

University of Alberta
Department of Civil and Environmental Engineering
CIV E 609- Underground Trenchless Construction
Course Outline

Instructor:

Dr. Ali Bayat

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Objective:

The objective of this course is to introduce trenchless technology methods and their importance in public works, pipeline construction, and rehabilitation. Students will be exposed to new topics and concepts through class lectures, specified readings, guest presentations, student seminars, and the completion of assignments. In this course, theory and practice of trenchless construction methods will be explained. Some specific topics of this course are Horizontal Directional Drilling, Pipe Bursting, Microtunneling, Auger Boring, and Cured in Place Pipe Lining.

Course Dates

Lectures: Jan 06 – Apr 09 Wednesday 5:00–8:00 PM In-Person and online via Zoom

Link to Dr. Bayat’s lectures: <https://zoom.us/j/7804925112>

Work Requirement:

All students will be required to participate in class discussions and complete design assignments along with a detailed literature review report and class seminar on a trenchless topic approved by the instructor.

Marking Scheme:

Report	40%
Seminar Presentation	20%
Assignments	30%
Class Participation	10%

Seminar and Report Objective:

- Introduce class to advanced trenchless concepts- try to find topics that are not covered in lectures
- Promote class discussion and learning
- Provide students with a two-page summary that summarizes essential seminar points and references
- Develop presentation and oral communication skills

Report Requirements:

The report is to be written to thesis standards. The following is expected:

- Thorough review of available literature on the chosen topic
- Clearly and concisely written
- Minor spelling and grammatical mistakes
- High quality figures and presentation
- References properly cited
- The following report components
 - Abstract
 - Table of Contents
 - List of Figures
 - List of Tables
 - List of Appendices
 - Main body text
 - Introduction
 - Background
 - Objective
 -
 - Summary
 - Conclusion
 - References
 - Appendix

Maximum number of pages (double space) excluding appendixes is 35 pages. Report will be graded using the following marking scheme:

Description of report goals and objectives	10%
Quality and thoroughness of literature search	25%
Quality of Review	25%
Proper use and citation of references	10%
Quality of writing	10%
Quality of report presentation	10%
Report summary and conclusions	10%

Resource Material

Journals

- No-Dig Engineering
- Tunneling and Underground Space Technology Journal
- Pipeline & Gas Journal
- ASCE, CSCE, TRB

Conference Proceedings

- UCT – Underground Construction Technology
- No-Dig

Magazines

- Trenchless Technology
- Directional Drilling
- Tunnel Business Magazine
- Rehab Showcase
- Underground Construction
- Pipeline News
- Rehabilitation Technology