

123 Advanced Construction Project Management

Course Syllabus

Course Textbooks

- *Construction Project Management*, by Mike Angerame and Dick Billows, PMP, GCA, 2010
- *The Art of Speed Reading People*, by Paul Tieger and Barbara Barron-Tieger

Learning Objectives

Working individually with your personal instructor, you will learn advanced techniques and a methodology for managing large commercial construction projects. You will demonstrate the ability to execute each of these techniques at a professional level:

1. Strategic planning with customer/owner executives to identify objectives linked to company strategy
2. Stakeholder identification, analysis & management to control the owner's expectations
3. Risk identification, analysis and design of risk response strategies
4. Advanced time and cost estimating plus scheduling using best practice techniques
5. Tracking progress using earned value and variance analysis, then reporting status
6. Assessing the impact of change requests on the project scope, budget and duration
7. Making persuasive live project presentations; accurately assessing the personality types of the attendees and tailoring your communications to fit them
8. Optimizing schedules and budgets in Microsoft Project® software.

How You Learn

You'll practice each of the steps on a large facility construction project case study involving a crew, subcontractors, vendors, and a number of specialists. You will work privately with your instructor and receive personal written feedback and coaching on all your work. Your instructor will ask you to correct or improve any assignment that is not at a professional level. You can ask your instructor questions whenever you wish via e-mail, phone call, or live web meeting. You are guaranteed a response within 24 hours.

Course Process

Each of the modules in the course has a textbook reading assignment, a lecture video on the course website, and construction case study-based assignments which you complete and send to your instructor via e-mail. You will also work with your instructor on four live project simulations over the Internet, scheduled at mutually convenient times. The course requires approximately 60 hours of effort for the reading, lectures, and case study-based assignments. You may take up to one year to complete the course.

Grading Criteria and Credits

To pass the course you must earn a grade of 80% (B) on all course assignments and the 60 minute final exam. Your instructor will ask you to revise any assignments that are below the 80% level. To earn PMI® (Project Management Institute) PDUs (Professional Development Units) for this course, your final exam must be proctored by an organizational superior or a licensed professional, such as an attorney or certified public accountant.

Streaming Media Lectures

You will view the lectures from the course website. Our server will stream the high-definition videos to you using the latest dynamic technology and constantly monitor your available bandwidth, streaming the appropriate size file for your bandwidth. Students watching from their workplace or from home with a cable TV speed connection will not encounter any buffering.

Live Presentations and Simulations

Because effective interpersonal relationships are such an important skill for project managers, you will practice negotiating scope, estimating with your crew, presenting plans and status reports, and answering questions from owner executives. These project simulations will take place privately between you and your instructor, by e-mail exchanges and in four live Internet meetings at mutually agreed upon times. In all of these simulations, you will play the role of the project manager and your instructor will play the sponsor, stakeholders, and team members. Your instructor will review your presentations and send you feedback on your content as well as your speaking and presentation techniques.

You will get a copy of your presentation videos with feedback so you can improve your skills and increase your comfort giving presentations to executives. Your skill level will improve as you give each of these presentations.

Apply What You Have Learned to a Project Case Study

You will practice each course technique on the Vailcrest Mega-Expansion Project Case Study, receiving coaching and written feedback from your instructor on all your work. While only a summary of the Vailcrest Mega-Expansion Project Case Study is provided within each module below, you will read the entire case study in the actual course.

Course Sequence

Module 1: Strategic Planning

9. Read Chapters 1-3 in *Construction Project Management*.
10. Watch the Module 1 lecture on the course website.
11. Read Part 1 of the Vailcrest Mega-Expansion Project case study:

Vailcrest Mega-Expansion Project Case Study: Part 1 Summary (In the actual course, you'll read the entire case study):

You return to the Vailcrest Corporation where you worked 5 years ago as a rookie construction project manager. Dan Morton, President of Vailcrest, begged you to come back to help him cope with threats from larger competitors. Dan wants to expand to several new locations and improve service to customers at the same time.

You quickly discover that the corporation's executive group still has tensions and conflicting agendas that have only grown worse during your absence.

Before your meeting with the Vailcrest executive staff, Dan Morton tells you that because the current project plan is so disorganized the staff is already focusing on avoiding blame rather than being productive. You will begin your challenging task by defining a new facility expansion project scope and major deliverables.

1. In a live simulation with your instructor, ask Dan and the 3 VPs questions about the facility expansion project they recently launched. The project is headed for disaster and it is your job to fix it.
2. Secure their agreement on a revised strategy with a defined scope and achievement network for the Mega-Expansion Project.
3. Send your plan and achievement network and the constraints of the project to your instructor for written feedback within 24 hours.

Module 2: Managing Stakeholders & Requirements

1. Read Chapters 1 through 4 in *The Art of Speed Reading People*.
2. Watch the Module 2 lecture on the course website.
3. Watch the executive stakeholder videos on the course website and read the additional information in your case study about the project's stakeholders.
4. Prepare a stakeholder management & communication plan in your course template for each of the ten stakeholders:
 - a. After watching the videos of the executive stakeholders, start by identifying whether each person is an introvert or an extravert.
 - b. Then identify their temperament as one of the four types discussed in the lecture and reading.
 - c. Write how you will communicate and deal with each of them individually.
 - d. Write a plan for dealing with the group as a whole.
5. Send the completed plan to your instructor for written feedback within 24 hours.

Module 3: Project Launch & Requirements

4. Read Chapter 4 in *Construction Project Management* and read the software appendix at the end of that book.
5. Contact your instructor and suggest 2-3 days/times for the 30 minute live online simulation. In this meeting you will:

Project Management Certification & Training

Class Size=1...Just You & Your Instructor

- k. Attend a meeting with Dan Morton and all the stakeholders. Watch the entire video of the stakeholders.
 - l. Take over the meeting and give the stakeholders a 5 minute presentation on the scope and major achievements approved by Dan. Also address their concerns about how the project will be managed. Explain how they will participate in the decomposition of one of the major deliverables into lower-level deliverables.
 - m. Then you will guide the group through the decomposition process for the major deliverables. Make sure to apply your communications strategy developed in the last assignment to the meeting with each of the individual stakeholders.
6. Your instructor will send you the transcript with written feedback and coaching. You will also receive comments on your presentation during the live simulation.
 7. Using the requirements you gathered in the meeting, complete the decomposition of the major deliverables into a detailed network of deliverables and send it to your instructor for written feedback.
 8. Using your instructor's feedback on the deliverables network, make adjustments to the project schedule. Send it to your instructor for feedback within 24 hours.

Module 4: Advanced Estimating Techniques

1. Read Chapter 5 in *Construction Project Management*.

2. Watch the Module 4 lecture on the course website.

3. Watch the videos of the project crew members in your estimating session and remember the issues that arose with the prior project manager's mishandling of the previous estimating process. Then, using your communication plan for each individual, write a response to the crew members' comments about your request for an estimate and ask them to provide estimating data. Explain to each of them what you need for the estimating technique you are going to use with their deliverable, and send this write-up to your instructor for written feedback within 24 hours:

- f. Monica will do an analogous estimate
- g. Judd will do a parametric estimate
- h. Lucien will do a PERT estimate
- i. Peggy will do a PERT estimate
- j. Maria will do a PERT estimate

4. Using your instructor's feedback and the data you receive from the crew, calculate the work estimates and prepare a two part presentation. Schedule a day and time with your instructor for this live web meeting:

- a. For the group of 5 stakeholders, explain how the estimates will work this time, rather than with the previous project manager, and why they can have confidence in your process. This presentation will be filmed for feedback.
- b. Meet individually with each of the crew members in a text chat. Show them a slide in your PowerPoint template with calculations for their estimates using their data. Explain how tracking of their estimate will work and answer their questions about the estimating process and their accountability. Your instructor will send you feedback on how you handled the presentation to the group as well as the individual meetings with your crew.

Module 5: Advanced Risk Management

1. Read pages 61-65 in *Construction Project Management* and the additional risk management articles on the course website listed under Module 5.
2. Watch the Module 5 lecture on the course website.
3. Read Part 5 of the Vailcrest Mega-Expansion Project case study:

Vailcrest Mega-Expansion Project Case Study: Part 5 Summary (In the actual course, you'll read the entire case study):

You have received a rough risk identification list from the Vailcrest executives, as well as the qualitative assessment of each risk from the company managers. You must now review the risk identification process and the qualitative risk assessments and suggest which risks to omit, which to analyze quantitatively, and for which to develop risk responses.

You meet again with the executives and ask them to obtain data on these risks. You also review previous Vailcrest construction projects for related data and then develop quantitative data for risk analysis. Using this data, your next task is to perform an analysis, calculate an expected value, and plan responses for each risk, while also estimating the cost and impact on the schedule.

4. Using your course template, complete each risk management step:
 - e. Review the risk identification process and the qualitative risk assessments done by the executives. Enter the data in the PowerPoint template and recommend which risks should be omitted from the process, which should be analyzed quantitatively and for which risks a response should be developed. Send it to your instructor for written feedback.
 - f. Using the data you receive from your instructor along with your feedback on Part A, complete the quantitative risk analysis, and plan a risk response for the top 3 risks using your PowerPoint template. Send your instructor your completed risk management plan in the template and received written feedback within 24 hours.

Module 6: Optimization & Change Control

5. Read Chapters 6 and 7 in *Construction Project Management*.
6. Watch the Module 6 lecture and software video on the course website.
7. Finalize the project schedule from Assignment 3.
8. Apply the optimization techniques to the project schedule and send it to your instructor for review and feedback.
9. Read Part 6 of the Vailcrest Mega-Expansion Project Case Study and using the change control techniques in the reading and lecture, develop a change control analysis for each of the requests in the case:

Vailcrest Mega-Expansion Project Case Study: Part 6 Summary (In the actual course, you'll read the entire case study):

It is the day before your first formal status report for the Vailcrest Mega-Expansion Project. You are trying to finalize your presentation data, but you have lost some time dealing with the demands of the executives. Dan is nervous about the budget and risks involved and also wants the date of the grand opening moved up two weeks. You also have a significant amount of executives' change requests to process and add to tomorrow's status report.

10. Send your change request analysis in the template along with the Microsoft Project® schedule version for each request that you used to quantify the impacts.
11. Your instructor will send you feedback, a revised schedule, and status data from your project crew for use in the next assignment.

Module 7: Corrective Action, Earned Value, & Forecasting

12. Read Chapter 8 in *Construction Project Management*.
13. Watch the Module 7 lecture and software video on the course website.
14. Use the project crew's status reports that your instructor sent you and enter the actual results into your schedule.
15. Analyze the situation and identify the problems you face. Use earned value and variance data analysis to document the consequences for your next presentation. Develop plans for corrective action in the course template, which will be the basis of your presentation. Use Microsoft Project® software to model the requirements, costs, additional resources and schedule impact of the corrective action. Model 3 alternative recovery strategies with separate project schedules for reducing the scope, duration and cost for the project.
16. Send the completed template to your instructor for review and feedback and suggest 2 or 3 appointment dates and times for this live project simulation. Your goal is to secure executive approval to proceed with your plan for corrective action. The simulation should take approximately 20 minutes with:
 - n. 10 minute filmed session devoted to your presentation of the change requests and project status
 - o. 10 minutes devoted to answering the user executives' questions in a text chat.

Module 8: Final Exam

The final exam consists of 10 short essay questions. It is open book and open notes with a 60 minute time limit. It must be proctored if you wish to earn the PMI® professional development units (PDU) s. Most people ask their boss but any licensed professional (lawyer, accountant, etc.) who is not a relative can serve as your proctor. Send your instructor an e-mail with the date and time you wish to take the final exam.