Course Description: The goal of the course is to provide you with the knowledge and skills—via hands-on experience—that you need to be able to identify plants as well as to understand the fundamental composition and basic ecology of plant communities and ecosystems in Nova Scotia. Nova Scotia is one of the most ecologically diverse provinces in Canada. There are a range of plant communities adapted to a variety of environments, from the hostile coastal barrens to the Acadian forest interior. Via hands-on experience, we will determine the composition of these ecological communities, and to identify the plants within them. We will catalog herbarium-quality specimens, and collectively contribute to a field guide for plants of Nova Scotia. We will also explore the economic, edible and medicinal uses of the plants we find (and maybe make some rope!).

Instructor: Alana Westwood      Phone: 902.818.6062, Email: a.westwood@dal.ca

Demonstrator: Ingrid Plache     Phone: 902.475.1129, Email: iplache@gmail.com

Prerequisite: One completed year of University studies.

Date/Time: Class begins 9:05 am, Monday July 27 and ends 4:55 pm, Friday August 14, 2014. Class meets every Mon to Fri with the inclusion of one Saturday (August 1) and the exclusion of the following Monday (August 3, a holiday). Additional work is expected outside of class time. The field trip schedule is NOT weather dependent—be prepared for less-than-ideal conditions.

Do not make other commitments for the duration of the class, as you will be fully occupied.

Schedule: The typical schedule for non-field trip days is:

- 9:05 am - 11:55 pm  
  Lecture: Discussion/Question Periods
- 11:55 pm - 1:05 pm  
  Lunch break
- 1:05 pm - 4:55 pm  
  Laboratory: working with plant material and collections

Classrooms: Lectures in LSC C220    Labs in LSC 4009

Field Trips: All field trips are full days. Students are expected to arrive on time with the appropriate equipment AND be prepared for the anticipated weather and all conditions on the field trips. Transportation by bus is provided for all trips, except for Point Pleasant Park.

NOTE: there are no washroom facilities at Windsor Basin, Duncan’s Cove, or Conrad Beach and we will be there all day—a word to the wise...
Required Resource Books:

1) *The Flora of Nova Scotia* (A.E. Roland & E.C. Smith, 1969, Nova Scotia Museum/Nova Scotian Institute of Science; available for $35 from Reference and Research Services Rm 3621, Killam Library cash or cheque only. This resource has been put online by Dalhousie Library. Go to dalspace.library.dal.ca/ and search on Flora of Nova Scotia Part I and Part II. But you will need a hard copy for this course.

2) *How to Identify Plants* (H. D. Harrington, 1957, Swallow Press; new and used copies available from various booksellers through Amazon, and at the Dal bookstore.

3) *Forest Ecosystem Classification Guide to Nova Scotia*. Available online (no need to print, copies will be provided).

Required Equipment for Labs:
- Hand lens 10 x power (available at bookstore or checked out from instructors)
- Plant Press (checked out from DAL Biology from instructors during class)
- Ring Binder for plant collection
- White glue for mounting plants. Sheets for mounting plants and labels for sheets are provided

*Note that items checked out must be returned*, cleaned out and ready for their next use (i.e. in the same condition you got it) on the last day of class unless prior arrangements have been made.

Required Equipment for Field Trips:
- Small day/backpack,
- Lunch/snacks/water (enough to last a full day in the field, potentially under hot sun)
- Rain gear, long pants, long-sleeved shirt
- Sun hat and sunscreen
- Insect repellant and/or bug hat
- Hiking boots or sturdy walking shoes
- A field notebook (provided) plus pencils/pens
- A clipboard or fold-flat binder will be useful
- Plant collecting equipment including bags for collecting plants, trowel, and pruner
- Camera/binoculars/any other equipment you deem necessary for a day in the field

Your Responsibilities:

1. **Attendance is mandatory.** You are expected to attend all lectures, labs, and field trips. Attendance will be taken and unnecessary, unplanned absences will considered toward your grade. If there will be a problem that prevents you from attending any class meeting, notify the instructor or TA before the absence.

2. **Participation.** You are expected to participate and cooperate in all class activities. Bonus marks may be awarded to students who regularly contribute meaningful remarks/questions/dialog in class.

3. **Preparation for Field Trips.** Please be fully prepared and ready for all field trips. You are responsible for your own lunches/water, appropriate clothing, and needed and required equipment
as per the included lists. Transportation is provided for all field trips except Point Pleasant Park.

4. **Safety.** You must adhere to all safety guidelines. When out of sight of instructors, you must stay in groups of 2 or more and inform instructors of where you will be going and when you will be back. Alcoholic beverages are not permitted on field trips.

5. **BbLearn:** We will use the online learning system to post class information and links to helpful web sites. Lecture slides will be posted on dal.blackboard.com, as well as your selections for the Field Guide Wiki assignment.

**Evaluation/Grading:**

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Due date</th>
<th>Grade</th>
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<tbody>
<tr>
<td>Plant Collection</td>
<td>August 14</td>
<td>40%</td>
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<tr>
<td>Field Guide Wiki</td>
<td>August 16</td>
<td>25%</td>
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<tr>
<td>Lab/Lecture Exam</td>
<td>August 13</td>
<td>25%</td>
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<tr>
<td>Field Notebook</td>
<td>August 14</td>
<td>5%</td>
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<tr>
<td>Plant Presentation</td>
<td>July 13/14</td>
<td>5%</td>
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*Each assignment will be accompanied by a sheet detailing specific expectations and marking standards.*

**Plant Collection:** You will each assemble, describe and mount a collection of botanical specimens (40% of your grade) containing a *minimum* of 25 “herbarium-quality” specimens of different species from as many different plant families as possible. The more families that are represented in a collection, together with the best descriptions (determination/location labels) and care and attention to specimen preparation and mounting, the higher the potential grade. Considering that there are more than 1600 sp. to choose from, a collection of 25+ species should be a “walk in the park”.

Your collection should contain at least 2 Pteridophytes (ferns and their allies), 2 Gymnosperms (conifers and their relatives, with no more than 10 tree species total), and the rest of your collection should be approximately representative of the province’s angiosperm flora (*i.e.* 25% monocots and 75% dicots, including grasses, shrubs, etc.). Inclusion of known rare, threatened or endangered species will result in severe grade reduction—if in doubt about a species’ status, ASK! Further instructions and information will be presented on the first class day, and refined throughout the duration of the course.

**Field Guide Wiki:** There is no published field guide for plants of Nova Scotia, therefore, we will collectively crowd-source our own! Each student will choose one plant and produce an identification sheet for our field guide according to a provided template. You will also choose an entry from last year’s field guide by a previous student, and edit/improve the entry. You will be responsible for providing identifying characteristics, information on range and distribution, FEC associations, and other uses/interesting facts. Field photos and/or drawings will be an asset.

**Plant Presentation:** You will give a 10 minute presentation (7 minutes of presentation, 3 minutes for questions) to the class on one your selected field guide wiki plant. Original photos and a mounted specimen to pass around will be helpful.
**Field Notebook:** When in the field, it is essential to document everything you see that may be relevant to collected data. Employers keep copies of field notes, thus it is important to develop skills of taking complete, accurate, and legible notes. During each of our field trips, you will note the plants you observe as well as their ecological context and the FEC classification of the area. Your detailed, readable field notebook is due at the end of the course.

**Exam:** You will be responsible for identifying specimens in a lab setting, as well as answering questions about their biology and ecology. Although identification materials will be provided (keys, Flora of NS book), it is up to you to understand how to use them, answer questions with appropriate terminology. The exam will also include definitions and short answers from lecture material.

**Grading scale:** The grading scale in accordance with the Dalhousie Common Grade Scale:

- 90-100 A+
- 85-89 A
- 80-84 A-
- 77-79 B+
- 73-76 B
- 70-72 B-
- 65-69 C+
- 60-64 C
- 55-59 C-
- 50-54 D
- <50 F

**Schedule:** The Lecture/Lab schedule below could be subject to further change. You will be informed ASAP if there are any changes. Note the **dates of the field trips—field trips will occur, rain or shine, on the days indicated.**

<table>
<thead>
<tr>
<th>Course Day</th>
<th>Date</th>
<th>Morning</th>
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| 1          | Mon, Jul 27| 1. Course introduction  
2. What is botany (language, floras, manuals, field guides, nomenclature)  
3. Introduction to Forest Ecosystem Classification  
4. Assignment of field guide wiki and presentation  
5. Orientation to afternoon field trip | **Field trip to Point Pleasant Park, Flora of Nova Scotia in an urban setting (walk, take bus or drive to park on your own)** |
| 2          | Tues, Jul 28| 1. Plant morphology (roots, shoots, leaves, inflorescences, fruiting)  
2. Rare species and species at risk, Atlantic Coastal Plain flora  
3. Introduction to paper for discussion **Campus collecting field trip** | Introduction to field records and plant collection, assignment of plant collection and field notebook.  
Tools of plant ID: using a dissecting microscope, hand lens, keys and glossaries  
Plant groups, identification demo, keying exercises recognizing native trees |
| 3          | Wed, Jul 29 | 1. Non-seed plants: classification, recognition, and characteristics of lycopodiophyta, pteridophyta  
2. Primer on ecological succession and adaptation  
3. Field trip safety; orientation to field trip 2  
4. Discussion on provided paper | Flower forms and terminology  
Floral diagrams and notation  
Plant collection identification and preparation time |
| 4          | Thurs, Jul 30 | **Field Trip 2, Duncan’s Cove: Bog and coastal barrens** |
| 5          | Fri, Jul 30 | 1. Seed plants: classification, recognition,  
2. Discussion on provided paper | Ferns and their relatives |
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<tr>
<th>Date</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>Jul 31</td>
<td>and characteristics of coniferophyta, anthophyta (eudicots)</td>
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<td>2. Disturbance regimes in Nova Scotia</td>
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<td>3. Orientation to field trip 3</td>
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<td>Coniferous shrubs</td>
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<td>Sat, Aug 1</td>
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<td>Eudicots, focus on asteraceae</td>
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<td>Plant collection identification and preparation time</td>
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<td>Thurs, Aug 6</td>
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<td>Grasses, sedges, and rushes</td>
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<td>Plant collection identification and preparation time</td>
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<td>Collection preparation time</td>
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<td>10</td>
<td>Fri, Aug 7</td>
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<td>Mon, Aug 10</td>
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<td>12</td>
<td>Tues, Aug 11</td>
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<td>Lab exam</td>
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<td>Final collection preparation time, hand in by 4:55 PM</td>
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**Statement on Academic Integrity**

At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect (The Center for Academic Integrity, Duke University, 1999). As a student, you are required to demonstrate these values in all of the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity.

What does academic integrity mean? At university we advance knowledge by building on the work of other people. Academic integrity means that we are honest and accurate in creating and communicating all academic products. Acknowledgement of other people’s work must be done in a way that does not leave the reader in any doubt as to whose work it is. Academic integrity means trustworthy conduct such as not cheating on examinations and not misrepresenting information. It’s the student’s responsibility to seek assistance to ensure that these standards are met.

How can you achieve academic integrity? We must all work together to prevent academic
dishonesty because it is unfair to honest students. Make sure you understand Dalhousie’s policies on academic integrity (see academicintegrity.dal.ca/Policies/).

The following are some ways that you can achieve academic integrity. These examples should be considered only as a guide and not an exhaustive list.

- Do not cheat in examinations or write an exam or test for someone else.
- Do not falsify data or lab results.
- Avoid plagiarizing, intentionally or unintentionally, for example...
  - Clearly indicate the sources used in your written or oral work. This includes scientific papers, web pages, graphical representations, diagrams, videos, and images.
  - Do not use the work of another from the Internet or any other source and submit it as your own.
  - When you use the ideas of other people (paraphrasing), make sure to acknowledge the source.
  - Do not submit work that has been completed through collaboration or previously submitted for another assignment without permission from your instructor.

Where can you turn for help? If you are ever unsure about any aspect of your academic work, contact us.

- Academic Integrity website (see http://academicintegrity.dal.ca/) - Links to policies, definitions, online tutorials, tips on citing and paraphrasing.
- Writing Centre (see http://writingcentre.dal.ca/) - Assistance with learning to write academic documents, organization, argument, transitions, writing styles and citations.
- Dalhousie Libraries (see http://www.library.dal.ca/) - Workshops, online tutorials, citation guides, RefWorks.
- Dalhousie Student Advocacy Service (see http://www.dsu.ca/services/advocacy) - Assists students with academic appeals and student discipline procedures.
- Senate Office (senate.dal.ca) - List of Academic Integrity Officers, discipline flowchart, Senate Discipline Committee.

What will happen if an allegation of an academic offence is made against you? As your instructors, we are required to report every suspected offence. The full process is outlined in the Faculty Discipline Flow Chart (senate.dal.ca/Files/AIO_/AcademicDisciplineProcess_Flowchart_updated_July_2011.pdf) and includes:

- Each Faculty has an Academic Integrity Officer (AIO) who receives allegations from instructors.
- Based on the evidence provided, the AIO decides if there is evidence to proceed with the allegation and you will be notified of the process.
  - If the case proceeds, you will receive a PENDING grade until the matter is resolved.
  - If you are found guilty of an offence, a penalty will be assigned ranging from a warning, to failure of the assignment or failure of the class, to expulsion from the University.
  - Penalties may also include a notation on your transcript that indicates that you have committed an academic offence.