

Syllabus

COURSE:	Bi 103, Oregon Plants	OFFICE:	WOH-211
TERM:	Winter, 2020	PHONE:	541-990-6228 cell
INSTRUCTOR:	Bob Ross	SECRETARY:	Kambria Wallace: MH-101
OFFICE HOURS:	T-R 3-4 p.m.	E-MAIL:	rossb@linnbenton.edu

DESCRIPTION: General Biology 103 presents the perspective of structure and function (anatomy and physiology) of living things. In this course, we will primarily study the structure and function of plants from a scientific perspective.

TEXT: This manual serves as the text for the course.

EXAMS: You will have two midterm exams and a final exam. Each exam is worth 100 points. For the most part, each exam deals with the material covered since the last exam, although there is some comprehensive testing, especially on the final. Exams typically contain multiple-choice, and short- and long-answer questions. Exams are designed to measure a person's knowledge and comprehension, and the ability to think: to analyze, apply, evaluate and synthesize. Science honors clarity and brevity, so students who answer certain exam questions clearly, completely, correctly and concisely, and who demonstrate "seeing the connections" receive **bonus points**.

QUIZZES: Starting with the second class, students will have a quiz on all non-exam days. Each quiz will cover the topic for the day, so students should read the appropriate chapter before coming to class. Each quiz may include several questions from previous topics.

LAB: Biology 103 is a lab science. Lab is the most important part of this course. It is where you experience plants and form your sensory understanding of plants. Lab experiences will be thoroughly represented on exams. It is unfortunate that you cannot make up a lab if you miss it for some reason. The lab activities are prepared for the occasion and then are taken down for storage or disposal because the Biology Department is short on staff and space.

A VERY IMPORTANT NOTE: Students often wonder why they have to work so hard in science classes such as biology. There is an easy explanation: these are four credit class that deserves an additional credit's worth of effort than a three credit class. A class in sociology and a class in biology should not be treated equally!

OUTCOMES:

Departmental Outcomes for all Bi 103 courses:

Some of the outcomes you should be able to demonstrate after having taken this class are the following;

- 1) List ways that organisms communicate or respond to the environment.
- 2) Be able to explain the ways that organisms acquire and utilize nutrients.
- 3) Be able to explain the role of transport in organisms.
- 4) Be able to relate an organisms structure to its functions.

Course Outcomes:

Unlike technical courses where students generally learn to master skills associated with professions and therefore have very concrete learning outcomes, transfer courses generally help students advance their understanding of how the world works in broad, general ways, and teach students thinking skills. Because of the more abstract nature of subject matter in transfer courses, their learning outcomes tend to be similarly abstract. Here are representative outcomes for this course: You should be able to

- Explain how botanists learn about plants, and based on that information, design a simple scientific experiment to test a problem related to plants.
- Using the perspective of structures and functions, explain how plants acquire energy and nutrient, grow and develop their bodies, adapt to their environments and reproduce.
- Present the defining features of plants and distinguish between plants and non-plants.
- Explain how various kinds of plant processes are regulated by hormones, and based on that information, be able to use commercially available hormones to control the plants in order to achieve your goals with the plants.
- Be an effective gardener.
- Have greater powers of observation.
- Possess a greater level of skill for solving problems and doing critical thinking.
- Explain how natural selection and evolution have produced the variety of plants on Earth today.
- Find greater joy in appreciating the unique wonders of plants — of the things known and unknown about them.

Winter Term 2020

CRN 30940

T: WOH-217 R: WOH-218

PLANTS CALENDAR

pages

WEEK	DAY	DATE	TOPIC	QUIZ	pages	
					READING	LAB
			Syllabus: Course Structure and Function Ross Learning Model		1-3 4-5	
WEEK 1	T	1/7	Ch. 1 Plant Basics: What are Plants?		7-17	
	R	1/9	Basic Anatomy: Roots, Stems, Leaves Lab 1	1	18-22	121-124
WEEK 2	T	1/14	Ch. 2 Plant Cells	2	23-38	
	R	1/16	Lab 2	3		125-128
WEEK 3	T	1/21	Ch. 3 Internal Anatomy of Herbaceous Stems	4	39-42	
	R	1/23	Lab 3	5		129-132
WEEK 4	T	1/28	EXAM (1 hr.) (covering weeks 1-3) Ch. 4 Internal Anatomy of Leaves and Roots		43-46	
	R	1/30	Lab 4	6		133-135
WEEK 5	T	2/4	Ch. 5. Development of Older Stems: 2° Growth	7	47-55	
	R	2/6	Lab 5	8		136-137
WEEK 6	T	2/11	Ch. 6 Adaptations	9	56-66	
	R	2/13	Lab 6	10		138-154
WEEK 7	T	2/18	EXAM (1 hr.) (covering weeks 4-6) Ch. 7 Adaptations for Acquisition		67-78	
	R	2/20	Lab 7 (partly in greenhouse)	11		155-157
WEEK 8	T	2/25	Ch. 8 Control of Growth and Development	12	79-88	
	R	2/27	Lab 8	13		158-159
WEEK 9	T	3/3	Ch. 9 Uptake and Use of Water and minerals	14	89-97	
	R	3/5	Lab 9			160-165
WEEK 10	T	3/10	Ch. 10 From Flowers to Fruits and Seeds	15	98-102	
	R	3/12	Lab 10	16		166-169
WEEK 11	T	3/17	2:30-4:20 Final Exam 2 hour comprehensive exam			
			Resources		103-119	
			Safety Instructions		120	
			Labs		121-169	
			Index		170-173	

Your term grade is based upon the number of points that you earn:

		400	
POINTS POSSIBLE:		<u>340 A</u>	85%
		339	
		<u>288 B</u>	72%
100 Quizzes		287	
100 1 st exam		<u>240 C</u>	60%
100 2nd exam		239	
100 final exam		<u>200 D</u>	50%

STUDENT QUALITIES RELATED TO LETTER GRADES

A-F grades reflect the degrees of the following things;

From classroom work and testing:

- mastery of terminology
- comprehension of concepts
- comprehension of themes
- command of the subject of ecology
- recognition of cause-effect relationships (seeing the connections)
- application of concepts to real-life situations
- use of thinking and reasoning skills (such as hypothesizing, synthesizing, analyzing)
- attendance and participation

From working in the lab

- degree of sensory awareness
- formation of useful and accurate perceptions
- use of scientific processes

INC An incomplete grade is issued when a student has failed to take the final exam. The student must complete the work before the end of the following term, otherwise the grade becomes an “F.”

There will be about 16 **quizzes** that will be given at the beginning of the class period. Each quiz will contain questions pertaining to the current day’s topic, as well as previous topics, thus reinforcing earlier topics and integrating new topics with the old. The 10 best quiz scores will be used for determining the term grade. Quizzes cannot be made up later due to absence.

Exams will include photographs with parts that must be identified or described, as well as short and long questions and a few multiple choice items. If your term grade is on the border between two grades, whether you get the higher grade or the lower grade will be determined on an evaluation of your participation in class discussions and activities. Class participation influences the final grade for about 10% of the students.

DOING YOUR WORK ETHICALLY

Science and society only work effectively when people are honest. We expect you to do your own work (not use other people’s work or plagiarize), to be honest, and to collect data accurately. You will not receive credit for the portions of work that are discovered to have been produced unethically. Furthermore, you might be disciplined as set forth in “BOARD POLICY SERIES NUMBER 7035: STUDENTS’ RIGHTS, RESPONSIBILITIES AND CONDUCT.”

The general nature of the learning process, driven by curiosity and necessity

Comprehending our world is achieved best by having

*** EXPERIENCES**

where we see patterns, forms, relationships and actions that become our collection of observed

FACTS

that we fashion together as stories. Learning is enhanced when we acquire information that helps us understand what we are experiencing, as well as

TERMS

that enable us to discuss our experiences with others.

+
If we acquire and apply

CONCEPTS

such as
symbiosis
niche
community
adaptation
evolution
territoriality

to experiences, we deepen our comprehension of the workings of our world.

+
If we then learn to develop and apply

MENTAL SKILLS

such as
evaluating
applying
hypothesizing
synthesizing
analyzing
comparing,

we can have epiphanies about how we can use our knowledge to make



ADVANCES

- in understanding how the world works
- in solving problems that improve our lives

and thereby increase our chances of having a joy-filled and successful life.

* All learning begins with experiences — our own are best, but we can learn from the experiences of others. Is the proverb, “experience is the best teacher,” true? Yes, and we define truth by our experiences!

Memory is data storage! Memorized stuff is pretty useless unless you have the skills to use the information meaningfully in order to understand how things work and to solve problems. Work hardest, therefore, on developing your thinking skills! You will absorb and memorize what you need along the way.