



Course Number	LAND 612 L01	Classroom	PF 2165
Course Name	Site Technology II: Construction and Materials		
Pre/Co-Requisites			
Instructor	Jim Laidlaw	Office Hours/Location	by appointment
	Email: jim.laidlaw@ucalgary.ca	Phone: 403.510.4755	
Class Dates	Monday and Thursdays, 10:00am to 11:50am		
Instructor Email Policy	Please note that all course communications must occur through jim.laidlaw@ucalgary and I will respond to emails sent via student's @ucalgary emails within 48 hours during the work week (Monday through Friday).		

Course Description

This course is an introduction to the detailed design and construction of landscape features and structures. Throughout the course the construction methods and materials that are particular to traditional and contemporary practices of landscape architecture are discussed. Lectures provide a foundation in traditional and emerging materials and methods, including earth, stone, poured and pre-cast concrete wood, and metal. Other materials, including brick, glass and polymers may be touched on. Sustainable methods and materials are presented throughout the course and include discussions of materials, production methods, energy use, recycled materials, local materials, labor issues and related topics. Historical and contemporary landscape design case studies are presented throughout the term to illustrate specific technologies and to establish a basis for understanding materials and structures within the context of larger projects.

Students will learn about construction drawings relevant to the materials noted, including how to draw and label drawings. Students will also be introduced to construction documents by using standard construction specifications as the template for learning about each specific material. The three sections of a standard specification; General, Products, and Execution will guide the learning process.

Guest lectures by specialists will provide contemporary examples of the various materials used in today's practice. Field observation of construction materials and procedures will be encouraged through an assignment that requires students to document as-built work in the landscape. Field trips may be included to show students real-life Calgary applications of materials.

Teaching Approach

The course will consist of a series of inter-related lectures, reading assignments, site visits, and assignments. Students will participate in class discussions and research, as well as problem solving assignments. Some in-class work may occur under the supervision of guest lecturers and the instructors will give the students hands on experience with contract document preparation.

Guest lecturers will present information on a number of specialized topics.

Content

The course will be organized around lectures on five key building materials.

1. Earth
2. Concrete
3. Stone
4. Wood
5. Metal

The information covered about each material will include the history of its use, the technical aspects of the material and how the material is used, the contemporary use of the material, source of the material, and local sources.

Students will be required to develop a photo journal of materials and construction techniques throughout the course. For each construction material the students will prepare specifications and details that demonstrate their understanding of the topic.

Course Learning Outcomes

The objectives are for students to develop skills and knowledge regarding the following:

1. To understand how the materials and methods of construction in landscape architecture have changed over time.
2. To learn standard methods of technical drawing for detail design of landscape structures, systems and features.
3. To learn about the role of specifications in contract documents and how they can affect the quality of construction.
4. To learn the fundamentals of conventional earth form, stone, concrete, wood, metal, and other materials and construction methods.
5. To understand the relationship between landscape materials, construction techniques and design decisions through lectures, case study analysis and field observations.
6. To learn the basic requirements for the design of landscape walls, screens, stairs, ramps, pavements and related structures.

7. To integrate sustainable materials and practices into the design and construction of landscape structures.
8. To explore emerging materials and methods such as polymers, textiles, green walls, green roofs and porous pavements.
9. To develop a practical and critical approach to working in the rapidly changing contemporary construction industry.

Learning Resources

The following books and resources are recommended but not required.

Holden, Robert, and Jamie Liversedge. 2011. *Construction for Landscape Architecture*. London, UK: Laurence King Publishing.

Hopper, Leonard J., 2007. *Landscape Architectural Graphic Standards, Student Edition*. Hoboken, NJ. Wiley.

City of Calgary Development Guidelines and Specifications for Landscape Construction; [Park development guidelines \(calgary.ca\)](http://www.calgary.ca/developmentguidelines)

Technology requirements (D2L etc.): *For example*: In order to successfully engage in their learning experiences at the University of Calgary, students taking online, remote and blended courses are required to have reliable access to the following technology:

- A computer with a supported operating system, as well as the latest security, and malware updates;
- A current and updated web browser;
- Webcam (built-in or external);
- Microphone and speaker (built-in or external), or headset with microphone;
- Current antivirus and/or firewall software enabled;
- Broadband internet connection

Additional Classroom Conduct and Related Information

Guidelines for Zoom Sessions in Online Classes

If applicable, students are expected to participate actively in in-Class and Zoom sessions and to turn on their webcam. Please join our class in a quiet space that will allow you to be fully present and engaged in the Zoom sessions. Students must behave in a professional manner during the session. Students, employees, and academic staff are also expected to demonstrate behaviour in class that promotes and maintains a positive and productive learning environment.

Assessment Components			
Assessment Method	Description	Weight	Aligned Course Learning Outcome
Attendance	2% off for every unexcused/unnotified absence. Let me know if you will not make a class. Reason for absence is not required; just let me know beforehand.	10%	
Assignments – Assessments & Exercises	All marks, other than attendance, are based on assignment work. Assignments are based on the materials covered in class (earth, concrete, stone, wood, and metal) and include site assessment, plan drawings, detail drawings, product research, specifications, quantity take-offs, and estimating. The exercises are tied to creating a design drawing set and specifications for one theoretical site. The compilation of the work at end of term will be reflective of a drawing set completed for a typical park development project. All assignments are reflective of real-life work that is undertaken in a landscape architecture office.	90%	1 thru 9
Site Assessments	<p>Site assessments are to be completed for each of the materials covered in class. Assessments will be of materials located on existing sites within the Calgary region and will be of the student’s choice. The one-page assessments will include a photo inventory and notes describing the material, including physical application, type, suitability, wear, function, cultural application, and/or recommendations for change of application or material. Mark breakdown will be 50% for handing in the assignment on time and 50% for content.</p> <ul style="list-style-type: none"> • Site Assessment A- Earth Form • Site Assessment B - Stone • Site Assessment C - Concrete • Site Assessment D - Wood • Site Assessment E - Metal 	<p>10%</p> <p style="text-align: right;">2%</p> <p style="text-align: right;">2%</p> <p style="text-align: right;">2%</p> <p style="text-align: right;">2%</p>	1 and 8
Exercises	Each of the exercises includes designs, which focus on the specific material covered in class, and include between one and three tasks. Each task includes plan drawings, details, sections, dimensions, drawing notes, specifications, price schedule, and costing. The percent of mark	80%	1 thru 9

	allocated to each task is somewhat representative of the effort that should be allocated. Expectations for each of the tasks will be provided. There will also be time set aside in class for discussion of the exercise tasks. The expectation for total effort on the assignments should be in the neighbourhood of 100 to 125 hours.		
Exercise #1	Site Layout and Concept Design <ul style="list-style-type: none"> Drawing Sheet Set-Up Concept Layout Plan 	10%	3% 7%
Exercise #2	Earth Works <ul style="list-style-type: none"> Grading Plan 	12%	12%
Exercise #3	Concrete <ul style="list-style-type: none"> Concrete Entry Feature Precast Concrete Paver Plaza Asphalt Pathway 	14%	6% 6% 2%
Exercise #4	Stone Cladding <ul style="list-style-type: none"> Entry Feature Cladding Stand-alone Stone Feature 	8%	5% 3%
Exercise #5	Wood <ul style="list-style-type: none"> Timber Deck/Viewing Platform 	10%	10%
Exercise #6	Metal Metal Railing for Timber Deck Metal Sculptural Element Bench and Trash Receptacles	18%	7% 9% 2%
Exercise #7	Finalize Drawing & Specification Package <ul style="list-style-type: none"> Update and finalize layout plan Complete and compile drawing package, Complete and compile specifications and price schedule 	10%	

Assessment and Evaluation Information

Attendance and Participation Expectations:

Evaluation will be based on class attendance, the site assessments, and completion of the exercises completed during the term. Class participation will include class discussions on specified topics, research, and reporting.

Guidelines for Submitting Assignments:

All assignments to be submitted on D2L. Exercises will be marked on process, content, correctness, completeness, and quality

Final Examinations:

There will be no final examination. Assessment will be done based on the quality of work submitted.

Expectations for Writing (<https://www.ucalgary.ca/pubs/calendar/current/e-2.html>):

Late Assignments:

For site assessments late submissions will be graded on the 50% content only.

For the exercises, late submissions will be deducted 1% of the course mark per day.

Grading Scale				
Grade	Grade Point Value	4-Point Range	Percent	Description
A+	4.00	4.00	95-100	Outstanding - evaluated by instructor
A	4.00	3.85-4.00	90-94.99	Excellent - superior performance showing comprehensive understanding of the subject matter
A-	3.70	3.50-3.84	85-89.99	Very good performance
B+	3.30	3.15-3.49	80-84.99	Good performance
B	3.00	2.85-3.14	75-79.99	Satisfactory performance
B-	2.70	2.50-2.84	70-74.99	Minimum pass for students in the Faculty of Graduate Studies
C+	2.30	2.15-2.49	65-69.99	All final grades below B- are indicative of failure at the graduate level and cannot be counted toward Faculty of Graduate Studies course requirements.
C	2.00	1.85-2.14	60-64.99	
C-	1.70	1.50-1.84	55-59.99	
D+	1.30	1.15-1.49	50-54.99	
D	1.00	0.50-1.14	45-49.99	
F	0.00	0-0.49	0-44.99	

A student who receives a "C+" or lower in any one course will be required to withdraw regardless of their grade point average (GPA) unless the program recommends otherwise. If the program permits the student to retake a failed course, the second grade will replace the initial grade in the calculation of the GPA, and both grades will appear on the transcript.

Topic Areas & Detailed Class Schedule			
<i>Refer to D2L for a detailed class schedule and reading list</i>			
Week	Course Schedule Date	Topic	Assignments/Due Dates
Week 1	M Jan 10	Course Introduction	
	R Jan 13	Drawing Standards Overview	Exercise 1 release

Week 2	M Jan 17	Specifications Overview	
	R Jan 20	Unit Price Schedules and Cost Estimating	
Week 3	M Jan 24	Earth Lecture 1	Site Assessment A released Exercise 2 release
	R Jan 27	Earth Lecture 2 – grading design work session	Exercise 1 Due
Week 4	M Jan 31	Earth Lecture 3 – grading design work session	Site Assessment A due
	R Feb 3	Concrete Lecture 1	Exercise 2 Grading Plan Due Site Assessment B release Exercise 3 release
Week 5	M Feb 7	Concrete Lecture 2	
	R Feb 10	Concrete Lecture 3	Site Assessment B due
Week 6	M Feb 14	Concrete Lecture 4	Exercise 3 Concrete due
	R Feb 17	Stone Lecture 1	Site Assessment C release Exercise 4 release
	Feb 21-25	Term Break	
Week 7	M Feb 28	Stone Lecture 2	
	R Mar 3	Stone Lecture 3	Site Assessment C due
Week 8	M Mar 7	Wood Lecture 1	Site Assessment D release Exercise 5 release
	R Mar 10	Wood Lecture 2	
Week 9	M Mar 14	Wood Lecture 3	Exercise 4 Stone Fascia due Site Assessment D due
	R Mar 17	Wood Lecture 4	
Week 10	M Mar 21		Exercise 5 Wood due
	R Mar 24	Metal Lecture 1	Site Assessment E and Exercise 6 release
Week 11	M Mar 28	Metal Lecture 2	
	R Mar 31	Metal Lecture 3	Site Assessment E due
Week 12	M Apr 4	Other materials	Exercise 6 due Exercise 7 release
	R Apr 7	Other materials	
Week 13	M Apr 11	Bioretention Lecture	Exercise 7 Due
	April 12	Last Day of Classes	

Special Budgetary Requirements

This course requires the use of computer aided design and drafting or graph paper, pens and scale rulers as well as other basic drafting supplies.

University of Calgary Policies and Supports

COVID-19 PROCEDURE FOR SICK STUDENTS: <https://ucalgary.ca/risk/sites/default/files/Covid-19%20Folder/COVID-19-Procedure-for-Sick-Students.pdf>

ACADEMIC ACCOMMODATION

It is the student's responsibility to request academic accommodations according to the University policies and procedures listed below. The Student Accommodations policy is available at <https://ucalgary.ca/student-services/access/prospective-students/academic-accommodations>.

Students needing an accommodation based on disability or medical concerns should contact Student Accessibility Services (SAS) in accordance with the Procedure for Accommodations for Students with Disabilities (<https://www.ucalgary.ca/policies/files/policies/procedure-for-accommodations-for-students-with-disabilities.pdf>). Students who require an accommodation in relation to their coursework based on a protected ground other than Disability should communicate this need in writing to their Instructor.

SAS will process the request and issue letters of accommodation to instructors. For additional information on support services and accommodations for students with disabilities, visit www.ucalgary.ca/access/.

ACADEMIC MISCONDUCT

Academic Misconduct refers to student behavior which compromises proper assessment of a student's academic activities and includes: cheating; fabrication; falsification; plagiarism; unauthorized assistance; failure to comply with an instructor's expectations regarding conduct required of students completing academic assessments in their courses; and failure to comply with exam regulations applied by the Registrar.

For information on the Student Academic Misconduct Policy and Procedure please visit: <https://ucalgary.ca/policies/files/policies/student-academic-misconduct-policy.pdf>
<https://ucalgary.ca/policies/files/policies/student-academic-misconduct-procedure.pdf>

Additional information is available on the Academic Integrity Website at <https://ucalgary.ca/student-services/student-success/learning/academic-integrity>.

COPYRIGHT LEGISLATION:

All students are required to read the University of Calgary policy on Acceptable Use of Material Protected by Copyright (www.ucalgary.ca/policies/files/policies/acceptable-use-of-material-protected-by-copyright.pdf) and requirements of the copyright act (<https://laws-lois.justice.gc.ca/eng/acts/C-42/index.html>) to ensure they are aware of the consequences of unauthorised sharing of course materials (including instructor notes, electronic versions of textbooks etc.). Students who use material protected by copyright in violation of this policy may be disciplined under the Non-Academic Misconduct Policy (<https://www.ucalgary.ca/pubs/calendar/current/k.html>).

INSTRUCTOR INTELLECTUAL PROPERTY

Course materials created by instructors (including presentations and posted notes, labs, case studies, assignments and exams) remain the intellectual property of the instructor. These materials may NOT be reproduced, redistributed or copied without the explicit consent of the instructor. The posting of course materials to third party websites such as note-sharing sites without permission is prohibited. Sharing of extracts of these course materials with other students enrolled in the course at the same time may be allowed under fair dealing.

FREEDOM OF INFORMATION AND PROTECTION OF PRIVACY

Student information will be collected in accordance with typical (or usual) classroom practice. Students' assignments will be accessible only by the authorized course faculty. Private information related to the individual student is treated with the utmost regard by the faculty at the University of Calgary.

SEXUAL VIOLENCE POLICY

The University recognizes that all members of the University Community should be able to learn, work, teach and live in an environment where they are free from harassment, discrimination, and violence. The University of Calgary's sexual violence policy guides us in how we respond to incidents of sexual violence, including supports available to those who have experienced or witnessed sexual violence, or those who are alleged to have committed sexual violence. It provides clear response procedures and timelines, defines complex concepts, and addresses incidents that occur off-campus in certain circumstances. Please see the policy available at <https://www.ucalgary.ca/policies/files/policies/sexual-violence-policy.pdf>

UNIVERSITY STUDENT APPEALS OFFICE: If a student has a concern about the course, academic matter, or a grade that they have been assigned, they must first communicate this concern with the instructor. If the concern cannot be resolved with the instructor, the student can proceed with an academic appeal, which normally begins with the Faculty. <https://www.ucalgary.ca/secretariat/student-appeals>

OTHER IMPORTANT INFORMATION

Please visit the Registrar's website at:

<https://www.ucalgary.ca/registrar/registration/course-outlines> for additional important information on the following:

- Wellness and Mental Health Resources
- Student Success
- Student Ombuds Office
- Student Union (SU) Information
- Graduate Students' Association (GSA) Information
- Emergency Evacuation/Assembly Points
- Safewalk