Northwest Plants – Fall 2016

"People are like plants: they grow toward the light."
— Hope Jahren

Course ENVS 201, Northwest Plants (5 credits)

Meeting Details Tuesdays and Thursdays from 9:00-10:20 am (lecture) and Thursdays from 2:15-5:30 pm (lab) in NES 113 (in Building 16)
(Note: Lab sessions regularly also include off-campus field trips.
Unless otherwise indicated, we will meet in NES 113 prior to departing for field trips.)

Instructor Information

Instructor: Brian D. Compton, Ph.D.
Office Location: Kwina Office/Classroom Complex #110 (in Building 15)
Office Hours: As posted and by appointment
Telephone: (360) 392-4321
Fax: 360-392-4333 (c/o NWIC Enrollment Services, "ATTN: Brian Compton")
Email: bcompton@nwic.edu
Blog: http://blogs.nwic.edu/briansblog/

Science Writing Mentor Information

Please note that this course involves several writing assignments that are to be developed through collaboration with the Science Writing Mentor at Northwest Indian College, whose contact and availability information is presented below. Please consult with her for further details regarding her availability and turn-around time for reviewing and providing editorial feedback on writing assignments.

Writing Mentor: Lynda Jensen, M.A.
Office Location: When not in class, Ms. Jensen is most reliably found in her office in the Testing Center (in Building 17) or in the Science Lounge (room NE106 in Building 16).
Mentor Hours: 1:00-5:00 pm Monday-Thursday; all day Friday
Telephone: (360) 392-4303
Email: ljensen@nwic.edu

TRiO Writing Mentor Information

Northwest Indian College (NWIC) is the recipient of funding from the U.S. Department of Education's TRiO program to provide academic and related support to NWIC students. The TRiO Writing Mentor's contact and availability information is presented below:

Writing Mentor: Stephanie Manzo
Office Location: Center for Student Success (Building 17)
Mentor Hours: 2:00-4:00 pm Thursdays in the Science Lounge (room NE106 in Building 16)
Email: smanzo@nwic.edu

Writing Mentor: Jay Niver
Office Location: Center for Student Success (Building 17)
Mentor Hours: to be determined
Email: jniver@nwic.edu

Disclaimer: This syllabus is tentative and subject to change by the instructor.

Course Description
Field-based course designed to acquaint students with the flora of the Northwest. Covers identification, ecology, and traditional uses of regional flora. Lab included. (NSL, NASD) Prerequisites: None.

Service Learning
This course will include a service learning component to be announced in class.

Course Overview and Rationale

Plants, the hair of the Earth Mother: Some Native Americans consider plants to be the "hairs" of Mother Earth who feels each time humans pull plants from her. Proper offerings to her when harvesting plants ensures that she is not hurt too much and that humans understand their relationship to her. This relates to the honor and understanding accorded to the reciprocal relationship between all life and Nature (Cajete 1994, pp. 101-102).

Plants and the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP, in part): "Indigenous peoples have the right to their traditional medicines and to maintain their health practices, including the conservation of their vital medicinal plants, animals and minerals" appears in Article 24, Paragraph 1 of the UNDRIP. "Indigenous peoples have the right to maintain and strengthen their distinctive spiritual relationship with their traditionally owned or otherwise occupied and used lands, territories, waters and coastal seas and other resources and to uphold their responsibilities to future generations in this regard" appears in Article 25 of the UNDRIP. "Indigenous peoples have the right to maintain, control, protect and develop their cultural heritage, traditional knowledge and traditional cultural expressions, as well as the manifestations of their sciences, technologies and cultures, including human and genetic resources, seeds, medicines, knowledge of the properties of fauna and flora, oral traditions, literatures, designs, sports and traditional games and visual and performing arts. They also have the right to maintain, control, protect and develop their intellectual property over such cultural heritage, traditional knowledge, and traditional cultural expressions" appears in Article 31, Paragraph 1 in the UNDRIP (United Nations, n.d.).

Plants as part of a land ethic: "All ethics so far evolved rest upon a single premise: that the individual is a member of a community of interdependent parts. The land ethic simply enlarges the boundaries of the community to include soils, waters, plants and animals, or collectively the land" (Aldo Leopold Foundation, n.d.). According to Pawnee attorney, author (including of *In the Light of Justice* [Echo-Hawk, 2013; cf. NWIC Videos, 2016]), and speaker, "The second problem [of seven factors or problems] in our Anthropocene Era is the destruction and degradation of the native plant communities around the world through the deforestation, clear-cutting, through steel plows being drug through fragile indigenous plant communities, through unchecked development. We are literally destroying the sacred living covering of Mother Earth acre by acre" (Thomas S. Foley Institute, 2014).

Hope Jahren (Lab Girl) on Plants: "People love the ocean. People are always asking me why I don't study the ocean, after all, I live in Hawaii. I tell them that it's because the ocean is a lonely, empty place. There is six hundred times more life on land that there is in the ocean, and this fact mostly comes down to plants. The average ocean plant is one cell hat lives for about twenty days. The average land plant is a two-ton tree that lives for more than one hundred years. The mass ratio of pants to animals in the ocean is close to four, while the ratio on land is closer to a thousand. Plant numbers are staggering: there are eighty billion trees just within the protected forests of the western United States. The ratio of trees to people in America is well over two hundred. As a rule, people live among plants but they don't really see them. Since I've discovered these numbers, I can see little else" (Jahren, 2016:3).

Relationality and Plants: A relational ontology is a consideration of the nature of being that prioritizes relations between things in terms of their essential nature (cf. Wildman, 2010). From an Indigenous perspective, plants may be considered as types of *things*, which include both human and non-human entities, e.g., animals, land, sky, moon, rocks, etc. "[m]eanings of traditional land, nature, and sustainability such as traditional experiences, culture, and customs, are important issues for Indigenous lives and environment." And, a relational ontology may be regarded as a conceptual framework where "… meanings of "things", such as land and sustainability … [may be regarded] as hybrid processes which are continuously shifting, changing, moving, transforming, assembling, and becoming more complex in many directions." Furthermore, "…meanings of nature, land and sustainability are considered relational, part of the social order, and connected to traditional experiences, one's own body, dreams, and spirituality" (Datta, 2015).

Plants may also be regarded as organisms whose membership in the category of "plant" varies according to historical and cultural considerations. This term has ancient origins having entered into English from Latin, where *planta* referred to "sprout, shoot, cutting." This Latin term in turn derives from terms associated with feet or flatness, perhaps in

relation to the use of feet to push (plants) into the ground. Although historical and cultural definitions of what a "plant" is vary, the modern science of botany regards plants as including up to 350,000 botanical species that produce embryos, i.e., the bryophytes, ferns and fern allies, and seed plants (the gymnosperms and angiosperms). Of these, all but the bryophytes are regarded as being vascular plants, i.e., those plants having food and water conducting systems consisting of xylem and phloem. Fern allies include the horsetails and other plants having similarities to the ferns. Gymnosperms include the conifers, several of which are found within our region, and other plants that are distributed elsewhere. Angiosperms are the flowering plants.

Botany is the study of plant life and comprises a branch of biology, the study of life. The term *botany* has been in use since the late 17th century. It derives from *botanic* (from French *botanique*, based on Greek *botanikos*, from *botanē* 'fodder, herb, pasture, plants,' a derivative of the verb *boskein* 'to feed, graze'—this perhaps related to the idea of a livestock keeper needing to know which plants are safe for livestock to eat) (Harper, 2012a, 2012b & 2012c).

Ethnobotany: Human relationships with plants are ancient and all cultures possess unique plant knowledge. While surviving written works involving botany include ancient texts from several cultures of India, Iran, China, Europe and the Americas dating back thousands of years (e.g., Aztec and Mayan codices representative of traditional knowledge from before and after the time of the arrival of the Spaniards), many oral traditions regarding plants exist and may be even more ancient. The contemporary academic discipline of botany is multifaceted and reflects both the history of and contemporary developments within the field. This course serves as an introduction to the botanical study of plants in the Pacific Northwest with specific reference to Coast Salish considerations such as traditional environmental knowledge as related to plant life and other current and future considerations, such as related to plant phenology and climate change.

How many plants are in the world and our region? Approximately 350,000 extant species of vascular plants (seed plants, ferns and fern allies, and bryophytes) are described, with another approximately 50,000 species of extinct plants having been described, approximately 90% of which are flowering plants (Hogan, 2014). There are approximately 3,200 species of vascular plants in Washington, hundreds of which have traditional roles and contemporary significance amongst Native American cultures. Today a growing number of introduced species—some of which can become naturalized—may be found in our area. Many of these are limited to cultivated and horticultural applications such as plants raised in gardens, cities and otherwise in close proximity to human settlements, or they may represent accidental introductions. In addition to their obvious contributions to human societies as sources of food, medicine and various other useful materials, plants are essential to many other species and play numerous important ecological roles.

The focus of this course: ENVS 201 will involve study of vascular plants with emphasis on common local flowering plants, conifers, ferns and fern allies where many of those species are uniquely recognized, named and valued by Coast Salish people. However, reference will be made from time to time regarding non-vascular plants (bryophytes) and other common local botanical organisms such as lichens, fungi and algae.

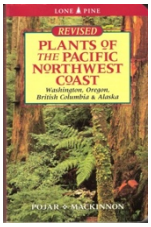
Main goals of the course: These will include learning how to identify plants and comprehend their relevance within the context of Native environmental science as well as in reference to broader considerations. The course will address many topics related to plant nomenclature, taxonomy, anatomy, morphology, reproduction, growth, development, ecology, evolution and history. The approach to plant identification used in this course will introduce students to many concepts, terms, tools, practices and resources that are useful not only in botanical studies but also other applications. It will also foster the development of critical thinking; observation, analysis, interpretation and evaluation strategies intended to contribute to accurate plant identification as well as to more general approaches to resolving uncertainty. It is, therefore, more about thinking things through well to achieve accurate and worthwhile results than it is about rote memorization of simple facts.

Seasonal considerations: During the spring quarter, field-based activities will emphasize the identification of plants based on observable seasonal characteristics such as flowers. During the fall or winter quarters, identification may be based on the observation and analysis of dormant plant features (e.g., as involved in winter twig identification of flowering plants) and other aspects of plants that may be observed during the end of a growing season (e.g., persistent reproductive structures). These relate both to Traditional Phenological Knowledge (TPK) of Indigenous peoples as well as to plant phenological as related to climate change, which is becoming an increasingly important aspect of Native and other environmental science research.

Why study plants? The study of local plants can contribute substantially to a fuller appreciation of plants in general as well as a more complete understanding of the environmental and cultural roles of plants locally and globally. This course contributes to the fulfillment of general education requirements in natural science for two-year degrees in Washington, it

can prepare students for work involving plants in a range of interest areas (Native American studies, natural sciences, health, etc.) and it can contribute to a botanically oriented course of study within the B.S. in Native Environmental Science.

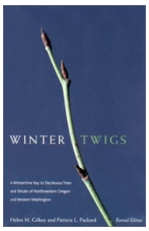
Required Text



Pojar, J., & MacKinnon, A. (Eds.). (2016). *Plants of the Pacific Northwest Coast: Washington, Oregon, British Columbia and Alaska* (Rev. ed.). Renton, WA: Lone Pine. (Original work published 1994) [ISBN-10: 1772130087, ISBN-13: 978-1772130089, originally published as *Plants of Coastal British Columbia*, subsequently published in 2004 as the first revised edition; this is the second revised edition]

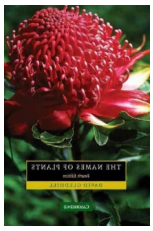
- This is an excellent reference for the identification of local plants which also includes a significant amount of ethnobotanical information for many species of significance to Native peoples of our region. Note: All versions of this text are suitable for use in this course. **Please be sure to bring this to all class and lab meetings, and all field activities.**

Recommended Texts



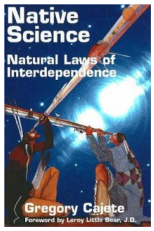
Gilkey, H. M., & Packard, P. L. (2001). *Winter twigs: A wintertime key to deciduous trees and shrubs of northwestern Oregon and western Washington* (Rev. ed.). Corvalis, OR: Oregon State University Press. [ISBN-10: 0-87071-530-5]

- This is the best local reference for winter twig identification of local species and may be used to identify woody species during the fall and winter, and sometimes during the early spring, depending on environmental conditions.



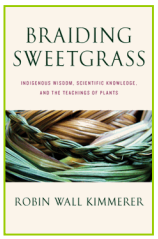
Gledhill, D. (2008). *The names of plants* (4th ed.). New York, NY: Cambridge University Press. (Original work published 1985) [ISBN: 978-0-521-68553-5]

- This is a very useful volume containing details regarding botanical and horticulture nomenclature and terminology. It helps to explain and demystify terms that otherwise may be rather challenging comprehend and apply.



Cajete, G. (2000). Plants, food, medicine, and gardening. In *Native science: Natural laws of interdependence* (pp. 107-147). Santa Fe, NM: Clear Light. [ISBN: 1-57416-041-9]

- This is a seminal volume on the topic of Native science which is highly recommended not only for the chapter on plants but because it covers a range of important topics related to Native philosophy, ecology, ethnobiology, sense of place and others concepts.

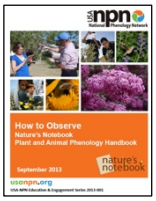


Kimmerer, R. W. (2013). *Braiding sweetgrass: Indigenous wisdom, scientific knowledge and the teachings of plants*. Minneapolis, MN: Milkweed Editions. [ISBN-10: 1571313354, ISBN-13: 978-1571313355]

- Publisher's information: As a botanist and professor of plant ecology, Robin Wall Kimmerer has spent a career learning how to ask questions of nature using the tools of science. As a Potawatomi woman, she learned from elders, family, and history that the Potawatomi, as well as a majority of other cultures indigenous to this land, consider plants and animals to be our oldest teachers. In *Braiding Sweetgrass*, Kimmerer brings these two lenses of knowing together to reveal what it means to see humans as "the younger brothers of creation." As she explores these themes she circles toward a central argument: the awakening of a wider ecological consciousness requires the acknowledgement and celebration of our reciprocal relationship with the world. Once we begin to listen for the languages of other beings, we can begin to understand the innumerable life-giving gifts the world provides us and learn to offer our thanks, our care, and our own gifts in return.

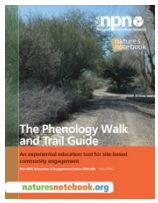
Guertin, P., Barnett, L., Denny, E. G., & Schaffer, S. N. (2015). *USA-NPN Education & Engagement Series: Vol. 2015-0011. Botany primer: Understanding botany for Nature's Notebook*. Retrieved from https://www.usanpn.org/files/shared/files/USA-NPN_Botany-Primer.pdf

- Information regarding aspects of botany required for making phenological observations by the USA-National Phenology Network.



USA-NPN National Coordinating Office. (2016). *USA - NPN Education & Engagement Series: Vol. 2013 - 001. How to observe Nature's Notebook plant and animal phenology handbook*. Retrieved from https://www.usanpn.org/files/shared/files/USA-NPN-HTOFull_8.27.13.pdf

- Information regarding making phenological observations by the USA-National Phenology Network.



USA-NPN National Coordinating Office. (2013). *USA-NPN Education & Engagement Series: Vol. 2016 - 001. The phenology walk and trail guide: An experimental education tool for site-based community engagement*. Retrieved from https://www.usanpn.org/files/shared/files/USA-NPN-PhenoWalk-Trail-Guide-07262016.pdf

- Information regarding making phenology walks and trails by the USA-National Phenology Network.

Required Websites

Herbarium at the Burke [University of Washington Herbarium]. (2015). Retrieved August 24, 2015, from Burke Museum of Natural History and Culture website: http://www.washington.edu/burkemuseum/collections/herbarium/index.php

PLANTS database. (2015, August 17). Retrieved August 24, 2015, from United States Department of Agriculture Natural Resources Conservation Service website: http://plants.usda.gov/

Recommended Websites

Legler, B. (2006). *Winter twig identification key*. Retrieved August 24, 2015, from Burke Museum of Natural History and Culture website: http://biology.burke.washington.edu/herbarium/imagecollection.php?Page=wintertwigkey.php

Moerman, D. *Native American ethnobotany* [A database of foods, drugs, dyes and fibers of Native American peoples, derived from plants]. Retrieved August 24, 2015, from University of Michigan - Dearborn website: http://herb.umd.umich.edu

Nature's notebook. (n.d.). Retrieved August 24, 2015, from USA National Phenology Network website: https://www.usanpn.org/natures_notebook

USA National Phenology Network. (n.d.). Retrieved August 24, 2015, from https://www.usanpn.org/

Online Support

This course is supported by the instructor's blog (see above under Instructor Information). In the event of an unscheduled college closure, check this site for course assignments and updates so that you may continue your academic progress outside of class.

Required Materials

- Plastic or paper collection bags
- Field journal
- Pencil or pen (colored pencils are good for making enhanced illustrations)
- Paper for lecture notes and lab illustrations

Recommended Tools and Materials

- Clothing and footwear as appropriate for environmental conditions encountered during field trips
- Pocketknife or other plant collection tool (e.g., hand pruner or secateurs, weed digger, or garden trowel)
- Hand lens (e.g., 40x 25mm illuminated loupe – see illustration above)
- Gloves (e.g., leather, for handling thorny specimens)

Course Policies

1. ***Student Rights & Responsibilities:*** These will be observed as described in the *applicable Northwest Indian College Catalog* and in accordance with Northwest Indian College policies.
2. ***Attendance & Participation:*** Regular attendance and participation are essential to your success in this course. It is your responsibility to attend class meetings regularly and on time. ***In the event that you may arrive to class***

late, please be mindful that the course work has already begun and that class interruptions may negatively impact your classmates' and the instructor's efforts regarding teaching and learning. Necessary absences should be reported to your instructor and multiple unexcused absences may result in grade reductions that could prevent you from passing this course.

VERY IMPORTANT NOTE: Students must attend at least 1 class for their financial aid to be disbursed. If attendance is not logged for a student for 2 weeks, a return of funds must be calculated. NWIC has 45 days from the last date of attendance to return the Title IV funds. Financial Aid will check attendance every Thursday.

3. ***Assignments & Due Dates:*** All assignments are to be submitted as indicated by the instructor and in supporting course materials. You must complete your work as indicated in class or you will not receive credit for that work. Unless otherwise instructed, you are required to submit your work via Email to Brian Compton at bcompton@nwic.edu. ***I will not accept late assignments without prior approval.***
4. ***Assessment & Grades:*** The grades that I will report on the class grade roster at the end of the quarter may be determined through a combination of faculty and student self-assessment as detailed in this syllabus or described in class and course materials.
5. ***Electronic Devices (e.g., cell phones and laptop computers):*** Please be sure to reserve cell phone and laptop use for outside of class ***unless they are being used with the instructor's approval and in direct support of your on-task course work***.
6. ***Email:*** I will use your NWIC Email address to communicate with you in this course, so ***you must access it to receive any messages that I send to you via that address***.

Institutional, Program and Course Outcomes

NWIC Institutional Outcomes

The institutional outcomes that this course seeks to support are:

1. Native Leadership—To Acquire a Quality Education
   a. Effectively communicate in diverse situations, from receiving to expressing information, both verbally and non-verbally
   b. Use analytical and critical thinking skills to draw and interpret conclusions from multiple perspectives including Indigenous theory and methods
2. Way of Life—To Give Back
   a. Demonstrate knowledge of what it means to be a people
   b. Practice community building through service learning
3. Inherent Rights—To Apply Indigenous Knowledge
   a. Exhibit a sense of place
   b. Recognize Tribal rights as they relate to human rights
4. Community Minded—To Utilize Education Through Work
   a. Meet the technological challenges of a modern world
   b. Work cooperatively toward a common goal

Bachelor of Science in Native Environmental Science Program Outcomes

The program outcomes that this course seeks to support are:

1. Sense of Place
   a. Value the interrelationships between people and the environment.
   b. Ground and apply concepts and methodologies to place.
2. Relationality
   a. Demonstrate self-location within inquiry-based research.
   b. Value relationality in the practice of Native Environmental Science.
   c. Evaluate and interpret environmental laws, policies, and acquired rights, and advocate for inherent rights.
3. Inquiry
   a. Use Indigenous theories and methods to conduct inquiry-based research and evaluation that respond to the needs of Indigenous communities and serve to promote Indigenous self-determination.
   b. Evaluate and use appropriate technologies for inquiry-based research in support of restoration and revitalization of the environment.

   c. Evaluate and apply quantitative, qualitative, and mixed methodologies and concepts that include the synthesis of complex information.
4. Communication
   a. Communicate using oral, written, and graphical (visual) methods to support Indigenous self-determination.
   b. Communicate effectively to multiple audiences, including Indigenous communities, policy makers, scientific communities, and the general public.

Course Outcomes

As the result of this course students will be able to …

1. Identify the main diagnostic concepts, procedures, tools and resources used in plant identification, including the main parts of a dissecting stereoscope and demonstrate its proper use
2. Identify vascular plant vegetative organs (stems, roots and leaves) and reproductive organs (flowers, cones, and comparable structures in spore-bearing plants), including their main parts
3. Determine the status of a floral specimen with reference to the following floral characters: fusion (vs. parts separate), ovary position, reduction (vs. parts numerous), and symmetry
4. Identify unknown plant specimens using a dichotomous plant identification key
5. Collect, document and prepare botanical specimens for preservation
6. Identify important seasons and habitats associated with native plants

Note that the following are not official course outcomes for this course, but will also be addressed:

7. Specify the importance of native plants to Native people
8. Discuss the importance of maintaining knowledge of the properties and values of native plants and incorporating those teachings into contemporary society

Outline/Schedule of Topics & Assignments

Week 1
- Course introduction
- Introduction to plants and their identification
- Plants vs. plant-like non-plants (e.g., lichens, fungi, algae, etc.)
- Plants, Indigenous peoples, phenology and climate change
- Field trip and/or lab: plant specimen collection, documentation and preparation
- Service Learning: Apple Tree Project

Week 2
- Microscopy used in plant identification
- Diagnostic characters, tools and resources
- Pteridophytes (ferns and fern allies)
- Field trip and/or lab: plant specimen collection, documentation and preparation

Week 3
- Botanical nomenclature and classification
- Gymnosperms (conifers)
- Field trip and/or lab: plant specimen collection, documentation and preparation

Week 4
- Gymnosperms (conifers), continued
- Field trip and/or lab: plant specimen collection, documentation and preparation
- **Due: Topic, Thesis, & Preliminary Bibliography at 5:00 pm on Friday**

Week 5
- Angiosperms (fruiting or flowering plants)
- Mutualism, pollination, etc.
- Field trip and/or lab: plant specimen collection, documentation and preparation

Week 6
- Angiosperms (fruiting or flowering plants), continued
- Field trip and/or lab: plant specimen collection, documentation and preparation
- **Due: Annotated Bibliography at 5:00 pm on Friday**

Week 7
- Angiosperms (fruiting or flowering plants), continued
- Field trip and/or lab: plant specimen collection, documentation and preparation

Week 8
- Angiosperms (fruiting or flowering plants), continued
- Field trip and/or lab: plant specimen collection, documentation and preparation

Week 9
- Angiosperms (fruiting or flowering plants), continued
- Field trip and/or lab: plant specimen collection, documentation and preparation
- **Due: Draft formal paper at 5:00 pm on Friday**

Week 10
- Angiosperms (fruiting or flowering plants), continued
- Field trip and/or lab: plant specimen collection, documentation and preparation
- **Due; Field journal and specimen collection at 5:00 pm on Friday**
- **Due: Final formal paper at 5:00 pm on Friday**

Week 11
- Preparation and review for final exam
- **Due: Oral presentation of formal paper**

Week 12
- Preparation and review for final exam
- **Final exam during lab session**

Assessment—Assignments & Grading

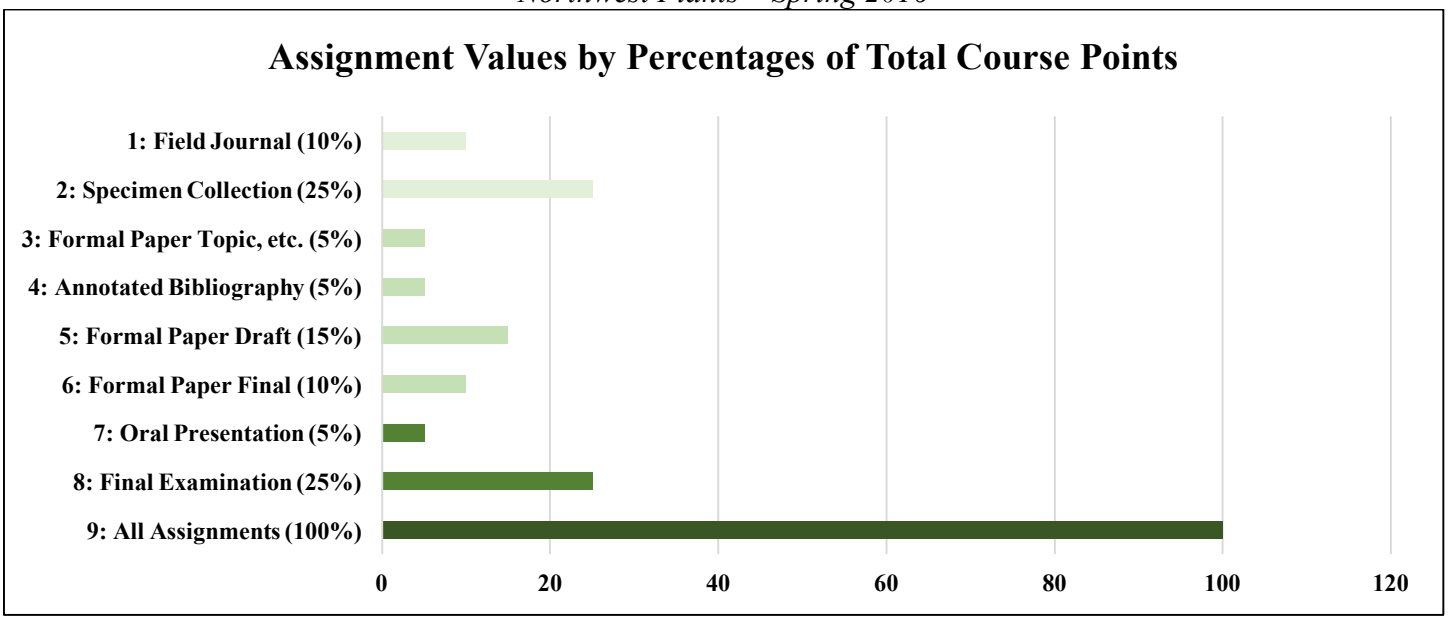
Note: Additional details regarding assignments may be posted to the instructor's blog. Please check it regularly for details.

Requirements

Note: This course is based on a total of 100 possible points, including online and classroom elements as indicated below.

1. **Attendance and participation** (0 points possible for 0% of the total grade)
   (Attendance will be recorded and reported to Enrollment Services for financial aid purposes but will not contribute points for grading purposes. That being said, attendance and participation are essential to the successful completion of this course.)
2. **Field journal** (10 points or 10% of total grade)
   (A written record complete for all field activities and specimens will be developed. It will be assessed according to the corresponding rubric presented in the appendix to this syllabus.)
3. **Specimen collection** (25 points or 25% of final grade)
   (A specimen collection will include 25 native vascular plant species, each specimen to be properly pressed and completely dried, correctly identified, and fully labeled according to standard herbarium protocols. It will be assessed according to the corresponding rubric presented in the appendix to this syllabus.)
4. **Formal paper** (consisting of the elements described below)
   a. **Topic, thesis (or equivalent) & preliminary bibliography for formal paper** (5 points or 5% of final grade)
      (A topic related to the course content is identified, a clear thesis statement (or equivalent) is developed, and a preliminary bibliography of relevant and authoritative references that relate to the topic and thesis is included. This is to be produced in accordance with APA [American Psychological Association] Style guidelines, submitted in electronic form a minimum of one time to the Science Writing Mentor for preliminary review and feedback, and submitted in electronic form to the course instructor for final review and feedback. It should address all aspects of the editorial review and feedback. It will be assessed according to the corresponding rubric presented in the appendix to this syllabus. Complete assignments will receive all the possible points. Note: An assignment template is presented on the instructor's blog.)
   b. **Annotated bibliography for formal paper** (5 points or 5% of final grade)
      (An annotated bibliography containing a minimum of five references related to the project topic will be developed. Also note additional writing and assessment details as indicated above and the corresponding rubric in the appendix.)
   c. **Preliminary draft of formal paper** (15 points or 15% of final grade)
      (A complete preliminary draft of a formal paper will be developed. Also note additional writing and assessment details as indicated above and the corresponding rubric in the appendix.)
   d. **Final version of formal paper** (10 points or 10% of final grade)
      (A complete final version of a formal paper will be developed. Also note additional writing and assessment details as indicated above and the corresponding rubric in the appendix.)
5. **Oral presentation of formal paper** (5 points or 5% of final grade)
   (This may be presented with optional electronic support, e.g., PowerPoint, Prezi, Sway or other presentation software[1] and should be submitted to the instructor in electronic form **at least one day prior to in-class presentation**. Also note additional writing and assessment details as indicated above and the corresponding rubric in the appendix.)
6. **Final comprehensive examination on plant identification** (25 points or 25% of final grade)
   (Note: No makeup final exam will be allowed except in the case of emergency or other compelling and unavoidable circumstances.)

[1] A number of presentation software alternatives to PowerPoint are described at http://www.customshow.com/best-powerpoint-alternatives-presentation-programs.



Grading

Note that students must complete course requirements as described in this syllabus to be eligible for receiving a grade for this course. Northwest Indian College uses the following symbols for grading courses:

- A: The student has met or exceeded the highest level of the course requirements.
- B: The student has met the course requirements above the satisfactory level.
- C: The student has met the course requirements at the satisfactory level.
- D: The student has met the course requirements at the minimum level. However, the student has not met all of the course requirements at the satisfactory level.
- F: The student has not met the course requirements at the minimum level.

In this course, the following points and percentages will be associated with letter grades:

Grade	Points Earned	Percentage
A	95-100	95-100%
A-	90-94	90-94%
B+	86-89	86-89%
B	85	85%
B-	80-84	80-84%
C+	76-79	76-79%
C	75	75%
C-	70-74	70-74%
D+	66-69	66-69%
D	65	65%
D-	60-64	60-64%
F	0-59	0-59%

Please also note the following important details regarding grading.

- **Incomplete Agreement Policy Statement:** If a student has been making consistent progress and has regular attendance, but some essential requirement of the course has not been completed because of unforeseen circumstances the student has the option to request to enter into an incomplete agreement. **The deadline to request an incomplete agreement is the last day of the quarter.** It is the instructor's discretion whether to accept the student's request. When the instructor submits an incomplete agreement for a student, included should be:
  - The grade earned by the student on the date that the incomplete agreement is submitted,
  - A detailed list of remaining work to be completed, and
  - A deadline for the completion of that work. (The deadline is not to extend longer than two consecutive quarters.)
- **Grade Change Policy:** Grade and designation of *Incomplete* recorded by the registrar at the end of a quarter will be considered final and not be changed except in the following cases:

- When a letter grade is submitted to replace the incomplete, by the instructor of record or, if the instructor of record is no longer employed by NWIC, by the Dean of Academics.
- When a grade resulting from an error, such as a computation error, is corrected by the instructor of record; the request for change to correct these errors may only be made by the instructor of record, before the beginning of blue-slip week (second week of the quarter) or the following quarter.
- When an error committed in the administrative recording process is corrected by the registrar's office.
- When a student's grade appeal has been adjudicated, as outlined in the grievance procedure in the *Student Handbook*.

Note: The Incomplete Agreement and Grade Change policies were approved in April of 2015, too late for inclusion in the print version of the applicable *Northwest Indian College Catalog*. Please be sure to note that information regarding incomplete grades and grade changes in the print catalog is obsolete. However, the new information does appear in the updated electronic version of the catalog available from the NWIC website. **Please also note that your instructor for this course requires completion of a written Incomplete Agreement Request Form, which is available upon request.**

- **Other Considerations**
  - Completion of an assignment does not ensure receipt of full credit for that assignment. I will assess your work for its promptness, appropriateness, completeness, quality and relationship to one or more assessment rubrics. All work must be completed by the start of the final class meeting or—only with prior permission of the instructor and because of unavoidable circumstances—by noon of the last day of the quarter unless an Incomplete Agreement is requested and completed as indicated above.
  - Grade qualifiers (- or +) may accompany your final grade depending upon various factors to be determined by your instructor with respect to the promptness and quality of your efforts.

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Rubric for Field Journal

Assessment Attribute	Possible Points
Complete & Concise: All required specimen collection data are included (collector's name, collection dates and locations, and specimen collection numbers and details)	2
Correctness: All aspects of collection data are correct (collection dates and locations, and specimen collection numbers and details)	2
Coherence (& Control): Content is presented logically and in a unified manner (collection data is sequentially ordered according to dates of collection and collection of specimens)	2
Clarity: Writing is clear and unconfused and relates directly to the stated assignment objective(s)	2
Content: Writing shows evidence of full and complete comprehension of subject matter and content communicated is substantial and relevant; data correspond to specimens collected	2
All Attributes	**10 total points possible**

Rubric for Specimen Collection

Assessment Attribute	Possible Points
Complete & Concise: Twenty-five (25) specimens are included along with all required specimen collection data	5
Correctness: All aspects of collection data are correct and specimens are correctly identified using botanical nomenclature and taxonomy	5
Coherence (& Control): Content is presented logically and in a unified manner (specimens are sequentially ordered according collection details contained in the field journal)	5
Clarity: Writing is clear and unconfused and relates directly to the stated assignment objective(s)	5
Content: Writing shows evidence of full and complete comprehension of subject matter and content communicated is substantial and relevant; data correspond to specimens collected	5
All Attributes	**25 total points possible**

Rubric for Topic, Thesis (or Equivalent) & Preliminary Bibliography

Assessment Attribute	Possible Points
Complete & Concise: All components of APA Style as indicated for the assignment are included and writing is economical and direct	1
Correctness: <u>A thesis (or equivalent) and preliminary bibliography are correctly developed and presented</u>; All aspects of grammar, spelling, punctuation and word choice are present	1
Coherence (& Control): Content is presented logically and in a unified manner with good flow, paragraph construction, sentence content, etc.	1
Clarity: Writing is clear and unconfused and relates directly to the stated assignment objective(s)	1
Content: Writing shows evidence of full and complete comprehension of subject matter and content communicated is substantial and relevant	1
All Attributes	**5 total points possible**

Rubric for Annotated Bibliography

Assessment Attribute	Possible Points
Complete & Concise: All components of APA style as indicated for the assignment are included and writing is economical and direct	1
Correctness: <u>A bibliography and annotations are correctly developed and presented</u>; All aspects of grammar, spelling, punctuation and word choice are present	1
Coherence (& Control): Content is presented logically and in a unified manner with good flow, paragraph construction, sentence content, etc.	1
Clarity: Writing is clear and unconfused and relates directly to the stated assignment objective(s)	1
Content: Writing shows evidence of full and complete comprehension of subject matter and content communicated is substantial and relevant	1
All Attributes	**5 total points possible**

Rubric for Formal Paper (preliminary draft and final versions)

Assessment Attribute	Possible Points
Complete & Concise: All components of APA style as indicated for the assignment are included (**<u>format, number of words or page length, references and citations, etc.</u>**) and writing is economical and direct	3 draft/2 final
Correctness: <u>All required components are correctly developed and presented</u>; All aspects of grammar, spelling, punctuation and word choice are present	3 draft/2 final
Coherence (& Control): Content is presented logically and in a unified manner with good flow, paragraph construction, sentence content, etc.	3 draft/2 final
Clarity: Writing is clear and unconfused and relates directly to the stated assignment objective(s)	3 draft/2 final
Content: Writing shows evidence of full and complete comprehension of subject matter and content communicated is substantial and relevant	3 draft/2 final
All Attributes	**15 total points possible (draft)** **10 total points possible (final)**

Rubric for Oral Presentation

Assessment Attribute	Possible Points
Complete & Concise: All components of the assignment are included (**<u>e.g., as per the written component</u>**) and writing and speaking are economical and direct	1
Correctness: <u>All required components are correctly developed and presented</u>; All aspects of grammar, spelling, punctuation and word choice are present	1
Coherence (& Control): Content is presented logically and in a unified manner with good flow, paragraph construction, sentence content, etc.	1
Clarity: Writing and speaking are clear and unconfused and relates directly to the stated assignment objective(s)	1
Content: Writing and speaking show evidence of full and complete comprehension of subject matter and content communicated is substantial and relevant	1
All Attributes	**5 total points possible**