SYLLABUS - APS1001H
PROJECT MANAGEMENT, Summer 2017

INSTRUCTOR: Keith Farndale (farndale@procept.com)

PREREQUISITE: None.

FORMAT OF COURSE: Asynchronous online, with final exam on St George campus**.**

COURSE DATES: July 3 to August 17, 2017. See Outline below for details.

COURSE OVERVIEW: Project management (PM) has evolved from being an accidental job title into being a chosen profession, especially for engineers. Even if you choose to follow a strictly technical career path, you will almost certainly be working on projects, and this course can help you understand that context. Employers very much value competence in project management. This course covers most of the knowledge areas and processes of the globally recognized PM Body of Knowledge: integration, scope, cost, time, risk, human resources, stakeholders and procurement management. We take a practical, applied approach. This online course includes video lectures, video guest speakers, reference to web pages, text readings. We will have team papers on "lessons learned" from actual engineering projects. We attract a mix of part-time students from the working world of projects, together with full-time students with little work experience.

OFFICE HOURS: I am quite available by email, Skype, telephone. Si Ud. está cerca de Guadalajara, México, podemos encontrarnos para tomar un café. (If you are near Guadalajara, Mexico, we can get together for a coffee.)

COURSE OBJECTIVES:
- Understand the common framework and terminology of project management.
- Be better able to fit into a formal project environment, or to manage your own less formal projects.
- Add techniques to your PM "toolbox", increasing your value to your organization and the marketplace.
- Increase your own PM "lessons learned" by sharing experiences with others.
- Gain exposure to Microsoft Project.
- Optional: With further reading, be prepared to take a project management designation examination.

INSTRUCTOR BIO: Keith Farndale, MBA, PEng, was founder and president of Procept Associates Ltd., a premier provider of training and consulting in project management with clients across Canada and with international affiliates. His own clients included engineering-intense organizations Amec, Vale, and OPG Nuclear. Prior to his current roles, he spent a 20-year career in the management of industrial construction projects. Keith is a past president of a chapter of the Project Management Institute (PMI) and recipient of an Outstanding Contribution award. He designed and presented the first course in Canada aligned with PMI's Project Management Body of Knowledge. Keith has been a member of the Project Management Forum of the Conference Board of Canada, the Ontario Construction Users Council, and the advisory board for the ProjectWorld Canada conference. He is a past director and competency assessor and is currently the Appeals Committee Chair for the Project Management Association of Canada. He has been designated as an Earned Value Professional by the Association for the Advancement of Cost Engineering, as a Certified Training Professional by the Canadian Society for Training and Development, as a Project Management Professional by PMI, and is a Professional Engineer.

MARKING SCHEME:

0% mid-term exam: it is self-marked by you
3% for team WBS and schedule: submitted as an MPP file.
25% team project: See more info about the team project below.
5% participation in discussion boards, possibly other methods to be advised.
3% your review and comments on previous papers (details to follow)
60% final exam: In person, paper-based, at St George campus short answer and long answer, a few multiple choice, bullet points are encouraged.
4% for completion of the module multiple-choice tests. Note that your actual scores on the tests do not matter.

In order to pass the course, you must attain a minimum of 70% on the final exam, and a minimum of **B-** (70%) overall as calculated above.

MID-TERM EXAM: Mid-term exam will be take home, self-graded. Your score will not count toward the grading, but it will be in a style similar to the final exam.

FINAL EXAMS: Final exam is paper-based, on St George campus. Short answer and long answer, a few multiple choice, bullet points are encouraged. Closed book.

If you would like to discuss writing at a distant location, first check whether a local university offers "external exam services", then contact the instructor.

TEAMS: Three to four students in a team. It is best for students to self-form into groups very early in the course. But because of possible drop-outs, we cannot finalize teams until just after the course drop date.

REQUIRED TEXTBOOK: *A Guide to the PM Body of Knowledge (PMBOK® Guide) 5th ed*, Project Management Institute, 2013. It is always available in the UofT bookstore, but you may prefer to buy in advance from on-line bookstores.

OTHER M.ENG. COURSES RELEVANT TO PROJECT MANAGEMENT: I recommend one of the MEng leadership courses (iLead program), Management of Innovation, Human Resources Management.

OUTLINE: Note that modules 5, 7, and 9 have significantly more content than the others. The textbook and other readings are listed at the beginning of the notes module 1.

Jun 29, Course content "module 1 Introduction" will be made available on the portal
Jul 3, Nominal start of course
Jul 6, 2 Integration Management
Jul 9, 3 Stakeholder Management
Jul 13, Scope Management
Jul 16, Submit your comments on previous papers, due 11:59 pm Eastern Time
Jul 16, 5 Time Management
Jul 20, 6 Organizing for Projects
Jul 21-23, Anytime during these three days, **Mid-Term Exam** to end of module 5

Feb 19, mid-term answers released
Jul 23, 7 Cost Management
Jul 24, Last date to drop the course without academic penalty.
Jul 24, Final date for team formation. After this date, I will assign any ungrouped students into teams.
Jul 27, 8 Procurement Management
Jul 30, Microsoft Project MPP file due 11:59 pm Eastern Time, one per team, by email.
Jul 30, 9 Risk Management
Aug 3, 10 Communications Management
Aug 6, 11 Human Resource Management
Aug 10, 12 Wrap-up
Aug 17, at noon Eastern Time**, Final Exam**
Aug 24, Team paper due by 11:59 pm, by email and to www.turnitin.com. Class id 14757301, password Galbraith.

PORTAL: Although we discuss most things on Piazza, I still use the Blackboard portal for important announcements. If you are having trouble, contact the portal help team, portal.help@utoronto.ca.

YOUR EMAIL: It is required that you be able to receive email at your utoronto.ca address. Without it, I cannot send you an email or send important announcements via the portal.

DISCUSSION BOARD: We will be using Piazza.com for asking questions (and proposing answers) on course content and on course administration, and for class discussions. The system is designed to get you help fast and efficiently from classmates first, and then myself.

You will be required to engage in some of the course content discussions. At the time of the mid-term, I will evaluate Piazza participation and quiz completion up to that time. And then at end of the term, I will evaluate Piazza participation and quiz completion since the mid-term. In other words, don't try to leave it all until the end!

Enrol at https://piazza.com/utoronto.ca/summer2017/aps1001/home. I encourage you to post a pic on Piazza, it makes our communication a bit more personal. And be aware the Piazza has good smartphone apps.

SUBMIT YOUR COMMENTS ON PREVIOUS PAPERS: I will provide a link to a folder with several previous team papers. Please select and read two of them and submit an individual short write-up with your observations. About 800 words in an email attachment. Surprises, or similarities among the papers, or other observations, etc. You can also comment if you think the paper does not meet my specification for team papers. No special format, except of course use quotation marks if quoting from the papers.

This allows us all to learn from other teams' papers, and gives you a chance to see examples of what I am looking for.

MICROSOFT PROJECT: The popular software Microsoft Project is available to all engineering students through your DreamSpark account. If you are not an engineering student, I can arrange a student copy for you.

MPP FILE SUBMISSION:

Each team is to submit an MPP (Microsoft Project) file displaying a WBS and schedule for the work your team will do on your own project to research, write a report, and submit. (It is NOT retroactively for the Boing 787 or other project you have decided to study.) So you can actually do the WBS and schedule without even having chosen your subject. I will look for the following:

- Include your team number in the filename.
- The WBS hierarchical structure, and the WBS column inserted into the display.
- The schedule should be based on a critical path network. In Microsoft Project terms, with "links" between the tasks.
- No links between summary tasks please. It is better practice to put them between the bottom-level tasks.
- Most tasks should be "auto-scheduled", not "manual scheduled".
- Most tasks should be "as soon as possible". You may have report submission tasks or milestones which have "must finish on" or "finish no later than" constraints. (Double-click on the task name, select Advanced tab.)
- Resource names assigned to most or all of the bottom-level tasks.
- Start with a milestone, finish with a milestone.

Tips: When first opening a new Microsoft Project file, go to File, Options, Schedule, Scheduling options, and ensure it is set to Auto Scheduled. I suggest never select "effort-driven" unless you are familiar with MSP and intend to use this method. A useful tutorial is available for free at www.tech.uh.edu/projectnmotion, lessons 1-4.

TEAM PROJECT:

A team research report on an engineering or other 'technical" project of your choice which has been completed within the last 15 years, emphasizing "lessons learned" that we can gain from the project. Focus on management lessons, NOT technical lessons. Focus on what to do in the future, not just analyze the past. Maybe your lessons can be categorized into the *PMBOK Guide* knowledge areas if you choose to do so: Scope, Cost, Time, Risk, Procurement, Communications, Human Resources, etc. Use several sources – refereed journals (if available – for many of these projects they will not exist), government reports, newspapers and magazines, personal interviews.

It must be a project which you have not studied in any other course. Please discuss your project choice with your instructor for approval.

Max Wideman's PM Glossary at www.maxwideman.com defines "lessons learned' as:

- "The capture of what went well as well as past errors of judgment resulting in material failures, wrong timing or other mistakes, all for the purposes of improving future performance.
- The project team's learning from the project. Usually defined during close out."

Introduce the project to us, then tell us the lesson learned in one statement, then explain why you concluded that, then go on to the next lesson. They can be both good and bad examples. For each lesson, tell us something that happened or failed to happen. Did the project management team carry out or fail to carry out good practice as described in your textbook or in the class? Describe why and how this can be a "lesson learned" for use when managing FUTURE projects. Most of your reports will contain between 6 and 12 lessons.

For example, from a previous report:

"**Lesson Learned #5: Stakeholder input must be sought, and must be seen to be valued.**
Massachusetts Secretary of Transportation Fred Salvucci secured local government support for the Central Artery / Tunnel program by making two crucial pledges…"

Many teams choose construction projects, because it is easy to find ones which are high profile. But be sure to consider other types of projects, especially ones relevant to the engineering discipline of the team members. Look at software development, new product development, aerospace, etc. Military equipment projects of the US Department of Defense can be good choices – they exist in a serious PM environment, have lots of stakeholders, and there may be good published sources of information. Cleanup of contaminated waste sites can be good choices. Olympics and other games facilities make good subjects, but not the games themselves please.

Anti-plagiarism Submission Software:
Normally, students will be required to submit their course essays to www.Turnitin.com or similar site for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their essays to be included as source documents in the Turnitin.com reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of the Turnitin.com service are described on the Turnitin.com web site.

Accurate Documentation:
If in question, please refer to and follow the guidelines at
http://www.engineering.utoronto.ca/Directory/students/ecp/handbook/accurate.htm.
It covers plagiarism, referencing techniques, FAQ, and writing tips.

REPORT SPECIFICATIONS: I use these specifications when grading papers.

Filename: Includes the month in ISO8601 date format, the name of your subject project, and your group designation. E.g. "2016-08 Avro Arrow group B.pdf".

Format: A title page, an executive summary of 1 page, an optional table of contents, and then the body of the report is 14 pages, followed by reference list and possible appendices. Tables and figures may in the body or may be in the appendix. If you use tables and figures, they must be discussed in the body text. The body of the report should be double spaced, Times New Roman 12. We will stop reading the body of the paper at the end of the 14th page.

References: Zero tolerance for plagiarism. All references must actually be cited in the text, using the IEEE Citation Reference method shown in brief at http://www.ieee.org/documents/ieeecitationref.pdf. Be sure to list personal interviews if used. Each lesson must have one or more citations.

Executive Summary: For the executive summary, which is not usually a part of academic papers, refer to the guidelines at https://en.wikipedia.org/wiki/Executive_summary. The executive summary actually summarizes the paper's conclusions (i.e. list your lessons) in case one does not have time to read the whole paper. By contrast, an abstract helps one decide whether to read the paper. The executive summary does not have citations, as they are in the body of your report.

Content: As much as possible, include factual data to support your arguments. This can be quantitative or qualitative project data, such as budget or schedule variances, number of changes, statements from qualified stakeholders or commentators, or comparison to other similar projects.

See above about the lessons being worded in a forward-looking way, what would you in a FUTURE similar project.

Writing style should be readable, grammatically correct, lean (dense) without unnecessary flourishes.

It is better to have 14 pages of content than fewer pages.

Q&A:

Q. In terms of the Team Project, the syllabus only says we need to a research on an engineering or technical project of our choice. However, it doesn't provide us a guideline how to choose it. Could you please help address it?

A. Use Google and ask for "failed projects" or "successful projects project management". Both "failures" and "successes", and anything in between can be appropriate; failures tend to be more dramatic and more published. Public sector and private sector are both appropriate; public sector are often more published. For public sector, projects in USA and the UK are often more published than in other less open countries. Look at my "lessons learned blogs" in the portal announcements. Ask your friends and colleagues and other instructors or myself for one relevant to your discipline and interests.