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](https://www.tannasenvironmental.com/project/publications.html) (Course Material)

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

Trees and Shrubs Identification

Herbaceous Plant Identification (Flowering Perennials, Grasses, and Annuals)
- *Common Plants of the Western Rangelands: Volume 1, 2 and 3* (K.E. Tannas)

Guides to Using Trees in the Landscape
- *Trees and Shrubs for the Northern Plains*, by D. Hoag (1965)

Planting Design

Internet Resources
• Integrated Taxonomic Information System (ITIS): [https://www.itis.gov/](https://www.itis.gov/) (for verifying scientific names)
• Eastern Slopes Rangeland Seeds Ltd: [https://esrseeds.ca/](https://esrseeds.ca/) (local native plant nursery)
• Wild About Flowers: [https://www.wildaboutflowers.ca/](https://www.wildaboutflowers.ca/) (local native plant nursery)
• ALCLA Native Plants: [https://alclanativeplants.com/](https://alclanativeplants.com/) (local native plant nursery)
• Alberta Native Plant Council: [https://anpc.ab.ca/](https://anpc.ab.ca/)

### Assessment Components:

<table>
<thead>
<tr>
<th>Assessment Method</th>
<th>Description</th>
<th>Weight</th>
<th>Aligned Course Learning Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planting Method Assignment</td>
<td>Students will create a planting and seeding plan for a site utilizing native species</td>
<td>100%</td>
<td>e.g. 1 and 3</td>
</tr>
</tbody>
</table>

### 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](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:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Grade Point Value</th>
<th>4-Point Range</th>
<th>Percent</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.00</td>
<td>4.00</td>
<td>95-100</td>
<td>Outstanding - evaluated by instructor</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>---</td>
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<td></td>
</tr>
<tr>
<td>A</td>
<td>4.00</td>
<td>3.85-4.00</td>
<td>90-94.99</td>
<td>Excellent - superior performance showing comprehensive understanding of the subject matter</td>
</tr>
<tr>
<td>A-</td>
<td>3.70</td>
<td>3.50-3.84</td>
<td>85-89.99</td>
<td>Very good performance</td>
</tr>
<tr>
<td>B+</td>
<td>3.30</td>
<td>3.15-3.49</td>
<td>80-84.99</td>
<td>Good performance</td>
</tr>
<tr>
<td>B</td>
<td>3.00</td>
<td>2.85-3.14</td>
<td>75-79.99</td>
<td>Satisfactory performance</td>
</tr>
<tr>
<td>B-</td>
<td>2.70</td>
<td>2.50-2.84</td>
<td>70-74.99</td>
<td>Minimum pass for students in the Faculty of Graduate Studies</td>
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<tr>
<td>C+</td>
<td>2.30</td>
<td>2.15-2.49</td>
<td>65-69.99</td>
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</tr>
<tr>
<td>C</td>
<td>2.00</td>
<td>1.85-2.14</td>
<td>60-64.99</td>
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</tr>
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<td>C-</td>
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<tr>
<td>D+</td>
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<td>0.00</td>
<td>0-0.49</td>
<td>0-44.99</td>
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</table>

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](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](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/](http://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

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