



COURSE OUTLINE: CON301 - INTRO. CONSTRUCTION

Prepared: Marc Pilon. P.Eng

Approved: Corey Meunier, Chair, Technology and Skilled Trades

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| Course Code: Title | CON301: INTRO. TO THE CONSTRUCTION INDUSTRY |
| Program Number: Name | 4077: CNST. PROJECT MGMT. |
| Department: | CIVIL/CONSTRUCTION |
| Academic Year: | 2023-2024 |
| Course Description: | This course explores the many facets of the construction industry and develops a deeper knowledge of the many factors that impact this industry. Students will increase their awareness of various participants and stakeholders that are typically involved in industrial and commercial construction projects, as well as and issues such as impact on the economy, safety, environmental, and use of technology. |
| Total Credits: | 4 |
| Hours/Week: | 3 |
| Total Hours: | 42 |
| Prerequisites: | There are no pre-requisites for this course. |
| Corequisites: | There are no co-requisites for this course. |
| Vocational Learning Outcomes (VLO's) addressed in this course: | 4077 - CNST. PROJECT MGMT. |
| Please refer to program web page for a complete listing of program outcomes where applicable. | <p>VLO 1 Develop and use strategies to promote continuous professional learning in the construction1.industry</p> <p>VLO 3 Assess construction project operations for compliance with contractual obligations, applicable laws, standards, bylaws, codes and ethical practices in construction methodology.</p> <p>VLO 5 Establish and manage relationships among diverse project stakeholders to achieve construction project goals.</p> <p>VLO 8 Schedule, manage and evaluate the progression of construction projects by applying the principles, practices and tools of construction project management to complete projects on time and within budget.</p> <p>VLO 10 Develop and oversee quality assurance and control processes involved in the completion of construction projects to meet project specifications and industry quality standards.</p> <p>VLO 11 Analyze and manage project risks to mitigate their impact throughout the construction project lifecycle.</p> <p>VLO 12 formulate human resource management strategies to optimize personnel requirements for construction project completion.</p> <p>VLO 13 Build and lead multidisciplinary teams throughout the construction project lifecycle to accomplish construction project goals.</p> <p>VLO 14 Measure, record, maintain, and summarize the financial elements of a construction project including the cost control and the associated cash flow that contribute to a project being completed within budget.</p> |



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| | VLO 15 Manage a construction site including job site layout, documents, materials, tools, and equipment and the coordination of labourers and sub-contractors to ensure the successful completion of projects. | |
| Essential Employability Skills (EES) addressed in this course: | EES 1 Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience. | |
| | EES 2 Respond to written, spoken, or visual messages in a manner that ensures effective communication. | |
| | EES 5 Use a variety of thinking skills to anticipate and solve problems. | |
| | EES 6 Locate, select, organize, and document information using appropriate technology and information systems. | |
| | EES 7 Analyze, evaluate, and apply relevant information from a variety of sources. | |
| | EES 8 Show respect for the diverse opinions, values, belief systems, and contributions of others. | |
| | EES 9 Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals. | |
| | EES 10 Manage the use of time and other resources to complete projects. | |
| | EES 11 Take responsibility for ones own actions, decisions, and consequences. | |
| | Course Evaluation: | <p>Passing Grade: 50%, D</p> <p>A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.</p> |
| | Other Course Evaluation & Assessment Requirements: | <p>Grade Definition Grade Point Equivalent</p> <p>A+ 90 - 100% 4.00</p> <p>A 80 - 89%</p> <p>B 70 - 79% 3.00</p> <p>C 60 - 69% 2.00</p> <p>D 50 - 59% 1.00</p> <p>F (Fail) 49% and below 0.00</p> <p>CR (Credit) Credit for diploma requirements has been awarded.</p> <p>S Satisfactory achievement in field /clinical placement or non-graded subject area.</p> <p>U Unsatisfactory achievement in field/clinical placement or non-graded subject area.</p> <p>X A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.</p> <p>NR Grade not reported to Registrar`s office.</p> <p>W Student has withdrawn from the course without academic penalty.</p> <p>Attendance Students are only allowed to miss three classes without a documented explanation. One mark will be deducted from your overall grade for each undocumented explanation. The maximum deduction in overall grade is not to exceed 15%. Valid documented explanation include:</p> <ul style="list-style-type: none"> • Medical reason • Family emergency • Child care issue • Transportation problems • And any other reasonable explanation |

The documented explanation has to be sent to the course professor by e-mail no later than three days from a missed class. A Doctor note, etc., is to be attached as a PDF file to your e-mail.

Course Outcomes and Learning Objectives:

| Course Outcome 1 | Learning Objectives for Course Outcome 1 |
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| <p>Upon successful completion, the student will be able to:</p> <p>1. Develop and use strategies to promote continuous professional learning in the construction industry.</p> | <p>1.1 Keep abreast of changes in the construction industry in general and in the construction project management* field in particular.</p> <p>1.2 Identify the roles and benefits of professional organizations and certification e.g., Canadian Construction Association (CCA) Gold Seal Certification.</p> <p>1.3 Develop a plan to keep pace with and adapt to changing workforce demands and trends, as well as technological advances in the construction project management* field.</p> <p>1.4 Identify strategies for building a professional network and for participating in professional associations and activities</p> |
| Course Outcome 2 | Learning Objectives for Course Outcome 2 |
| <p>Upon successful completion, the student will be able to:</p> <p>2. Assess construction project* operations for compliance with contractual obligations, applicable laws, standards, bylaws, codes and ethical practices in construction methodology.</p> | <p>2.1 Determine relevant legislation and bylaws that apply to specific construction projects*.</p> <p>2.2 Assess and interpret a range of contracts, contract offers and acceptances.</p> <p>2.3 Determine required building permits and licenses and monitor construction projects* through required approval processes.</p> <p>2.4 Monitor that all inspections are performed and reported as required.</p> |
| Course Outcome 3 | Learning Objectives for Course Outcome 3 |
| <p>Upon successful completion, the student will be able to:</p> <p>3. Establish and manage relationships among diverse project stakeholders* to achieve construction project* goals.</p> | <p>3.1 Initiate and maintain liaisons with clients, engineers, architects, sub-contractors and vendors and use effective individual and group interpersonal skills.</p> <p>3.2 Identify project stakeholders* and validate stakeholders' expectations, perceptions and motivation.</p> <p>3.3 Formulate and implement stakeholder management strategies to maximize positive influences and mitigate negative impacts.</p> <p>3.4 Collaborate with clients, engineers, architects and others to determine the implementation of construction projects.</p> <p>3.5 Collaborate with local building and planning authorities.</p> <p>3.6 Obtain contracts with architects, vendors, contractors and other workers.</p> <p>3.7 Lead stakeholder meetings and report, in written, graphics and oral formats.</p> <p>3.8 Use appropriate interpersonal skills and terminology suited to the situation and project</p> |



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| | <p>stakeholders.</p> <p>3.9 Use conflict/dispute resolution strategies to resolve conflicts arising during the implementation of construction projects.</p> |
| Course Outcome 4 | Learning Objectives for Course Outcome 4 |
| <p>Upon successful completion, the student will be able to:</p> <p>4. Manage the production, storage, retrieval and communication of project-related digital documents according to best practices, to meet construction project* deadlines and goals.</p> | <p>4.1 Prepare and present formal technical reports, budget forecasts and project estimates.</p> <p>4.2 Select and use appropriate technologies and applications to enhance work performance and support functions, processes and documentation within the construction project management* field.</p> |
| Course Outcome 5 | Learning Objectives for Course Outcome 5 |
| <p>Upon successful completion, the student will be able to:</p> <p>5. Schedule, manage and evaluate the progression of construction projects* by applying the principles, practices and tools of construction project management* to complete projects on time and within budget.</p> | <p>5.1 Establish the phases of the project and their component activities.</p> <p>5.2 Evaluate financial resources, human resources and time-lines of construction projects.</p> |
| Course Outcome 6 | Learning Objectives for Course Outcome 6 |
| <p>Upon successful completion, the student will be able to:</p> <p>6. Develop and oversee quality assurance and control* processes involved in the completion of construction projects* to meet project specifications and industry quality standards.</p> | <p>6.1 Apply the principles and tools of quality management to construction project management* e.g., ISO 9000, Six Sigma.</p> <p>6.2 Develop and integrate quality assurance and control* strategies into the construction project life cycle.</p> <p>6.3 Consider and report on the costs/benefits of methods employed.</p> <p>6.4 Meet relevant quality specifications and standards such as Canadian Standards Association (CSA), ASTM International Standards for Building Design and Construction</p> |
| Course Outcome 7 | Learning Objectives for Course Outcome 7 |
| <p>Upon successful completion, the student will be able to:</p> <p>7. Analyze and manage project risks to mitigate their</p> | <p>7.1 Complete a risk analysis to determine risks associated with specific construction projects* e.g., socioeconomic factors, environmental requirements, organizational relationships or technological problems associated with the design, site or construction</p> |

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| | impact throughout the construction project lifecycle. | processes. 7.2 Evaluate risk responses and modify strategies to produce intended responses throughout the construction project life cycle. |
| | Course Outcome 8 | Learning Objectives for Course Outcome 8 |
| | Upon successful completion, the student will be able to: 8. Formulate human resource management strategies to optimize personnel requirements for construction project* completion. | 8.1 Interpret and work within various collective agreements. |
| | Course Outcome 9 | Learning Objectives for Course Outcome 9 |
| | Upon successful completion, the student will be able to: 9. Build and lead multidisciplinary teams throughout the construction project lifecycle* to accomplish construction project* goals. | 9.1 Use conflict resolution skills to resolve workplace discord. 9.2 Pre-construction and ongoing site meetings and project closure meetings. |
| | Course Outcome 10 | Learning Objectives for Course Outcome 10 |
| | 10. Provide a general background to the process of measuring, recording, maintaining, and summarizing the financial elements of a construction project including cost control. | 10.1 Overview of overhead costs applied to the project including labour and equipment. 10.2 Financial analysis of leasing and financing and the importance of project cash flow. |
| Course Outcome 11 | Learning Objectives for Course Outcome 11 | |
| 11. Provide knowledge necessary to manage a construction site including job site layout, manage documents, materials, tools, and equipment as well as coordinate labour and sub-contracts. | 11.1 Perform Document Control activities. 11.2 Manage site labour and sub-contractors. 11.3 Identify concepts related to quality. 11.4 Establish Monitoring Programs. | |

Evaluation Process and Grading System:

| Evaluation Type | Evaluation Weight |
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| Assignments | 30% |
| Final Exam | 15% |
| Individual Presentation | 20% |

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| | Midterm Exam | 15% |
| | Participation | 20% |

Date: July 13, 2023

Addendum: Please refer to the course outline addendum on the Learning Management System for further information.