WEED SCIENCE

APBI 328- Fall 2020 Syllabus

ACKNOWLEDGEMENT

UBC's Point Grey Campus is located on the traditional, ancestral, and unceded territory of the xwməθkwəy̓əm (Musqueam) people. The land it is situated on has always been a place of learning for the Musqueam people, who for millennia have passed on in their culture, history, and traditions from one generation to the next on this site.

COURSE INFORMATION

Course Title	Course Code Number	Credit Value
Weed Science	APBI 328	3

CONTACTS

Course Instructor	Contact Details	Office Location	Office Hours
Jennifer Grenz	Contact by email at: Jgrenz@mail.ubc.ca I will respond within working hours 9am-4pm Monday to Friday. Emails received outside of working hours will be responded to during work hours following receipt of message.	Virtual	Office hours will be available by appointment. Please email me if you would like an appointment and meetings will be set up on Zoom.

COURSE STRUCTURE

Our class will be a combination of lecture-based learning, problem-based learning, group discussion, guest lectures, and virtual lab work. Mondays and Wednesdays will be live lectures (synchronous) via Zoom and Fridays will be a combination of pre-recorded materials and online work (asynchronous). Our lab will be live via Zoom (synchronous) during the time of your registered lab section most weeks and will be a combination of individual and group work. Some weeks will be asynchronous as you work on individual lab activities. Please consult the course and lab schedules for detailed information.

Each student will be assigned a problem-based working group for the duration of the course. These groups will be created based on the lab section you are enrolled in.

The success of a virtual course such as this relies on your attendance, positive participation, and careful attention to the syllabus. It is my hope that in spite of learning from home, we can work together to create a great virtual community for learning.

Schedule: **Lectures: MWF, 9:00-10:00am**
MW: Live via Zoom (synchronous)
F: Pre-recorded, reading & video materials, discussion boards (asynchronous)
Laboratory: Live via Zoom most weeks. Please refer to Detailed Lab Schedule.
Section L01- Mondays 12:00pm- 1:30pm
Section L02- Mondays 1:30pm-3:00pm
Section L03- Mondays 3:00pm-4:30pm

SCHEDULE OF TOPICS

Date	Instructor/ Method of Delivery	Topic
Sept. 9	Jennifer Zoom	Introduction to course, weeds, and weed science; classification of weeds
Sept. 11	Asynchronous	What is a weed anyway? Harmful and beneficial aspects of weeds
Sept. 14	Jennifer Zoom	What's the problem? Impacts of invasion (Human health, economic, ecological)
Sept. 16	Jennifer Zoom	Establishment, persistence, reproduction and dissemination of weeds
Sept. 18	Asynchronous	Is there a weed problem and how do we know? Weed-crop interactions- Predicting weed invasions, yield losses and experimental design-weed-crop interaction studies.
Sept. 21	Jennifer Zoom	Methods of weed control: prevention, control and eradication of weeds
Sept. 23	Jennifer Zoom	Mechanical control of weeds and cultural weed control
Sept. 25	Asynchronous	Cover crops and weed control; Allelopathy and its potential uses
Sept. 28	Jennifer Zoom	Non-living mulches and thermal weed control
Sept. 30	Jennifer Zoom	Virtual "weedy" farm tour at Amara Farm in Comox, BC with Arzeena Hamir
Oct. 2	Asynchronous	Choosing weed control
Oct. 5	Jennifer Zoom	Biological control of weeds- Classical
Oct. 7	Jennifer Zoom	Biological control of weeds- Virtual field trip Biocontrol Research- Dr. Chandra Moffit, Research Scientist,

		Entomology/Biocontrol, Agriculture and Agri-Food Canada
Oct. 9	Asynchronous	Biocontrol case study
Oct. 12	No Lecture	Thanksgiving holiday
Oct. 14	Jennifer Zoom	Biological control of weeds- Mycoherbicides
Oct. 16	Asynchronous	Weedy controversy: Chemical weed control history PART ONE
Oct. 19	Jennifer Zoom	Weedy controversy: Chemical weed control history PART TWO
Oct. 21	Jennifer Zoom	Chemical control: classification of herbicides, herbicide metabolism, and fates of herbicide in soil
Oct. 23	Asynchronous	Herbicide uptake and translocation
Oct. 26	Jennifer Zoom	Herbicide selectivity
Oct. 28	Jennifer Zoom	Growth Regulator-type herbicides
Oct. 30	Asynchronous	Inhibitors of mitosis and cell growth/Inhibitors of photosynthesis and amino acid metabolism
Nov. 2	Jennifer Zoom	Inhibitors of photosynthesis and amino acid metabolis
Nov. 4	Jennifer Zoom	Guest Lecture: David Pinzon, Corteva AgriScience: Herbicide registration process and toxicology
Nov. 6	Asynchronous	Herbicide CSI
Nov. 9	Jennifer Zoom	Integrated Pest Management and its application
Nov. 11	No lecture	Remembrance Day
Nov. 13	Asynchronous	Integrated Pest Management and Weed Biology
Nov. 16	Jennifer Zoom	Evolution of Species
Nov. 18	Jennifer Zoom	Hybridization and Epigenetic Effects
Nov. 20	Asynchronous	Understanding and Predicting Invasions
Nov. 23	Jennifer Zoom	Weed biology- Terrestrial and Aquatic invasive plants in British Columbia

Nov. 25	Jennifer Zoom	Sustainable weed management in vegetable production
Nov. 27	Asynchronous	Orchard/Fruit Production Weed Control
Nov. 30	Jennifer Zoom	Poisonous weeds
Dec. 2	Jennifer Zoom	Weeds and Climate Change

LEARNING OUTCOMES

Learning outcomes for this course include:

- Understanding basic weed biology including reproductive and dissemination strategies of weeds
- Learning and applying the principles of Integrated Pest Management (IPM) to manage weeds in a variety of contexts (agriculture, forestry, natural areas)
- Learning prevention and management (mechanical, biological and chemical weed control) strategies of weeds
- Familiarization with priority invasive plants in the province of British Columbia
- Understanding the impacts of climate change on weed biology and the potential impacts to agriculture and the environment.
- Weed identification skills including field skills (surveying and mapping)

We will be using Problem-based learning (PBL) to practice putting your new knowledge and skills into action. PBL cases will be based on real and current issues in weed management that you will be helping to find solutions for. In spite of the virtual learning environment, we will be working hard to create real world opportunities for you to learn, practice applying your knowledge, and develop your "weed-related" problem solving skills.

LEARNING MATERIALS

Required learning/reading materials for this course will be provided in the weekly Canvas modules. These will include links to relevant papers, book chapters, and videos that support your learning.
A Virtual Lab Manual will be provided for the laboratory. This will be available on Canvas on the Lab Page.

ASSESSMENTS OF LEARNING

Distribution of Marks

Problem-based Learning Reports (3)	30
Class participation	10
Laboratory Plant Collection/ Mapping project	15
Characteristics of an Ideal Weed (final course assessment project)	20
Weed Species Literature Review	

and Fact Sheet Project	15
Pasture management assessment (final lab assessment project)	10
Total	100

Note: Weed Species Literature Review and Fact Sheet project submission deadline is Wednesday, November 18, 2020.

Projects and assignments are expected to be submitted on time by the assigned deadline. If you require an adjusted deadline for extenuating circumstances, please communicate with me directly. Late assignments will otherwise be penalized 5 points per day late. Missed assignments will be given a 0.

UNIVERSITY POLICIES

Policies and Resources to Support Student Success

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions.

Details of the policies and how to access support are available on **the UBC Senate website.**

Statement regarding online learning for international students during the COVID pandemic

During this pandemic, the shift to online learning has greatly altered teaching and studying at UBC, including changes to health and safety considerations. Keep in mind that some UBC courses might cover topics that are censored or considered illegal by non-Canadian governments. This may include, but is not limited to, human rights, representative government, defamation, obscenity, gender or sexuality, and historical or current geopolitical controversies. If you are a student living abroad, you will be subject to the laws of your local jurisdiction, and your local authorities might limit your access to course material or take punitive action against you. UBC is strongly committed to academic freedom, but has no control over foreign authorities (please visit http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,33,86,0 for an articulation of the values of the University conveyed in the Senate Statement on Academic Freedom). Thus, we recognize that students will have legitimate reason to exercise caution in studying certain subjects. If you have concerns regarding your personal situation, consider postponing taking a course with manifest risks, until you are back on campus or reach out to your academic advisor to find substitute courses. For further information and support, please visit: http://academic.ubc.ca/supportresources/freedom-expression.

LEARNING ANALYTICS

Learning analytics includes the collection and analysis of data about learners to improve teaching and learning. This course will be using the following learning technologies: Canvas and Padlet. Many of these

tools capture data about your activity and provide information that can be used to improve the quality of teaching and learning. In this course, I plan to use analytics data to:

- View overall class progress
- Track your progress in order to provide you with personalized feedback
- Review statistics on course content being accessed to support improvements in the course
- Track participation in discussion forums
- Assess your participation in the course

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