for the item you want everywhere on the net (think kayak.com or hotels.com but for any consumer product). It must be nothing like what is on the market today, have a high quality and simple interface, and have lots of bells and whistles. Create the vision (elevator pitch), a product box (like a software box from Microsoft of Adobe), a press release, and a Product Roadmap with 3 releases.</td>
<td>Case Study #2</td>
<td>11/5/2013</td>
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<td>11/5/2012</td>
<td>Class 10</td>
<td><strong>Making Things Happen:</strong> Chapters 12 - 15</td>
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<td>Exercise #3</td>
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<td><strong>Effective Project Management:</strong> Chapter 15.</td>
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<td><strong>Readings on Website:</strong> TBD</td>
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<td><strong>Assigned Exercise #5:</strong> Using the elevator pitch from Case 2, Create Stories / Scenarios and estimate their size, then create a release plan. Use Rally or another software product to plan. A list of tools can be found here: <a href="#">Tools for Agile Planning</a></td>
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<td><strong>Effective Project Management:</strong> Chapter 17.</td>
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<td><strong>Making Things Happen:</strong> Part II: Skills. Chapters 9-11</td>
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<td>Class 12</td>
<td><strong>Effective Project Management:</strong> Chapter 16.</td>
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<td><strong>Making Things Happen:</strong> Chapter 16.</td>
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<td>11/25/2013</td>
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<td><strong>THANKSGIVING</strong></td>
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<td>WEEK-NO CLASS</td>
<td>Presentations of Final Project / Paper</td>
<td>Due: Final Project</td>
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<td>12/2/2013 Class 13</td>
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<td>Presentations of Final Project / Paper</td>
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