



Winter 2024

Course Number	LAND 672.2 L02	Classroom	PF 3160
Course Name	Plant Material Cultivation		
Pre/Co-Requisites			
Instructor	Dr. Steven Tannas	Office Hours/Location	By appointment
	Email: steven.tannas@ucalgary.ca	Phone: 403 850 9052	
Class Dates	Feb 12-16 9am to 1pm		
Instructor Email Policy	Please note that all course communications must occur through your @ucalgary email, and I will respond to emails sent via student's @ucalgary emails within 48 hours.		
Name and Email of Teaching Assistant(s)			

Course Description:

Landscape architects are responsible for specifying plant materials for numerous types of challenging environments such as boulevards, public parks, stormwater features, and naturalization projects. A thorough understanding of planting stock, growing mediums, and establishment techniques is required to successfully implement planting projects in these settings. LAND 672 will introduce students to the materials and methods for successfully establishing plant materials in the semi-arid, climate of southern Alberta with special consideration to our unique environmental conditions.

Teaching Approach

LAND 672 will be delivered through in-person lectures and a field trip. Students will receive hands-on instruction where they will see how plant materials are propagated in a nursery and see soil mixing, and propagation hands on and will prepare drawings and written specifications for a planting project such as a street boulevard pollinator garden, riverbank habitat restoration, or stormwater facility water treatment.

Course Hours: 1.5 units (3-0)

Course Learning Outcomes:

Upon successful completion of the course, you should have developed an understanding of the knowledge, skills, and technologies involved in the following:

- 1) To gain an increased awareness of how important it is for landscape architects to be proficient with plant materials, growing medium specifications, and plant establishment
- 2) Understand the strengths and weaknesses of native plant materials and how to successfully utilize them in designs.
- 3) Understand the challenges for establishment of plants in challenging urban environments including: stormwater systems (treating water with plant materials), riverbank bioengineering design principles boulevards, public gardens, and natural area parks
- 4) Understanding the basic components of growing mediums and how they are specified for challenging urban environments
- 5) Understand the range of planting stock and how to specify the correct type of planting stock for various settings.
- 6) Begin executing planting specifications at a small scale that will enable the student to apply knowledge in future courses/studios and in professional practice.

LAND 672 Plant Material and Cultivation – Winter 2023 Schedule

Feb 12: Day 1 In Class

- Dr. Tannas provide: An overview site assessment principle and how to use them in design (i.e. climate, local environment, soil conditions, disturbance regimes...). A specific focus on the unique climate of Southern Alberta and how to select appropriate species and stock will be included.
- Plant materials: cultivation, propagation methods, plant material types and how to successfully utilize each type of material.
- Introduce the assignment and evaluation criteria

Feb 13: Day 2 In Class (Case Studies and Practical Design Principles)

- Principles of bioengineering and case studies from the 2013 floods of success and failures in bioengineering designs and habitat restorations along the Bow and Elbow Rivers within Calgary
- Use of native plant materials to remediate contamination in stormwater, dugouts, golf courses and other waterbodies. Design of soil mediums and plant materials for successful water treatment.

Feb 14: Day 3 Field Trip (Eastern Slopes Rangeland Seeds Ltd, Tannas Conservation Services Ltd. And GP Restoration Solutions Inc.)

- Eastern Slopes Rangeland Seeds Ltd.
- Native plant material propagation overview
- Stock selection for different projects
- GP Restoration Solutions Inc.
- Floating island system for storm water remediation
- Native Seed harvesting equipment, and Seed cleaning facilities

Feb 15: Day 4 Field Trip (Seed Mix Design) In Class (If students have a laptop bring it to this class)

- Seed mix Design principles and creation of a seed mix calculator
- Seed cleaning and Processing techniques
- Source identified seed collection

- Seed Certificate Interpretation
- Day 4 Field Trip (Seed Mix Design)

Feb 16: Day 5 In Class

- Students present their work
- Evaluation of presentations

COURSE MATERIALS

MANDATORY COURSE MATERIALS

- *Plant Material Selection and Seed Mix Design for Native Grassland Restoration Projects* <https://www.tannasenvironmental.com/project/publications.html/> (Course Material)

COURSE BIBLIOGRAPHY (recommended, not required to complete the course).

Trees and Shrubs Identification

- *Trees in Canada*, by John Laird Farrar (1995 or 2017 version)
- *Sibley Guide to Trees*, by David Allen Sibley (2009)
- *Illustrated Keys to the Conifers of Alberta* (Native Species Only), by Linda Kershaw and Lorna Allen (2019): <https://anpc.ab.ca/wp-content/uploads/2019/04/Gymnosperms-2019-04.pdf>

Herbaceous Plant Identification (Flowering Perennials, Grasses, and Annuals)

- *Common Plants of the Western Rangelands: Volume 1, 2 and 3* (K.E. Tannas)
- *Botany in a Day: The Patterns Method of Plant Identification*, by Thomas Elpel (2013)
- *Plant Identification Terminology: An Illustrated Glossary*, by James & Melinda Harris (2001)

Guides to Using Trees in the Landscape

- *Woody Ornamentals for the Prairies*, by Hugh Knowles (2003)
- *Trees and Shrubs for the Northern Plains*, by D. Hoag (1965)
- *Heritage Trees of Alberta*, by Libby Fairweather (2008)
- *Dirr's Hardy Trees and Shrubs: An Illustrated Encyclopedia*, by Michael Dirr (2011)
- *Landscaping with Native Trees*, by Guy Sternberg & Jim Wilson (1996)

Planting Design

- *The Planting Design Handbook*, by Nick Robinson (1992)
- *With People in Mind: Design and Management of Everyday Nature*, by R. Kaplan & S. Kaplan (1998)
- *Planting in a Post-Wild World*, by Thomas Rainer & Claudia West (2015)
- *The Living Landscape: Designing for Beauty and Biodiversity in the Home Garden*, by Rick Darke & Douglas Tallamy (2014)
- *Designing Urban Agriculture: A Complete Guide to the Planning, Design, Construction, Maintenance and Management of Edible Landscapes*, by April Philips (2013)

Internet Resources

- *Integrated Taxonomic Information System (ITIS)*: <https://www.itis.gov/> (for verifying scientific names)
- *Eagle Lake Nursery*: <http://search.eaglelakenurseries.com/11050003/> (local nursery)
- *Significant Trees of Alberta* (new, in development): <http://ab.registreenet.com/>
- *Eastern Slopes Rangeland Seeds Ltd*: <https://esrseeds.ca/> (local native plant nursery)
- *Wild About Flowers*: <https://www.wildaboutflowers.ca/> (local native plant nursery)
- *ALCLA Native Plants*: <https://alclanativeplants.com/> (local native plant nursery)
- *Alberta Native Plant Council*: <https://anpc.ab.ca/>
- *Alberta Trees of Renown: An Honour Roll of Alberta Trees* (1986): <http://cfs.nrcan.gc.ca/pubwarehouse/pdfs/24292.pdf>
- *Calgary Urban Forestry Strategic Plan*: <https://www.calgary.ca/CSPS/Parks/Documents/Management-Plans/Urban-Forestry-Strategic-Plan.pdf?noredirect=1>
- *Heritage Trees in Calgary*: <https://data.calgary.ca/Environment/Heritage-Trees-in-Calgary/qmxc-agg2>

Assessment Components:

Assessment Method	Description	Weight	Aligned Course Learning Outcome
Planting Method Assignment	Students will create a planting and seeding plan for a site utilizing native species	100%	e.g. 1 and 3

Assessment and Evaluation Information

Attendance and Participation Expectations:

Class attendance and participation are essential elements in the learning process. There may be times when it is not possible for you to attend class. Please notify the instructor prior to your absence, if possible. Missing more than 25% of class hours may result in a failing grade for the course.

Final Examinations: No final exam will exist for this course

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

Final grades will be reported as letter grades, with the final grade calculated according to the 4-point range. Assignments will be evaluated by percentage grades, with their letter grade equivalents as shown

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	

Notes: 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

University of Calgary Policies and Supports

ACADEMIC ACCOMMODATION

It is the student's responsibility to request academic accommodations according to the University policies and procedures listed below. The student accommodation policy can be found at: <https://www.ucalgary.ca/legal-services/university-policies-procedures/student-accommodation-policy>

Students needing an accommodation because of a disability or medical condition should communicate this need to Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities: <https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Accommodation-for-Students-with-Disabilities-Procedure.pdf>. Students needing an accommodation in relation to their coursework or to fulfil requirements for a graduate degree, based on a Protected Ground other than Disability, should communicate this need, preferably in writing, to their instructor (contact information on first page above).

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://www.ucalgary.ca/legal-services/university-policies-procedures/student-academic-misconduct-policy>

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 (<https://www.ucalgary.ca/legal-services/university-policies-procedures/acceptable-use-material-protected-copyright-policy>) 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 AND GENDER-BASED 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/legal-services/university-policies-procedures/sexual-and-gender-based-violence-policy> .

UNIVERSITY STUDENT APPEALS OFFICE

If a student has a concern about a grade that they have received, they should refer to Section I of the Undergraduate Calendar (<https://www.ucalgary.ca/pubs/calendar/current/i-3.html>) which describes how to have a grade reappraised. In addition, the student should refer to the SAPL's Procedure for reappraisal of grades

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