

APSC 877: Engineering Project Management Outline for Spring 2021 Online

Course Overview:

This course is designed to develop professional skills required for effective management of engineering projects. Project management (PM) has evolved from being an accidental job title into an organizational core competency, especially for engineers. Even if you choose to follow a strictly technical career path, you will almost certainly be working on projects. This course discusses the essential practices, techniques and principles of the globally recognized *Guide to the Project Management Body of Knowledge (PMBOK® Guide)*, which includes context, leadership, and the management of scope, cost, schedule, risk, resources, stakeholders, communications and procurements. In conjunction with further study and appropriate work experience, the course material can be used to prepare for a professional credential in project management such as the Project Management Institute's CAPM® or PMP® designations or the International Project Management Association's Level C or D certifications.

Course Objectives:

You will learn to:

- Apply modern project management terminology
- Use commonly accepted project planning and controls tools
- Summarize the essential elements of a sound project management framework
- Assess project management practices used in engineering against those promoted by globally accepted standards
- Develop personal project management competencies and leadership skills
- Investigate how leadership, scope, risk, resources and other management disciplines affect project performance
- Evaluate the context of an engineering project environment

Instructor:

Darya Duma, PEng, PMP is a Senior Trainer and Consultant with Procept Associates and President of 4DPM, and was the Quality Manager responsible for maintaining Procept's ISO 9001 registration. Practice areas include PM methodology design, PM software implementation, and course design and delivery. Darya was a member of the PMI REP Advisory Board and is a member of the Canadian Advisory Committee on ISO/TC 258 for projects, programmes and portfolios. She is Program Director for Procept's 10-day *Mechanical Contracting Project Management* course at the University of Waterloo. Her corporate customers include Canada's two largest nuclear electricity generators, a defense contractor and two mining corporations. She was a practicing Project Manager for over 10 years, with extensive international experience, including developing national and international standards for CSA and ISO, and managing elevator installations for a mechanical contractor.

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COURSE DETAILS

Marking Scheme:

- 4% individual assignment:** Case study analysis
- 15% team assignment:** Team project charter
- 6% participation:** Participation in online discussions
- 10% quizzes:** Online self-directed, mostly multiple choice
- 10% calculations exercises:** Online self-directed
- 10% oral team presentation:** On team project
- 20% final exam:** Multiple choice, short answer and long answer
- 25% written team project:** Team project report due one week after final exam

Teams: Three to four students per team. Students can form their own teams.

Required Textbook:

A Guide to the PM Body of Knowledge (PMBOK® Guide) 6th ed, Project Management Institute, 2017. Purchase this at on-line bookstores or at www.pmi.org. Typical price is CAN \$55 with free shipping. Electronic version is free with student membership to PMI (USD 35).

Optional References: *Engineering Project Management*, Neil G. Siegel, Wiley 2019 is informative but expensive, and a little weak on explanations of project management tools. Max Wideman's "PM Comparative Glossary" at www.maxwideman.com is an excellent free reference. *ISO 21502:2020 Project, programme and portfolio management – Guidance on project management* is another standard to be aware of, particularly for global work.

Submissions: Assignments must be submitted by uploading to the course OnQ website. There will be a penalty for late assignments.

Microsoft Project: The popular software Microsoft Project 2019 is available through your student software account on Sharepoint. You might find it useful, but it is a challenge to use with a Mac. Another good open source scheduling software is ProjectLibre™: <https://www.projectlibre.com/>