

Seaside High School Plant Ecology Syllabus Spring 2016

Course Title: Plant Ecology

Course Description: Our focus will be on regional plants with long-term ecological research projects in the community and citizen science efforts. Other topics include plant anatomy, plant physiology, plant identification, and cultivation of plants. Outdoor field work and data collection will be a weekly component of the course. 9-12th grades, may be concurrent with Biology B for 9th grade.

Faculty: Suzanna Kruger

Email: skruger@seaside.k12.or.us

Remind app: Call 81010, @planteco in the message.

Text/Course Materials: *Biology* by Miller and Levine, Pearson, 2010, and supplementary handouts.

Course code for Google Classroom: uui37j7

Common Core State Standards Learned in this Course:

Reading Informational Text:

- 9-10.RST.1 Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.
- 9-10.RST.2 Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text.
- 9-10.RST.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
- 9-10.RST.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 9–10 texts and topics*.
- 9-10.RST.5 Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., *force, friction, reaction force, energy*).
- 9-10.RST.6 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, defining the question the author seeks to address.
- 9-10.RST.7 Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.
- 9-10.RST.8 Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem.
- 9-10.RST.9 Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts.
- 9-10.RST.10 By the end of grade 10, read and comprehend science/technical texts in the grades 9–10 text complexity band independently and proficiently.

Writing: Please refer to the Oregon Department of Education Website for CCSS writing standards. They are long, but worthwhile. <http://www.ode.state.or.us/search/page/?id=3569>

Other Standards Learned in this Course:

Oregon adopted the Next Generation Science Standards in 2014. You can search the following website for Biology (life science) standards. Under the “Grades” window, select High School (9-12). Under the “Disciplinary Core Idea” window, select Life Sciences. At the bottom of the screen, you will find four documents you can download.

Briefly, NGSS standards for life sciences in high school include:

Structure and Function
Organization of Matter and Energy Flow in Organisms
Information Processing
Inheritance of Traits
Variation of Traits
Evidence of Common Ancestry and Diversity
Natural Selection
Adaptation
Biodiversity and Humans

NGSS searchable website: <http://www.nextgenscience.org/search-standards-dci>

Grading Policies:

Students pass Plant Ecology by participation and turning in all work which is graded on a point scale. Letter grades are based on the following:

A	90-100%	Approximate point values and weights for assignments in Plant Ecology:
B	80-89%	
C	70-79%	
D	60-69%	
F	<60%	
		• In-Class Assignments (10-20 points), 60%
		• Homework (10 points), 15%
		• Projects or Lab Reports (Introduction, Methods, Results, Discussion) (25-50 pts), weighted under “Tests”, 25%
		• Quizzes (10-20 pts), weighted under “Tests”, 25%

You have the opportunity to earn college credit for Biology 101 through Western Oregon University and a program called Willamette Promise!

You will need your SSID number. Register here: <http://www.wesd.org/domain/34>

Classroom Expectations:

Be Safe	Be Respectful	Be Responsible	
<ul style="list-style-type: none"> Follow Lab Safety Instructions carefully. Wear PPE when appropriate (goggles, gloves) No food or drink other than water. Pass requested items hand to hand, or place on a table or counter. Please do not throw anything. 	<ul style="list-style-type: none"> Participate fully in class by listening, asking questions, & contributing to the discussion. Electronics are allowed as a tool, but must be removed if they become a distraction. Be kind to your classmates. Get my attention and ask questions when you don't understand. 	<ul style="list-style-type: none"> Bring the required materials to class every day at the beginning of class and be ready to work when I say, "Welcome to Biology." Do the work expected of you. Keep your data tables neat. Stay within 15-30 seconds of the leader when we are outside. Ask questions when you are curious. Ask questions when you do not understand. 	<div> <div>Required Materials:</div> <div> 1. Pencil 2. Spiral Notebook 3. Folder </div> </div> <div> <div>Optional Materials:</div> <div> 1. Calculator 2. Colored pencils 3. Ruler, compass </div> </div>

Important Due Dates: Weekly turn-in dates for **in-class work** and **homework** contained in your spiral notebooks will vary by period. Record that day of the week for your class here: _____

Homework will be assigned Wednesday at the end of class and will be due the following Wednesday. It will be on plant collection, some reading.

Occasional: Short, cumulative quiz over material.

Major Projects:

1. Lab Write-up that includes quantitative data that can be graphed
2. Changes to the land: Clatsop County and Landsat imagery
3. Plant collection with 1 representative of each major family available locally

Course Calendar:

<u>Plant Ecology:</u>	<u>Tentative Labs + Field experience</u>
Week 1: Plant Anatomy Week 2: Plant Physiology Week 3-5: Clatsop County Plant Identification and plant associations Weeks 6-7: Clear cuts + changes in Clatsop County via Landsat imagery Week 8-10: Oregon climate regimes and plant associations Weeks 11-12: Student inquiry and presentations of projects Final exam: Your lab report + Plant identification practical	#1: Flower structure #2: Bud Burst Plant identification #3: Plant histology (cell and tissue structure) #4: Salt tolerance #5: Zonation at in the estuary #6: Riparian plant associations #7: Upland forests #8: Violets + the Silverspot butterfly #9: Fort Clatsop National Park Bioblitz #10: Salal: a genetic difference, or just phenotypic plasticity? #11: Student inquiry, proposal and data collection