The University *of* Western Ontario

Rev 02

Engineering Planning and Project Management - Online

Eng Sci 9510 Section 650 & 651 Department of Civil and Environmental Engineering

Course Outline – Summer 2020

Instructor: Kevin McGuire, M. Eng., P. Eng., PMP

Description:

This graduate level course is an introduction to the most widely accepted project management practices in the workforce today. It is based upon the guide published by the Project Management Institute known as "The Project Management Body of Knowledge" – or PMBOK. Project Management lends itself to being taught properly in either one of two ways. It can either be analyzed sequentially across the five phases of a project (initiating, planning, executing, monitoring and controlling, and closing) or it can be decomposed into its 12 areas of necessary expertise for the professional practitioner and then imparted. We choose this second approach. We do so for several reasons, not least of which is that this is in keeping generally with the order in which most scholarly works tackle the subject. The course content is developed in the software package "Storyline" by Articulate Ltd. It is delivered through Owl Sakai. The student will note numerous enhancements to the course curriculum in part to offset face to face instruction. Most significant among these are gamification throughout as well as well as guest lecturing from well-known campus leaders throughout. Lecture summary quizzes in game format will at times be marked assessments. An instructor will be available via email, and chat at all times throughout the course. Response times in this regard will vary but in general students should not have to wait more than 48 hours for any enquiries. This is consistent with the in-class version of the course. The course is to be delivered in partial synchronicity. Students will be allowed to proceed through the course at their own pace lecture wise, but all assessments are completed to a consistent group timing. The final exam will be available in infinite variability through Owl. The final exam CANNOT be written in person on campus in a computer laboratory as had been done in previous years. The course will be 7+ weeks in duration followed by a final exam in the 8th week.

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Technical Requirements: Students require a modern, updated browser. The course supports Firefox, Google Chrome, and Safari. Students require an updated operating system that is Windows, Mac OS, or iOS, based. Students require a reliable high-speed internet connection. Students require access to Youtube.com from their remote location if studying out of country. Students require access to Vimeo.com if studying out of country. Both Vimeo.com and YourTube.com may not be available at all times in the Republic of China, various countries in the Middle East, and possibly other locations. Students should investigate this prior to registering. Students require access to Owl Sakai through uwo.ca if studying outside the country. We do not recommend exclusive access to the course through a hand-held device. We recommend laptop or workstation access as the primary access. The course does support access from tablets, but again we do not recommend at this time that they be used as the primary method of course access. As a secondary source of access, Apple, Blackberry, and Android devices will access the course as should other handhelds. All sources of access mentioned should format correctly for all elements of the course. Avoid disappointment and follow the advisory regarding what to use as a primary method of access.

Course Goals: The course is intended to reveal and develop project management best practices. The student will learn the industrially accepted techniques associated with the management of time, cost, and scope in order to achieve total project stakeholder satisfaction. In absence of formal project management training, professionals in the workplace can and do successfully run projects. The goal in this course is to expose the class to the most efficient, and widely recognized, project management practices and in so doing greatly increase their likelihood of managing successful projects during their careers. The expected outcome will be to develop workforce ready minds that easily integrate into any corporate culture. It is intended that the acquisition of skills developed in this course will prepare the student for pursuing the designation Project Management Professional, or at the very least, prepare the student to more effectively contribute to project type work.

Course Objectives: At the completion of this course, the students will be able to:

- Apply themselves and foster in others an appreciation for project management best practices in the carrying out of academic scientific research.
- Clearly communicate the difference between a process and a project and thereby know when to apply project management practices.
- Attain familiarity and confidence with the management of integration, cost, time, scope, quality, human resources, risk, and communication on projects.
- Understand and practice the commonly accepted professional standards of project management.
- Articulate a knowledge of, and understand what activities are required during project initiating, planning, executing, controlling, and closing.
- Apply themselves and foster in others an appreciation for project management best practices in the workplace.
- Understand what is expected of them from a professional project manager.
- Understand the roles and responsibilities of a professional project manager.

Course Content:

1) Introduction
   - The Knack
   - The Argument for Formally Studying Project Management
   - The Definition of a Project
   - Contrasting the Role of the Manager with the Role of the PM
   - The Triple Constraint
   - The Five Phases of a Project
   - Project Stakeholders
   - The History of Project Management
   - The Future of Project Management
   - The Project Management Body of Knowledge and PMI
   - Project Management in London Ontario
   - The Role of the Project Manager
   - Enterprise Environmental Factors

2) Project Life Cycle and Organization
   - Organizational Cultures and Structures
     i. Projectized
     ii. Strong Matrix
     iii. Weak Matrix
     iv. Composite
     v. Functional
     vi. Balanced
   - Project Selection Methods
   - Project Delivery Methods
     i. Design/Bid/Build projects (EPCM)
     ii. Design / Build (EPC)
     iii. Mega Project Management Challenges
     iv. Public Private Partnerships (P3)

3) Project Management Processes
   - Project Management Phase Diagram
   - Project Management Process Groups
     v. Initiating
     vi. Planning
     vii. Executing
     viii. Monitoring and controlling
     ix. Closing
   - Project Management Methodology Refinements at Specific Companies
   - Project, Program, Portfolio Management

4) Project Integration Management
   - Project charters - Development and Application
   - Teamwork
   - Virtual Teams
   - Performance Reporting
   - Coaching, Rewarding, and Recognition
   - Integrated Change Control – Change Orders

5) Project Scope Management
   - Writing a Scope Statement
   - Taxonomy and Project Management
   - Creating a Work Breakdown Structure
   - Estimating Work Durations
   - Scope Verification

6) Project Time Management
   - Scheduling Logic - resource availability etc.
   - Network Diagrams
   - Gantt Charts
   - Monte Carlo Method
   - Other Probabilistic Methods in Scheduling
   - Milestone and Task Timeline Distribution
   - Crashing

7) Project Cost Management
   - Engineering Consulting Firms
     i. Structure
     x. Overheads
     xi. Billing Rates and Utilization Targets
   - Determine the Budget
   - Cash flow and Revenue Generation
   - Progress Billing and Statements of Value
   - The Project Spending Curve
   - Task Progress Evaluation
   - Earned Value Analysis
   - Dealing with Sunk Costs
   - Dealing with the Project Management Office
   - Forecasting

8) Special Topics in Project Management
   - LEED Project Management
   - Agile Project Management

9) Project Human Resources Management
   - Classical Negotiation Methods
   - Training staff

- Assignment and reassignment
- Resource Leveling
- Maslow's Hierachy of Needs
- Myers-Briggs personality Types
- Emotional Intelligence
- Goals and Accountability

10) Project Communications Management
- Conflict Resolution Strategies
- Project Communication Matrix
- Communication Models
- Effective Meetings
- Effective Information distribution
- Effective Communication

11) Project Risk Management
- Stakeholder Risk
- Qualititative Risk Responses
- Quantitative Risk Responses

12) Project Procurement Management
- Bid Documents
- The Basic Elements of a contract - review
- Types of Contracts and the distribution of Risk
- Sample Construction contract
- Bonding and Insurance
- Analysis of Bids and Award of Contracts
- Tendering and Contract Execution
- Common Law Benchmarks regarding Construction Contracts
- Supreme Court of Canada Decisions Regarding Tendering Practices

13) Final Examination

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Class Schedule Section 650 & 651- Online
Tutorials some weeks Mon/Tues @ 9 am or 7 pm (all optional)

Date (Recommended)	Time (Suggested)	Hours (nominal)	
May 7th through 10th, 2020	6:30 pm – 09:30 pm	3	
Week of May 11th, 2020	6:30 pm – 09:30 pm	4	
Week of May 18th, 2020	6:30 pm – 09:30 pm	4	
Week of May 25th, 2020	6:30 pm – 09:30 pm	4	
Week of June 1st, 2020	6:30 pm – 09:30 pm	4	
Week of June 8th, 2020	6:30 pm – 09:30 pm	3	
Week of June 15th, 2020	6:30 pm – 09:30 pm	3	
Week of June 22nd, 2020	6:30 pm – 09:30 pm	3	
June 26th, 2020	6:00 pm – 9:00 pm	3	***EXAM Date***
	Total Teaching Hours	**28**	

In the event of technical malfunction of Owl, the instructor will post filmed lectures from the in- class version of this course in a timely manner on YouTube.com. Please keep your instructor up to date with any such problems.

Texts & References:

Project Management - Gray and Larson 7th Edition
Project Management Body of Knowledge (PMBOK) 6th edition

Evaluation:

Assignments (3):	21%
Summary Quizzes (7):	14%
Major Assignment (1):	30%
Final Examination	35%
Total	**100%**

Many lectures contain Learning Outcome games in the form of summary quizzes. These are connected to the gradebook via SCORM integrations – with marks viewable only by the instructor. Successful completion of a summary quiz can, at the discretion of the instructor, unlock bonus questions for the final exam. The maximum potential bonus to the student in the event of correct completion of bonus questions on the final is:

Summary Quiz Assessment Bonus Max 5%

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Notes on Remote Assessments:

The instructor reserves the right to schedule final exams within a zoom environment that includes cameras being enabled for the instructor to monitor the student for compliance to independent work.

Notes on assignments (papers and reports):

- Must be academic in style and content
- Must have a clear focus
- Must present ideas in a logical and well-thought-out flow
- Arguments, analysis, and conclusions must be based on clearly identified research and sources
- Must cite all references from other sources
- Must be in paragraph format
- Must be double-spaced, and typewritten

Grading:

A+	90-100	One could scarcely expect better from a student at this level
A	80-89	Superior work which is clearly above average
B	70-79	Good work, meeting all requirements, and eminently satisfactory
C	60-69	Competent work, meeting requirements
D	50-59	Fair work, minimally acceptable
F	below 50	Fail

Policy on Cheating and Academic Misconduct:

Academic honesty is a cornerstone of conduct at The University of Western Ontario. We cannot have freedom of expression without integrity. Students are responsible for understanding the nature of and avoiding the occurrence of plagiarism and other academic offences; please refer to the section on "Scholastic Offences" in the current University Academic Calendar, or on the web at http://www.westerncalendar.uwo.ca. Such offences include plagiarism, cheating on an examination, submitting false or fraudulent assignments or credentials, impersonating a candidate, or submitting for credit in any course any academic work for which credit has previously been obtained or is being sought in another course in this University or elsewhere (without the knowledge and approval of the instructor to whom the work is submitted). If you are caught cheating there will be no second warning. Academic penalties will be applied up to and possibly including expulsion from the program.

How often will the instructor communicate with me?

The instructor will be available to meet with students in regularly scheduled Collaborate UE tutorial sessions. The instructor will also schedule zoom meetings with students or groups of students at their request. These meetings are by appointment only which the student should set up via sending an email to the instructor at least 48 hours before the requested meeting. Zoom meetings can be recorded at the request of the student if the instructor is willing to do so. Any student may raise issues via zoom meetings, Collaborate tutorials, posting in our Forums area, or contacting the instructor or TAs directly via

messages within the course. Please note, messages within the course DO NOT populate in the TA and instructor UWO email accounts. So, to be sure of visibility, it is recommended that email through your standard Western Outlook 365 account to the TAs and instructor is preferred, particularly if the feedback is urgent in nature.

As stated the instructor will also be available via e-mail at kmcgui5@uwo.ca. The instructor will check e-mail a minimum of 3 times per week and the students should as well. E-mail will be checked at minimum once per weekend, as well as once early in the work week, and once late in the work week. All e-mails will receive a response. For detailed comprehensive responses, bring forward questions that affect the entire group. These are the preferred type of questions to be brought forward. Detailed questions relating to your work specifically will receive individually tailored responses.

The students will not typically have text or telephone access to the instructor although this can be arranged if the necessity arises. In such cases, the instructor has an expectation that telephone, and text access, is restricted exclusively to course materials and enquiries related to academic assistance in ES 9510. Also, upon completion of the course, students are expected to refrain from using this contact information unless it is re-approved by the professor after completion of the course.

How do I hand in assignments?

All assignments will be submitted electronically through Owl using the assignment tab in the course area unless stated otherwise on the assignment pick up point in Owl or on the assignment itself. Failure to meet deadlines without the instructor's written permission will result in a reduction of marks. Assignments received after the due date will be reduced 20% per day (including weekends). There will be little leniency for lateness and Owl maximum submission dates will be adhered to. Except in exceptional circumstances, approved by the instructor before the due date, assignments late beyond the maximum late submission date in Owl for the assignment will not be accepted and a mark of 0% will be assigned. Be advised that in some cases the maximum submission date may be no more than 2 days beyond the due date owing to the compression of this course. Also note from this description that exceeding the maximum submission date can result in a zero with only 2 days of being late at points. If you are 5 days late, you are certainly receiving a mark of zero.

It is the student's responsibility to ensure that all assignments forwarded to the instructor arrive on time.

The Use of English

In accordance with senate and faculty policy, students may be penalized up to 10% of the marks on all assignments, tests, and examinations, for the improper use of English. In addition, poor written work, with the exception of final examinations may be returned without grading. If resubmission of the work is permitted, it may be graded with marks deducted for poor English and late submission.

Attendance

Any student, who in the opinion of the instructor, is absent too frequently from class or laboratory periods in any course, will be reported to the Dean (after due warning has been given). On the recommendation of the department concerned, and with the permission of the Dean, the student will be debarred from taking the regular examination in the course. The instructor of the course will monitor access to the lecture materials to ensure a minimum expected time is observed in accessing course materials, most notably the Storyline lectures. Instructors have this data access through the Statistics tab in Owl.

Conduct

Students participating in any chat events are to be respectful at all times of both the instructor and fellow students. Incidents of technical disruption are possible, and students are to cope with any associated frustrations in a professional manner. No cyber bullying will be tolerated or overlooked.

Sickness and Other Problems

Students should adhere to Western procedures for reporting illness. They should make careful note with respect to modifications to policy driven by covid-19. Please review the relevant policies at the link below:

https://www.uwo.ca/sci/counselling/procedures/academic_consideration_for_absences/index.html

Owl Sakai Help - Who to contact

1) Application Problems

If you have problems with an application on this system
please call the Help Desk at **(519) 661-2111 extension 83800.**
https://wts.uwo.ca/helpdesk/index.html

2) OWL Help Page: **Owl Help and Support**

Confidentiality and University Indemnification

The University of Western Ontario, Kevin McGuire (your instructor), and your classmates take no responsibility for the confidentiality of information that you present in any educational context, such as online, in-class or in your submissions or postings. This policy extends to inadvertent video sharing during zoom meetings etc.

It is up to you, the student, to ensure that you are not breaching any confidentiality situations with any information you present including those which might pertain to ongoing research of which you are a part of or have been a part of in the past.

It is up to you the student to ensure your privacy is not compromised during Collaborate, Zoom, or other gatherings.

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