

Fall 2023

Hort. 320: OLERICULTURE (3 credits)

Tuesdays & Thursdays 9:10 am to 10:25 am

Instructor: GNM Kumar; Email: gnmkumar@wsu.edu, 509-339-4980

Zoom Office hours: Tuesdays 11-am to 12.00 noon (or by appointment).

Course Description: Science, business, and art of vegetable crop production. Culture, fertility, growth, physiology, handling, marketing; garden, commercial, greenhouse, tropical, specialty vegetables.

Prerequisites: BIOLOGY 106, BIOLOGY 107, BIOLOGY 120, or HORT 202.

Learning Goals & Outcomes

Learning Goal	Specific Learning Objectives (SLO)	Activity	Evaluation
Creative Thinking	Determine factors governing suitability of vegetable crops to different agroclimatic and edaphic conditions of United States with emphasis to PNW	Lecture Group discussion Video presentation	Exams, Assignment
Quantitative Reasoning	Determine irrigation and fertilizer needs of vegetable crops	Lecture Group discussion Video presentation	Exams, Assignment
Scientific Literacy	Vegetable taxonomy. Morphological, physiological and biochemical factors governing growth and development of vegetable crops.	Lecture Group discussion Video presentation	Exams, Assignment
Information literacy	Find, evaluate and assess the validity of different sources of information on vegetable crops.	Term paper Presentation	Exams, Assignment
Communication skills	Group discussion	In-class participation	In-class participation
Depth of learning	Demonstrate understanding of scientific basis for cultivation, harvest, and postharvest handling of vegetable crops	Lectures & reading assignments	Exams, class discussion

Reference books and ONLINE resources: Note: There is no one textbook covering all the topics taught in this course. The following books and publications together are useful as reference material. You are required to pay attention during the lecture and make notes.

- Welbaum GE (2015) Vegetable Production and Practices.
- Maynard DN, George J. Hochmuth GJ (2007) Knott's Handbook for Vegetable Growers 5th Edition
- [Rubatzky VE](#), [Yamaguchi M](#) (1997) World Vegetables: Principles, Production, and Nutritive values
- Decoteau DR (1999) Vegetable Crops

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- Other required reference materials and ONLINE website information will be provided appropriately.

Lecture Topics /Syllabus

1. Origin & domestication of vegetable crops
2. Economic, nutritional & nutraceutical importance
3. Classification of vegetable crops
4. Vegetable production systems
5. Soil & climatic requirements of vegetable crops
6. Mineral nutrition & water management
7. Propagation, growth & development
8. Organic and Greenhouse vegetable production
9. Pests, diseases & disorders
10. Harvesting, postharvest handling & storage
11. Cultivation requirements of specific vegetable crops
12. Herbs, specialty, and minor vegetables (Assignment worth 15% of the final grade)

Distance Learning – Zoom meetings (applicable only when the course is taught online)

- Synchronous classes will be held through zoom meetings every Tuesday and Thursdays. I encourage all students to come to class just like you would during a normal semester. This will help you stay engaged!
- All classes (zoom meetings) are recorded. You can find recordings under the zoom tab.
- PowerPoint slides used in teaching this course can be accessed from CANVAS. THE POWERPOINTS ONLY HELP IN NAVIGATION DURING LECTURES. THEY DO NOT SERVE AS CLASS NOTES IN PREPARING FOR THE EXAMINATION. You are responsible for making additional notes during lectures/from text/online resources.
- DO NOT HESITATE TO LET THE INSTRUCTOR KNOW IF YOU HAVE ANY DIFFICULTIES IN FOLLOWING THE LECTURES OR FINDING INFO ON THE TOPICS TAUGHT IN THE CLASS.
- **Zoom etiquette:**
 - This is a virtual classroom, therefore appropriate classroom behavior is expected
 - Mute your microphone when you are not speaking
 - Keep your video on during class.
 - If you have a question, raise your hand or ask the question in the chat box.
 - Remember the chatbox is public and a record of the chatbox is archived.
 - Please take care of your personal needs prior to entering a zoom classroom. (Appropriate dress, basic hygiene, eating, chewing gum, talking to others in your home etc.)

“CANVAS” - Online Course Management system

- The online course management system can be accessed via CANVAS at:
www.canvas.wsu.edu
- Please check this site frequently for:
 - Announcements
 - Grades
 - Lecture power points, articles to read
 - Detailed assignment information
 - Recordings of class lectures

Instructor Policies

- Your success in this course depends on your **attendance**, participation in discussions, **understanding** and performance in the exams.
- Please try to arrive to class on time and be prepared to participate.
- Changes to the syllabus may occasionally occur. This information will be communicated by announcements in CANVAS or through email. Emails will be sent to your @wsu.edu account. Check your email. If using a different email address, be sure that your @wsu.edu messages are successfully forwarded to your other account.
- Log on to *CANVAS* on the WSU web site to access course announcements, content, grades, etc. Check the site frequently.
- Pay attention to submitting assignments, tests etc. to *CANVAS*. After submission, you should check to make sure it was properly submitted. **This is YOUR responsibility.**
- **You are responsible to resolve computer-related issues, if any, such as attending classes on-line, turning-in assignments, taking, and submitting exams online and on-time in a format accessible by the instructor. You are also responsible for resolving computer-related compatibility issues, if any, at your end ahead of time.**
- **Exams/reports/assignments submitted late are not graded**
- Tests, assignments – **no makeups unless students contact instructor prior to the event.** If there are extreme, extenuating circumstances, an alternative arrangement or to assigning an incomplete grade may be considered.
- **Examinations and Grading**
 - 1 FOUR lecture examinations will be given during the term. **You are required to identify yourself on the exams with your name and LAST 4 digits of your ID number.**
 - 2 This course has **TWO** lectures per week of 75 min each. There will be quite an amount of information covered that requires a significant amount of time in preparation to face the examination.
 - 3 There will be a review session before every examination. **YOU ARE REQUIRED TO COME PREPARED FOR THE REVIEW SESSION TO ASK QUESTIONS AND SEEK CLARIFICATION.**
 - 4 Questions will be drawn from lectures, reading, you-tube videos and any assigned homework.
 - 5 Exams will assess knowledge of taxonomy, and scientific aspects associated with production and postharvest of vegetable crops. You are expected to know the botanical name, family of each vegetable crop as well.

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Type of Questions	Testing attribute
<i>Fill in the blanks</i>	Answer recall
<i>Match the following</i>	Identify the correct response
<i>Multiple choice</i>	Identify the correct response
<i>True or False</i>	Distinguish between correct and incorrect responses
<i>Provide reasons</i>	Ascertain depth of understanding
<i>Short answers</i>	Use of proper language, spelling and grammar

- Discussion type questions will be used to assess comprehension and understanding. You are expected to organize ideas, thoughts, and information to present logical, comprehensible answers to discussion-type questions.
- Proper use of grammar, syntax, and spelling will be beneficial in evaluating your answers and assign proper grade.
- The final exam will be comprehensive, and you are required to demonstrate your ability to synthesize knowledge gained throughout the semester into logical solutions for problems involved in plant propagation.
- Assignment 1: Each student is assigned a minor vegetable crop (may include herbs and spices). You are required to prepare a report on the assigned vegetable crops (see the format posted on CANVAS).
- Assignment 2: You are required to prepare a report on the You-tube videos presenting production/harvesting/postharvest processing of vegetable crops (see the format posted on CANVAS)

Grading

Exam I (Sept 14, 2023)	10%
Exam II (Oct 12, 2023)	15%
Exam III (Nov 16, 2023)	20%
Final Exam (Comprehensive) (Dec 12, 2023; 8-10 am)	20%
Assignments (1)	15%
Assignment (2)	15%
Class Attendance (in person)	5%
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Total	100

Grading will be based upon a percentage basis: Example:

A: 95-100%; A-: 91-94%; B: 85-87%; B⁺: 88-90%; B-: 80-84%; C+: 78-80%; C-: 70-74%; C: 75-77%; D+ 68-70%; D-: 60-64%; D: 65-67; F: Below 60%

An example of grade calculation:

	Points	%	Score	Equivalent
Exam I	65	10	55	8
Exam II	68	15	56	12
Exam III	75	20	72	19
Final	90	20	80	18
Assignment 1	145	15	98	10
Assignment 2	80	15	60	11
Attendance*	24	5	18**	4
			Total	83
			Grade	B-

*Number of classes ** Number of classes attended

Information about the Required Policy Statements

➤ **Reasonable Accommodation Campus Syllabus Statement.**

Students with Disabilities: Reasonable accommodations are available for students with documented disabilities or chronic medical conditions. If you have a disability and need accommodations to fully participate in this class, please visit your campus Access Center website (websites listed below) to follow published procedures to request accommodations. Students may also call or email the Access Center to schedule an appointment with an Access Advisor. All disability related accommodations are to be approved through the Access Center. It is a university expectation that students with approved accommodations visit with instructors (via email or zoom) within two weeks of requesting their accommodations to discuss logistics.

➤ **WSU Online Course Syllabus Statement**

Reasonable accommodations to reduce/eliminate barriers in the learning environment are available in online classes for students with a documented disability/chronic medical condition. All accommodations must be approved through your WSU Disability Services office. If you have a disability and need accommodations, we recommend you begin the process as soon as possible. It is a university expectation that students with approved accommodations visit with instructors (via email or zoom) within two weeks of requesting their accommodations to discuss logistics.

➤ **For more information contact a Disability Specialist on your home campus:**

- Pullman or WSU Online: 509-335-3417.
- <http://accesscenter.wsu.edu>, Access.Center@wsu.edu
- Spokane: <https://spokane.wsu.edu/studentaffairs/access-resources/>
- Tri-Cities: <http://www.tricity.wsu.edu/disability/>
- Vancouver: 360-546-9138.
 - <https://studentaffairs.vancouver.wsu.edu/studentwellness-center/access-center>

Academic Integrity Policy

- Washington State University, a community dedicated to the advancement of knowledge, expects all students to behave in a manner consistent with its high standards of scholarship and conduct. Students are expected to uphold these standards both on and off campus and acknowledge the university's authority to take disciplinary action. The purpose of these standards and processes is to educate students and protect the welfare of the community.
- University instructors have the authority to intervene in all situations where students are suspected of academic dishonesty. In such instances, responsible instructors retain the authority to assign grades to students considering, from an academic standpoint, the nature of the student action. The consequences for such actions should be spelled out beforehand in the syllabus. More information regarding responding to academic integrity violations can be found at: <https://communitystandards.wsu.edu/>

Accommodation for Religious Observances or Activities:

- Washington State University reasonably accommodates absences allowing for students to take holidays for reasons of faith or conscience or organized activities conducted under the auspices of a religious denomination, church, or religious organization. Reasonable accommodation requires the student to coordinate with the instructor on scheduling examinations or other activities necessary for course completion. Students requesting accommodation must provide written notification within the first two weeks of the beginning of the course and include specific dates for absences. Approved accommodations for absences will not adversely impact student grades. Absence from classes or examinations for religious reasons does not relieve students from responsibility for any part of the course work required during the period of absence. Students who feel they have been treated unfairly in terms of this accommodation may refer to Academic Regulation 104 – Academic Complaint Procedures.

Dates to Remember

Date	Activity
Sept 14, 2023	Exam I
Oct 12, 2023	Exam II
Oct 19, 2023	Video reports due (1-10) Assignment 2
Nov 01, 2023	Crop sheet due (assignment 1)
Nov 16, 2023	Exam III
Nov 23, 2023	Video reports due (11-22) Assignment 2
Dec 12, 2023	Final Exam