Western University - Faculty of Engineering

Department of Civil and Environmental Engineering

CEE 9632a – Advanced Storm Water Management

Course Outline – 2020 FT

COURSE OUTLINE

DESCRIPTION

To understand the issues of urban development related to stormwater quantity and quality control and learn the design of Stormwater Management (SWM) system using SWM Best Management Practices (BMPs) and Low Impact Developments (LIDs). Understand the interdisciplinary nature of stormwater pollution control and provide an insight into the design and modeling of SWM system.

PREREQUISITES

Knowledge in hydrology and hydraulics and familiarity with computers including Excel spreadsheets.

TOPICS

Detailed Tentative Schedule for the Advanced SWM Fall 2020 course is uploaded to OWL. The excel spreadsheet outlines details of the course schedule and topics to be covered etc.

<table>
<thead>
<tr>
<th>Date</th>
<th>Week of</th>
<th>Material Provided</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>September-11-20</td>
<td>September _ 11</td>
<td>• Recorded lectures</td>
<td>Introduction to SWM</td>
</tr>
<tr>
<td>September _ 18</td>
<td>September _ 18</td>
<td>• Recorded lectures</td>
<td>Analytical Tools for Simulation of Stormwater Controls</td>
</tr>
<tr>
<td>September _ 25</td>
<td>September _ 25</td>
<td>• Recorded lectures</td>
<td>Effects of Stormwater on Receiving Waters</td>
</tr>
<tr>
<td>October-02-20</td>
<td>October _ 2</td>
<td>• Recorded lectures</td>
<td>Performance Goals for Stormwater Controls</td>
</tr>
<tr>
<td>October _ 9</td>
<td>Thanksgiving Week</td>
<td>• Recorded lectures</td>
<td></td>
</tr>
<tr>
<td>October _ 16</td>
<td>Selection Criteria and Design Considerations</td>
<td>• Recorded lectures</td>
<td></td>
</tr>
</tbody>
</table>
The date for the final exam will be confirmed and communicated through OWL.

*Oral exam will be scheduled after the final exam with individual student online using Zoom after the final exam.

The course material will be delivered through live synchronous online lecture via zoom every Friday from 4 pm to 7 pm.

The first section of the weekly synchronous online class will be live lecture. The lecture slides will be uploaded to OWL before the lecture. The second section of the weekly synchronous online lecture via zoom will be used for tutorials where term projects and assignments will be discussed.

The lecture slides will be uploaded to OWL before the lecture. The recorded lecture materials will be uploaded to OWL after the class.

**SPECIFIC LEARNING OUTCOMES EVALUATION**

<table>
<thead>
<tr>
<th>Degree Level Expectation</th>
<th>Weight</th>
<th>Assessment Tools</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth and breadth of knowledge</td>
<td></td>
<td>• Assignments</td>
<td>• Understanding of advanced concepts and theories</td>
</tr>
<tr>
<td>Assessment Type</td>
<td>Material Covered</td>
<td>Tentative Due Date</td>
<td>Weight</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-------------------------------------------------------</td>
<td>-------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Assignments</td>
<td>See excel table uploaded to OWL.</td>
<td>Approximately one assignment per two weeks</td>
<td>20%</td>
</tr>
</tbody>
</table>

**ASSESSMENTS**

The final course grade will be based on the assessment of the student in the following subcategories:
<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
<th>Due Date</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Project</td>
<td>See project detail document and project list uploaded under the project Tab in OWL.</td>
<td>Due by December 11, 2020</td>
<td>20%</td>
</tr>
<tr>
<td>Project Presentation</td>
<td>Project report</td>
<td>Due by December 11, 2020</td>
<td>10%</td>
</tr>
<tr>
<td>Quizzes</td>
<td>Topics covered before the quizzes</td>
<td>Approximately every three weeks</td>
<td>10%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>Open book written exam completed while remote proctoring via Zoom.</td>
<td>December 18, 2020</td>
<td>30%</td>
</tr>
<tr>
<td>Oral Exam</td>
<td>Online through Zoom. Material covered in the class.</td>
<td>The week of December 18, 2020</td>
<td>10%</td>
</tr>
</tbody>
</table>

**Activities in which collaboration is permitted:**

Collaboration is allowed in the following activities:

- Course project
  
  Collaboration is allowed within group members but not outside your group.
  
- Project Presentation
  
  Collaboration is allowed within group members but not outside your group.

**Activities in which students must work alone (collaboration is not permitted):**

Collaboration is not permitted in the following activities and the students must work alone:

- Assignments
- Final Exam
- Oral Exam

**CONTACT INFORMATION**

Dr. Imtiaz Shah, FEC, P.Eng.

Adjunct Professor
Department of Civil and Environmental Engineering

ishah5@uwo.ca

Contact policy:

- Contact instructor via email (above) or through messages in OWL
- Weekly Office hours will be held through Zoom as required.

REQUIRED TEXTBOOK

Class notes and reference materials.

OPTIONAL COURSE READINGS

5. PCSWM user’s manual; and
6. Visual Otthymo*and other* user’s Manuals for hydraulic and hydrologic software’s.

COURSE CONTENT

The lecture notes and online lecture videos are copyrighted to the instructor and legally protected. Do not post these videos and lecture notes on any other website or online forums. The recording of the live/synchronous sessions of the course without the permission from the instructor is prohibited. The illegal posting and sharing of the copyrighted course content could be subjected to legal actions.

CHEATING, PLAGIARISM/ACADEMIC OFFENCES

Academic integrity is an essential component of learning activities. Students must have a clear understanding of the course activities in which they are expected to work alone (and what working alone implies) and the activities in which they can collaborate or seek help; see information above under “Assessments” and ask instructor for clarification if needed. Any unauthorized forms of help-seeking or collaboration will be considered an academic offense. University policy states that cheating is an academic offence. If you are caught cheating, there will be no second warning. Students must write their essays and assignments in their own words. Whenever students take an idea or a passage of text from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations. Plagiarism is a major academic offence. Academic offences are taken seriously and
attended by academic penalties which may include expulsion from the program. Students are
directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic
Offence (see Western's scholastic discipline regulations for graduate students).

SYNCHRONOUS LEARNING ACTIVITIES

Students are expected to participate in synchronous learning activities as outlined in the course
syllabus and/or described by the instructor. If you have issues that will impede your ability to
participate in synchronous activities, please discuss with the course instructor at the beginning of
the course.

CONDUCT

Students are expected to follow proper etiquette during synchronous and asynchronous activities
to maintain an appropriate and respectful academic environment. Any student who, in the opinion
of the instructor, is not appropriately participating in the synchronous and asynchronous learning
activities and/or is not following the rules and responsibilities associated with the online learning
activities, will be reported to the Associate Dean (Graduate) (after due warning has been given).
On the recommendation of the Department concerned, and with the permission of the Associate
Dean (Graduate), the student could be debarred from completing the assessment activities in the
course as appropriate.

HEALTH/WELLNESS

As part of a successful graduate student experience at Western, we encourage students to make
their health and wellness a priority. Western provides several health and wellness related services
(remotely accessible) to help you achieve optimum health and engage in healthy living while
pursuing your graduate degree. Information regarding health- and wellness-related services
available to students may be found at http://www.health.uwo.ca/.

Students seeking help regarding mental health concerns are advised to speak to someone they
feel comfortable confiding in, such as their faculty supervisor, their program director (graduate
chair), or other relevant administrators in their unit. Campus mental health resources may be
found at http://www.health.uwo.ca/mental_health/resources.html https://www.uwo.ca/health/psych/index
.html

SICKNESS

Students should immediately consult with the Instructor (for a particular course) or Associate Chair
(Graduate) (for a range of courses) if they have problems that could affect their performance. The
student should seek advice from the Instructor or Associate Chair (Graduate) regarding how best
to deal with the problem. Failure to notify the Instructor or the Associate Chair (Graduate)
immediately (or as soon as possible thereafter) will have a negative effect on any
appeal. Obtaining appropriate documentation (e.g., a note from the doctor) is valuable when
asking for accommodation due to illness.
ACCESSIBILITY

Please contact the course instructor if you require material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Accessible Education at 661-2111 x 82147 or http://academicsupport.uwo.ca/accessible_education/index.html, for any specific question regarding an accommodation.

NOTICE:

Students are responsible for regularly checking their email, and the course OWL site for new notices related to the course.