

**West Virginia University      Department of Industrial and Management Systems**  
**Engineering IENG 445 – Project Management for Engineers**

<b><u>Class Schedule:</u></b>	<b><u>CRN</u></b>	<b><u>Section</u></b>	<b><u>Time</u></b>	<b><u>Day</u></b>	<b><u>Location</u></b>
	84305	001	3:30-4:45	T/TH	ESB-E G78B

**Format:** In-class lecture, class activities and group projects. **Credit Hours:** 3

**Description:** This course provides an introduction to processes, tools, and techniques used to manage engineering projects within the context of an organization. It provides an overview of the engineering project management process, groups, and knowledge areas defined by the Project Management Institute and introduces Microsoft Project as a project planning tool.

**Prerequisite:** ENGR 102

**Instructor** Nelson F. Rekos, ME, MBA, PMP.  
Office: ESB 337 Email: [nfrekos@mix.wvu.edu](mailto:nfrekos@mix.wvu.edu)  
Hours: Tuesday thru Thursday 1-3:30 pm, or by appointment  
Phone Number: (304) 376-5539

**Required Textbooks, Software, and Materials**

- Project Management: The Managerial Process (7<sup>th</sup> Edition) – Erik Larson and Clifford Gray,
  - o McGraw Hill, 2014 - ISBN: 978-0-07-809659-4 Available Online or in the WVU Bookstore
- Microsoft Project 2013 (or later versions will also work)
- FREE 60-DAY TRIAL VERSIONS ARE AVAILABLE:
  - [HTTPS://PRODUCTS.OFFICE.COM/EN-US/PROJECT/PROJECT-ONLINE-PROFESSIONAL](https://products.office.com/en-us/project/project-online-professional),  
[HTTPS://WWW.POWER2PLAN.COM/MICROSOFT-PROJECT/MICROSOFT-PROJECT-DOWNLOAD-FREE-TRIAL](https://www.power2plan.com/microsoft-project/microsoft-project-download-free-trial).
  - NOTE THAT THE TRIAL LENGTH IS SHORTER THAN THE COURSE LENGTH; **DO NOT DOWNLOAD OR INSTALL THE TRIAL UNTIL SEPTEMBER 23<sup>RD</sup>**. SOFTWARE IS PRIMARILY FOR WINDOWS-BASED PCs
- Microsoft Office – Word, Excel, PowerPoint.
- Access to a computer that meets MS Project and eCampus requirements

**Recommended Materials**

- Guide to the Project Management Body of Knowledge (6<sup>th</sup> Edition) – PMI
  - Project Management Institute, 2013 – ISBN: 978-1-93558-967-9. If you plan on pursuing a Project Management Certification such as the CAPM or PMP, this purchase is strongly recommended.
  - CAPM Certification Exam

Students in this course meet the 23 hours of management education requirement to sit for the CAPM exam. Cost for the exam is \$225/PMI member or \$300/non-member. The exam can be taken on-line or at a number of “proctored” site around the country.  
<https://www.pmi.org/certifications/types/certified-associate-capm/exam-prep/changes> . There are 2 sites in Morgantown, WV
- While this course covers the most of the material tested on the CAPM exam, further detailed study is recommended prior to taking the exam. The exam relies heavily on memorization of the specific processes, inputs, outputs, tools, and techniques presented in the PMBOK, and we are covering the material at a much higher, more application-based level. There are many study materials and practice exams available online and at the IMSE office if you wish to prepare further for the exam.

## Course Relationship to Program Educational Outcomes

**ABET Student Outcome 1:** \*An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

**ABET Student Outcome 4:** \*An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.

**ABET Student Outcome 5:** \*An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.

**Methodology.** Utilize a problem-based approach for considering material properties in the selection of materials for manufacturing processes. By the end of the course, the students will be able to understand and apply:

- Define projects, describe the role of an engineering project manager, and illustrate what is meant by the project life cycle. (Outcome 1, 4)
- Model a project management framework, based on the PMBOK, that takes into account various inputs, tools, and techniques, and provides outputs to make decisions about the efficacy of project management processes. (Outcome 4)
- Analyze the project management processes from a real--world case study, using Microsoft Project where appropriate (Outcome 1, 5)
- Relate the similarities between engineering project management and engineering design. (Outcome 1)
- Understanding the differences between traditional project management (waterfall-style) and agile project management (wave-style) and their applications in current market. (Outcome 1)

## Course Policies

- **Communication to Students:** The instructor will communicate to the class via eCampus Course Announcements and WVU email. Please check these daily to receive updates.
- Tentative dates for Labs and Exams, are on the course schedule. There will be Homeworks added during the course.
- Exams will be accessed through eCampus. Exams will be available only for a designated time and will not be re-opened after the deadline for completion has passed. No make-up exams are permitted, except by prior arrangement with the instructor, at the sole discretion of the instructor.
- Assignments are due ***at the beginning*** of class on the due date assigned. It is expected that assignments will be printed out before class starts and handed in on time. Additionally, electronic copies of assignments may be requested. These electronic copies must also be submitted prior to the start of class. **Late assignments will not be accepted or graded.**
- This course contains both team and individual grading elements. All homework and exams are considered individual assignments. Anyone found to be cheating on any individual assignment will be disciplined according to the University's policy on Academic Integrity.
- **Assignment Submission:** All electronically submitted homework or Labs assignments must via the course website. No email submissions will be accepted unless the instructor grants permission in advance. Assignments that deviate from the assigned file format or naming convention are subject to a grade reduction of 10%.

- **Academic Dishonesty:** The integrity of the classes offered by any academic institution solidifies the foundation of its mission and cannot be sacrificed to expediency, ignorance, or blatant fraud. Therefore, I will enforce rigorous standards of academic integrity in all aspects and assignments of this course. For the detailed policy of West Virginia University regarding the definitions of acts considered to fall under academic dishonesty and possible ensuing sanctions, please see the [Student Conduct Code](#). Should you have any questions about possibly improper research citations or references, or any other activity that may be interpreted as an attempt at academic dishonesty, please contact me before the assignment is due to discuss the matter. Unless otherwise indicated, **all graded course components are to be completed independently.**

### **Statement on Social Justice**

The West Virginia University community is committed to creating and fostering a positive learning and working environment based on open communication, mutual respect and inclusion. I concur with that commitment.

If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this course, you must make appropriate arrangements through Disability Services (293---6700). They will identify the nature of the accommodation your disability requires.

### **Course Structure**

This course meets twice per week. At the beginning of each week, you are expected to review the week's learning outcomes, complete a reading assignment in your textbooks, and review the course materials in eCampus. The course includes a formal lecture on the appropriate chapter from the textbook, individual and team assignments in class. It is expected that you will participate in the exercises and class discussion portion.

### **Grading Elements, Weighting, and Scale**

- Participation/Attendance – To promote student to student and student to instructor interaction, students will respond to weekly questions posed by the instructor. Questions posed may be based on the reading assignments, homework or team assignments. Non responsive or consistent absences will be noted/counted\*. \*Attendance will be taken (sign-in sheets) for a minimum of (10) classes.
- Labs – Lab 1 will be individual assignment, Lab 2 & 3 will be Team assignments (2-member /team) utilizing the Microsoft Project software. Detailed instructions and a grading policy for each lab assignment will be posted on eCampus. Note that each team member needs to be able to work with the MS Project software since the MS Project Exercises on Exams 2 & 3 will incorporate all the techniques used to complete the Lab 2 & 3.
- Assignments/Homework - will be a mixture of be individual and/or team submittals.
- Exams - Students will be given 3, exams throughout the term. Exams will focus on textbook reading, project management theory, and technical knowledge. The 2<sup>cd</sup> and 3<sup>rd</sup> exams will include exercises to test your proficiency with MS Project Software. The Final Exam will not be cumulative.

**GRADING**

Grades are based upon student performance on assignments, quizzes, and projects, as well as upon student participation in required activities, such as study labs and a variety of outside of class experiences designed to show students more about the engineering profession. Each assessment tool is weighed as follows:

30%	Labs [3@ 10% / each]
45%	Exams [3@15% / each]
15%	Final Exam
5%	Assignments [team assignments, homework]
5%	Class Participation/Attendance

**GRADING SCALE**

Letter grades are assigned according to the following scale:

A	90% – 100%
B	80% – 89%
C	70% – 79%
D	60% – 69%
F	Below 60%

**\*TENTATIVE COURSE SCHEDULE**

<b>Week</b>	<b>Topic</b>	<b>Book Chapters And Sources</b>	<b>Assignments &amp; Deliverables</b>
1 8/21	Modern Project Management -Overview	L/G: Chaps 1	
2 8/26-8/30	Organization: Structure & Culture Organization Strategy, Project Selection,	L/G: Chaps 2, 3	
3 9/2-9/6	<b>Labor Day Holiday</b> Defining the Project Scope (part 1)	L/G: Chap 4	Lab 1 Start
4 9/9-9/13	Defining the Project Scope (part 2) Estimating Project Times and Costs (part 1)	L/G: Chaps 4 & 5	
5 9/16-9/20	Estimating Project Times and Costs (part 2) Impact of Learning Curves	L/G: Chap 5	<b>Lab 1 Due</b> <b>Exam 1 Chaps 1-5</b>
6 9/23-9/27	Sequencing the Project Activities MS Project – tutorial #1	L/G: <b>Chap 6</b> MS Project videos	Install MS Project Lab 2 Start
7 9/30-10/4	Managing Risk	L/G: Chaps 7	
<b>8</b> <b>10/7-10/11</b>	Scheduling Resources and Cost	L/G: <b>Chap 8</b>	Lab 2 Due
9 10/14-10/18	MS Project tutorial #2, Lab 3 Discussions	MS Project videos	<b>Exam 2</b> <b>(chaps 6-8)+ MS Project</b> Lab 3 Start
10 10/21-10/25	Reducing Project Duration and Finalizing Time and Cost Baselines	L/G: Chap 9	
11 10/28-11/1	Staying on Course: Monitoring and Controlling the Project	L/G: <b>Chap 13</b>	Lab 3 Due
12 11/4-11/8	Leadership & the Effective Manager	L/G: Chap 10	
13 11/13-11/15	Managing Project Teams	L/G: Chap 11	<b>Exam 3</b> (chaps 9, 10, 13 +MS Project)
14 11/18-11/22	Procurement: Outsourcing Project Components Project Closure	L/G: Chap 12 & 14	
<b>11/25-11/29</b>	<b>Thanksgiving Break</b>		
15 12/2-12/6	Agile Project Management	L/G Chap 17	
16 12/9-12/11	CAPM Review & Practice Tests <b>Final Exam – Wednesday, 12/18 8-10am</b>		<b>Final</b> <b>Chaps 11,12,14,17</b> + CAPM principles