# MECH 501 Engineering Project and Program Management Syllabus

## Instructor Information:
Instructor: Ann Batchelor  
Course Point of Contact  
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**Biography:**  
Ann H. Batchelor, Associate Director of Colorado State University Ventures, Systems Solutions Group, has extensive industrial experience in technical program management, production, manufacturing, lean engineering, life cycle management, test and analysis, systems engineering, transitioning technology into manufacturing, proposal management and technical writing. Experience includes Associate Director of CSUV, SENSIAC deputy director and senior research scientist at the Georgia Tech Research Institute, 20 years in engineering management in the defense industry as chief scientist, systems engineer, Director of Engineering, and Director of Program Management. She is a past certified program management professional by the Project Management Institute (PMI), a Military Sensing Fellow (DOD Informational and Analysis Center for Military Sensing), industrial instructor on program management, risk and opportunity management courses, former President elect of the International Council on Systems Engineering (INCOSE) Atlanta Chapter, and a former instructor at GT for infrared and visible signature suppression course.

## Texts:

**Auxiliary texts:**
- Guide to the Engineering Management Body of Knowledge (ASME Press); Guide to the Project Management Body of Knowledge (PMBOK) (PMI)
- Guide to the Engineering Management Body of Knowledge (ASME Press); Guide to the Project Management Body of Knowledge (PMBOK) (PMI)
- INCOSE

## Course Description:
College of Engineering: MECH 501 Engineering Project and Program Management

## Course Prerequisite:
- Bachelor’s degree in technical field

## Credit Hours:
3 hours
### Course Objectives or Course Learning Outcomes:

- Understand basic project and product development management
- Understand and practice building a team – and being a team member
- Understand planning, earned value analysis, and budgeting
- Understand scheduling techniques, budget implications and budget/funding timing
- Understand Product and Project Cycles,
- Understand Total Quality Management (TQM), Design to Cost, Design for Six Sigma
- Identify problems, understand risk management, use root cause analysis techniques
- Understand the tradeoffs of Cost-Schedule-Performance (and Quality)
- Have a good understanding of the PMBOK and EMBOK

### Teaching Strategies:

Teaching strategies for this course will be lecture, class discussions, demonstrations, hands-on practice, guided practice, projects, video, web based (RamCT), guest speakers,

### Course Policies and Procedures:

#### Classroom (Online, Ground, Blended) Procedures:

This course will adhere to the CSU Academic Integrity Policy as found in the General Catalog, the Graduate and Professional Bulletin, and the Student Conduct Code.

#### Attendance:

**on-line participation required at a minimum**

#### Academic Honesty:

*It is very important for engineers to work together in groups and students are encouraged to collaborate with their classmates. This allows students to cover the material in more depth and improves communications skills. It is even acceptable (at least in this class) to work on homework assignments together. However, putting your name on an assignment and turning it in for a grade is an implicit statement that you completely understand each of the concepts that are demonstrated in the assignment. Presenting work that is not original or that you do not understand is justification for failing the course and/or facing disciplinary action by the university.*

**CSU Student Honor Pledge**

"I have not given, received, or used any unauthorized assistance."

Please see:

http://tilt.colostate.edu/integrity/

*for more information on the CSU policy regarding academic integrity.*

Violations of the university’s academic integrity standards include, but are not limited to:

- **Cheating**—includes using unauthorized sources of information and providing or receiving unauthorized assistance on any form of academic work or engaging in any behavior specifically prohibited by the faculty member.

- **Plagiarism**—includes the copying of language, structure, ideas, or thoughts of another, and representing them as one’s own without proper acknowledgment.

- **Unauthorized Possession or Disposition of Academic Materials**—includes the unauthorized selling or purchasing of examinations or other academic work;
stealing another student’s work; unauthorized entry to or use of material in a computer file; and using information from or possessing exams that an instructor did not authorize for release to students.

- Falsification—includes any untruth, either verbal or written, in one’s academic work.
- Facilitation—includes knowingly assisting another to commit an act of academic misconduct.

**Late work & Educational Responsibility:** All assignments must be completed by the due date unless an alternate due date has been previously approved or documentation has been provided for extreme circumstances. It is the student's responsibility to communicate with the instructor about extreme circumstances or questions concerning the assignment and their due dates.

**Etiquette (Classroom and/or Online):** A majority of class time is spent sharing opinions and sharing information. Therefore, it is of utmost importance to communicate with courtesy and professionalism. Professional Courtesy includes respecting others' opinions, being courteous and respectful, and working together in the spirit of cooperation. Sexist, heterosexist, and racist language should not be used when communicating in the course. Discussions and assignments will be graded on quality and professionalism.

**Gradebook:** Grades will be posted within one week after the scheduled due date. Gradebook questions should not be asked before the one-week window.

**E-mail Procedure:** All e-mail sent to the instructor for this course should contain the following in the subject line: Course Name and Number, Your Name, Short Description of your question. Please refrain from sending out e-mails to large groups of recipients as to be respectful of others. Also note that the same rules for etiquette in the classroom (as mentioned above) apply to content in an e-mail. Sending e-mail that violates the rules mentioned above can result in disciplinary action taken by the school.

**Academic Policies**

**Discussion Policy (classroom and online):** To be eligible for full credit in the discussion assignments each week, students should respond to the original question by Wednesday of the current week and post an additional two responses by Sunday at Midnight MT. To ensure the integrity of discussions, students are not allowed to post all 3 responses on one day. The purpose of the discussions is to solicit feedback from others in the course in addition to responding to other students. Posting throughout the week enables a student to have a richer experience.

Students should demonstrate quality posting based on the following thread criteria:

- Demonstration of having read the material by volunteering answers to questions and seeking clarification of points in the readings
- Asking questions that extend the thinking of the class and the instructor
- Contribution of relevant examples that support and justify claims
- Sharing experiences when asked or when relevant
- Maintaining a positive attitude and professional courtesy
- Bringing unique thought, insight and depth to the topic at hand
Course Policies and Procedures: (cont.)

- Using proper grammar, spelling, punctuation and citations where appropriate

| DISCUSSION GRADING RUBRIC: Maximum of 10 points possible per threaded discussion. * |
|---|---|---|
| **Subject Knowledge** | **Quality of Interaction, Organization, Creativity and Insight** | **Mechanics (Punctuation, Sentence Structure and Spelling)** |
| **Outstanding** | Student demonstrates full knowledge of topic and is able to answer all class questions with explanations and elaboration. | Student brings unique thought, insight and depth by providing justification and supporting examples. Student maintains professional courtesy. | Post is free of mechanical errors. |
| **Average** | Student is at ease with some or most aspects of the topic. | Student provides some insight but does not provide adequate support for ideas. | Post has some mechanical errors. |
| **Below Average** | Student does not demonstrate an understanding of the topic. | Student does not provide insight and/or fails to maintain professional courtesy. | Post has many mechanical errors. |

*Note: Late postings in threaded discussions will not be accepted for credit. *Note: The Introduction thread at the beginning of the course is an exception to this rule. Introduction Threaded Discussions are worth 1 point and the student is required to post only one time unless otherwise stated on course schedule.

Grading Policy: Projects and assignments will be submitted through RamCT as electronic files or through the online course tools (quizzes, etc.)

Assignments will not be accepted by instructors via email. All assignments related to class must be posted in the RamCT course in order to be graded.

Grading Scale: Students will be evaluated and assessed using quizzes, lab exercises, tests, projects, written and oral reports, and presentations. This class uses a traditional A-F (4.0-0.0) grading system, with A representing excellent work, B representing above average work, C designating average work, D designating below average work, and F indicating failure by a student. Standard distribution curve will be used.

Quizzes: Quizzes are used to enhance the learning experience and for preparation to take certification tests that some students will want to take to enhance their careers.

Course Completion Requirements: Students must achieve a passing grade of C or above by completing all required examinations, submitting all required exercises and projects, and meeting the standards of the school attendance policy.

Classroom Technology Policies: This class will use a variety of supporting technologies within the classroom (virtual and face to face). Etiquette and professional courtesy (as defined above) should be displayed when using these technologies as they are an extension of the classroom.
Exams: This course requires that all exams are proctored. Proctors are individuals who administer the exam process following the guidelines provided by Colorado State University to ensure academic integrity.

In accordance with Colorado State University OnlinePlus proctoring guidelines, you have three options for having exams (print-based or online) proctored for this course. All three options require you to submit a Proctor Identification Form found at [http://www.online.colostate.edu/proctoring/](http://www.online.colostate.edu/proctoring/) at least two weeks prior to the first date the exam is available.

Proctoring Options:

- Work with an eligible proctor external of Colorado State University. Your proctor selection is subject to approval. Please review the eligibility guidelines found on the OnlinePlus website when selecting an external proctor. Any costs incurred due to using an external proctor are your responsibility.
- Take the exam at an OnlinePlus facility in Fort Collins or Denver, or at the University Testing Center (UTC) on-campus. Schedule an appointment at least three days before you need to take your exam. OnlinePlus offices do not charge for proctoring services. Contact OnlinePlus at (970) 492-4704 (Fort Collins) or (303) 573-6318 (Denver) or the UTC at (970) 491-6498 for more information.
- Use ProctorU, an online proctoring service, which requires a webcam and microphone. Schedule an exam with ProctorU at least four days before you need to take your exam. The cost for using ProctorU is included in the cost of the course.

It is your responsibility to select an eligible proctor, schedule exams with your proctor, and abide by all rules for bringing only appropriate materials into the testing area. Mobile or other electronic devices are strictly prohibited. You will need to provide photo identification to your proctor prior to taking any exam. Appropriate identification includes: driver’s license, CSU Student ID, passport, or other government issued photo identification.

Visit the OnlinePlus website at [http://www.online.colostate.edu/answers/services/proctoring.dot](http://www.online.colostate.edu/answers/services/proctoring.dot) for more information about your proctoring options and eligible proctors.

Grading:

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<thead>
<tr>
<th>Grade</th>
<th>Course Credit</th>
<th>Numerical Equivalent</th>
<th>Indicates</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>4.0</td>
<td>90-100</td>
<td>Excellent</td>
</tr>
<tr>
<td>B</td>
<td>3.0</td>
<td>89-80</td>
<td>Above Average</td>
</tr>
<tr>
<td>C</td>
<td>2.0</td>
<td>79-70</td>
<td>Average</td>
</tr>
<tr>
<td>D</td>
<td>1.0</td>
<td>69-60</td>
<td>Below Average</td>
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<tr>
<td>F</td>
<td>0</td>
<td>0-59</td>
<td>Failure</td>
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Technical Support:

Having trouble with the multimedia in this course? See the solutions below. Also, it is highly recommended that you access your course via a high-speed Internet connection.

- Problems with opening PDFs?
  - Download Adobe Reader.

- RamCT Blackboard acting funny?
  - Download the correct version of Java for RamCT Blackboard.

- YouTube videos not playing?
  - Download Flash Player.

- Videos not opening or playing on your Mac?
  - Download Windows Media Components for QuickTime.

- Can’t open content created with Microsoft Office Products? Download the following viewers:
  - Word Viewer
  - PowerPoint Viewer
  - Excel Viewer
  - Microsoft Office Compatibility Pack for Word, Excel, and PowerPoint File Formats

- Still having issues:
  - Call the CSU Help Desk at 970-491-7276 or Email Help Desk Support.

You must have speakers installed and working properly on your computer before beginning the course.

You may need access to Microsoft Word, PowerPoint, and/or Excel to complete assignments. If you do not have access to the Microsoft Office applications, you may use one of the following free resources that allow you to save your files with Microsoft Office file extensions (.doc, .docs, .ppt, .xls):

- Google Apps for CSU—a free, outsourced communications suite endorsed by The University Technology Fee Advisory Board (UTFAB)
- Open Office—an open source productivity suite

For Technical Questions: call or email Jeff Dotson, office 970.491.2929; cell 970.217.2290; jeff.dotson@colostate.edu; please put the course number in the subject row.

For RAMCT Tutoring Questions: TBD or contact http://help.ramct.colostate.edu

Expectations of Students:

In class and online students will be given points for class participation.

When responding to a discussion, please note that explanations should be more than just three sentences. One word discussions are not counted.

Students will post at least 3 times a week to the discussion thread.

Students are expected to adhere to all policies and codes of conduct.
**Expectations of Instructors:**

**Communication & Office Hours:** As instructors are the facilitators of the class it is important that they are available to communicate with students on a regular basis. Instructors are required to be available in regularly scheduled and posted office hours and should also provide a phone number for students to leave messages. Instructors will respond to **e-mail and voicemail within 48 hours**.

**Gradebook:** Grades will be posted within one week after the scheduled due date. Gradebook questions should not be asked before the one-week window.

**Online Discussions:** All instructors are required to actively participate and contribute to the discussion in online courses. This interaction is expected to be both substantive and frequent. Instructors are expected to post on at least 3 different days each week of the course.

**Evaluation Breakdown:**

| Assignments & Quizzes & Discussion & Participation | 50 % |
| Midterm | 25% |
| Final Exam | 25% |
| **Total:** | **100 %** |

See RAMCT Folder for Proctoring Instructions for tests

**Term Dates**

**Term Start:** January 21 2015 Wednesday, 5:15-8:00 PM MDT. United Launch Alliance (ULA) Einstein Laboratories Building, Room D200; 7630 South Chester Street, Centennial CO 80122

<table>
<thead>
<tr>
<th>Date</th>
<th>Module</th>
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<tbody>
<tr>
<td>01/21/15</td>
<td>Module 1: Project Management Overview</td>
</tr>
<tr>
<td>01/28/15</td>
<td>Module 2: Organizations and PMOs</td>
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<tr>
<td>02/04/15</td>
<td>Module 3: Project Selection and Portfolio Management</td>
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<td>02/11/15</td>
<td>Module 4: Leadership</td>
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<td>02/18/15</td>
<td>Module 5: Scope and Requirements Management</td>
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<td>02/25/15</td>
<td>Module 6: Team Building, Conflict, and Negotiation</td>
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<tr>
<td>03/04/15</td>
<td>Midterm <strong>Must be proctored</strong></td>
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<tr>
<td>03/11/15</td>
<td>Module 7: Risk and Opportunity Management</td>
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<td>03/18/15</td>
<td>Spring Break</td>
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<tr>
<td>03/25/15</td>
<td>Module 8: Cost Estimation and Budgeting</td>
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<tr>
<td>04/01/15</td>
<td>Module 9: Project Scheduling: Network Diagrams</td>
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<td>04/08/15</td>
<td>Module 10: Project Scheduling: Lagging and Crashing</td>
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<td>Module 11: Critical Chain Project Scheduling</td>
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<td>Module 12: Resource Management</td>
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<td>04/29/15</td>
<td>Module 13: Project Evaluation and Control, Quality Management</td>
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<td>05/06/15</td>
<td>Module 14: Project Closeout &amp; Class Review</td>
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<tr>
<td>05/13/15</td>
<td>Final Exam – Distance students 05/11-17/15 <strong>must be proctored</strong></td>
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Online education requires skills and habits that may be less essential in traditional courses. In order to be successful in your online course you will need:

- **Space**—Establish a comfortable and well-organized physical workplace.
- **Time management skills**—Set personal study and “classroom” time as you would do for a traditional course.
- **Organization skills**—Print out all class material (modules, PowerPoints, assignments, additional resources, and any work you generate) and keep everything in a single location. Maintain electronic backups of all class materials.
- **Communication skills**—Demonstrate a willingness to interact with your instructor and classmates through email, phone calls, discussion boards, and active participation in all class activities.
- **Initiative**—Seek help from your instructor and classmates, ask questions as they arise.
- **Discipline**—Pace yourself, complete all activities and assignments before the due date, follow through on all class requirements to completion.

The more closely you adhere to the recommendations above the greater your chances of having a successful semester and a rewarding online experience.