UNIVERSITY OF FLORIDA

Horticultural Sciences Department

PLS 2830 Fall 2025

World Herbs and Vegetables

Class # 16138, 20671 and 20785; Sections **5368, 5369 and 5370**

Course Location: 100% online: Login to UF E-learning (Canvas): https://elearning.ufl.edu/

Instructor: Bala Rathinasabapathi, Ph.D., / **Teaching Assistant:** TBA

Course Communication: Please send email using UF E-learning (Canvas) for course related information

Technology Requirement: Coursework will require the use of a computer and a broadband connection to the internet and facilities to watch audiovisual presentations via resources in Canvas. Students can contact UF Computing Help for questions regarding technology needed by calling 352-392-4357 or via e mail helpdesk@ufl.edu.

Office hours: By appointment in person, by phone, or Zoom.
Fifield Hall Room 2247
Phone 352-273-4847
E mail brath@ufl.edu

Course Materials:

- Required notes & additional readings and multimedia materials will be distributed via UF E-learning.
- Physical materials for hands-on activities will be shipped directly to addresses provided by students.

Course Format and Structure:

- 3-credit General Education Biological Science course for majors and non-majors.
- This course requires no pre-requisites.
- Recorded presentations and demonstrations available each week.
- Question and Answer Sessions during each module.
- Lab activities composed of hands-on projects using material shipped to the students, Writing, Student Presentation, Discussions, Group Work and Examinations are all used to evaluate student learning.

Minimum Skills Required:

Learners are required to be familiar with the use of Canvas and be able to use software (Microsoft Word or equivalent) required to prepare written documents, or to prepare a presentation (using VoiceThread or equivalent) following instructions, and save, and upload files.

Optional Textbooks:

- Vegetable Crops. DeCoteau DR. Prentice Hall, 2000. ISBN 10:0139569960.
- Vegetable Gardening in Florida. J.M. Stephens. University Press of Florida, ISBN 0813016746.
- World Vegetables: Principles, production and nutritive values. Vincent E. Rubatzky and Mas Yamaguchi. Chapman & Hall, ISBN 0-412-11221-3, pp.843 Second Ed., 1997.

Other References:

- Vegetables from Amaranth to Zucchini. Elizabeth Schneider, William Morrow. ISBN 0-688-15260-0, pp. 775, 2001.
- Perennial Vegetables. Eric Toensmeier. Chelsea Green Publishing, Vermont, ISBN 978-1-931498-40-1, 2007.
- Encyclopedia of herbs and their uses. D. Bown, Dorling Kindersley, ISBN 0-7894-0184-3, pp.424, First ed., 1995.
- Manual of Minor Vegetables. By J.M. Stephens. Florida Cooperative Extension Service, IFAS, University of Florida, Gainesville, 1988.
- Articles from Florida Cooperative Extension Service and technical journals (Journal of the American Society of Horticultural Science, Economic Botany, Phytochemistry, Hortscience, and American Vegetable Grower).

Course Goal:

Students will learn about history, botanic properties, genetics, use and cultivation for a variety of culinary herbs and vegetables from around the world. Meeting the learning outcomes 1-9, the students will gain knowledge about culinary herbs and vegetables, food systems, nutrition and health promotion, and skills on growing and using vegetables and herbs that they can use in their lives.

Learning Outcomes:

By the end of the semester, the conscientious student should be able to:

(1) Identify common and uncommon vegetables, herbs and spices.
(2) Describe:
    - Classifications of vegetables and plants,
    - Parts of edible plants,
    - Historical, cultural origin and
    - Family characteristics for major vegetables.
(3) Explain biological principles behind genetic improvement of crops.
(4) Propagate and cultivate herbs and vegetable plants.
(5) Find scientifically valid information on the production and dietary value of vegetables and herbs.
(6) Discuss current issues in the cultivation and use of vegetables and herbs.
(7) Develop a detailed plan for the design and implementation of a commercial vegetable production unit.
(8) Critically analyze research on vegetables and herbs.
(9) *Subject area goal for Biological Sciences General Education for the instructor*:
Provide instruction in the basic concepts, theories, and terms of the scientific method in the context of the life sciences. Focus will be on major scientific developments and their impacts. Students will formulate testable hypotheses from the study of living things (plants), apply logical reasoning skills and apply methods of discovery and critical thinking to evaluate outcomes of experiments or critical analyses.

Assignments:
Course assignments are designed to provide students with core knowledge and basic skills. They are intended to encourage critical thinking and communication skills. (Full details are found on page 6.) For each assignment type, the linkage to learning outcomes (1-9 listed above) are indicated.

- Each hands-on activity requires a lab report in standard format (1,4, 9).
- The project includes two individual reports which require group interaction to complete (6,7).
- Two discussions consist of short position papers (3,5).

- One class presentation uses multimedia to share online (2,3,5,6,8).
- The discussions and presentations include comments and questions made between classmates (6).
- Exams are based upon content from instructor presentations, required readings and videos (1,2,3,8, 9*)*.
- Asynchronous question and answer sessions are conducted in each module (1-9).

Evaluation:

Students will be evaluated based on the following:

• Class participation	200 points (20 %)
• Activity reports	200 points (20 %)
• Group project	200 points (20 %)
• Student presentation	175 points (17.5 %)
• Exams (3 total)	225 points (22.5 %)
TOTAL	**1000 points**

Evaluation items each have absolute start and due dates (provided on page 5); with one exception. Activity reports can be submitted after the due date with a point reduction of 20% per day.

IMPORTANT! PRINT PAGES 3 , 4 and 5 BELOW FOR REFERENCE THROUGHOUT SEMESTER.

GETTING STARTED: Week 1 (Aug 21 to Aug 27) - ***All items marked with an asterisk (*) must be completed to access the course modules.***

Presentations:

• Course Overview – Syllabus; Assignments and Evaluations Instructor Introduction What is Horticulture?

*Question & Answer Session – Practice**
*Student Introductions**
*Syllabus Quiz**

MODULE 1: Weeks 1 to 3 (Aug 21 - Sep 8)

Upon completion of module 1, students will be able to (a) write at least four nutritional and health promoting properties of vegetables, fruits, herbs and spices, (b) search for and evaluate information on specific vegetables, fruits, herbs and spices using online and other resources, (c) complete a hands-on activity for making sprouts and write a report on it and (d) analyze the dietary patterns of world's longest living people. Students will write two reports during this module and receive feedback from the instructor. Module 1 covers learning outcomes 1, 2, 4, 5, 8 and 9.

Presentations:

• Role of vegetables, fruits, herbs and spices in human nutrition and dietary quality.
• Your food - The big picture
• What do we learn from world's longest living people?
• Health promotion from plant foods

Question & Answer Session 1
Activity 1: Informational resources on food and agriculture.
Activity 2: Growing Sprouts and Microgreens

MODULE 2: Weeks 4 and 5 (Sep 09 – Sep 21)

Upon completion of module 2, the students will be able to (a) describe the importance of genetic diversity in crops and identify methods used in developing new cultivars of food crops, (b) analyze differences between conventional plant breeding methods and biotechnology, (c) find out methods of propagating herb plants via an activity and write a report on it. The students will receive feedback on the report from the instructor. Module 2 covers learning outcomes 3, 4 and 9.

Presentations:
• How did new vegetable crops evolve?
• How do we breed new varieties? "Building Better Peppers Project"
• Plant Biotechnology and genome editing

Question & Answer Session 2
Activity 3: Rooting of cuttings of herb plants
Exam 1 (Covering Modules 1 & 2)

MODULE 3: Weeks 6, 7, and 8 (Sep 22 – Oct 12)

Upon completion of module 3, students will be able to (a) identify various vegetables and herbs in different plant families, (b) describe history, botanical characteristics, production tips and uses for vegetables (lettuces, artichoke, cucurbits, tomato, pepper, eggplant, potato, onions and legumes), (c) acquire skills related to growing plants by beginning a container garden, (d) contribute to a recipe book and (e) discuss the best methods to develop new cultivars. (f) Students will be able to plan a cooperative vegetable production unit by doing the first part of a group project. Their group project reports will receive instructor feedback so that they can improve their reports prior to final submission. Module 3 covers learning outcomes 1-5, 7 and 9.

Presentations:
• Salad Greens: Lettuce, Endive and Artichoke
• Squash, Pumpkins, Cucumbers and Gourds
• Potato, Eggplant and Tomato
• Planning a Vegetable Garden
• Allium: Onion and Garlic
• Vegetable Legumes: Plant Proteins

Question & Answer Session 3
Activity 4: Growing a Container Garden begins
Activity 5: Class Recipe Book
Discussion 1: Best Crop Development Methods

Group Project Part 1 – Select Crop for Individual Work
Group Project Part 1 – Submit Crop Report First Draft
Exam 2 (Covering Module 3)

MODULE 4: Weeks 9 - 10 (Oct 13 – Oct 26)

Upon completion of module 4, students will be able to (a) describe history, botanical characteristics, production tips and uses for herbs (basil and related herbs, umbellifers, ginger, turmeric, cardamom and vanilla), (b) acquire hands on skills related to growing plants in a container garden, (c) acquire hands on skills on using spices by completing a hands on activity making spice blends and a write a report on it, (d) do prepare various

teas and write a report on it, and (e) find out information related to cultivating vegetable crops in a production unit by way of group project part II. Student reports for the group project will receive instructor feedback using which they can improve their reports prior to final submission. Module 4 covers learning outcomes 5-9.

Presentations:
• Carrots and Umbelliferous Herbs
• Ginger and Turmeric; Cardamom and Allspice
• Basil, Mint, Oregano, Marjoram and Rosemary
• Vanilla

Question & Answer Session 4
Activity 6: Preparation and use of Spice Blends
Activity 7: Preparation of Various Kinds of Teas
Group Project Part 2 – Select Specialization
Student Presentations – Submit topic for review

MODULE 5: Weeks 11 and 12 (Oct 27 – Nov 10)

Upon completion of module 5, students will be able to (a) describe the history, uses and production details of tropical crops (tea, cacao, banana and plantain, breadfruit and jackfruit), (b) be able to produce salads with vegetables, fruit and herbs of varying flavors and textures via a hands-on activity and writing a report, (c) discuss the role of vegetables and fruit in our diet via a discussion and (d) be able to work collaboratively work to produce a document describing the planned activities of a vegetable production unit (group project part 2). The students will receive input on their group project work before final reports for grades. Module 5 addresses learning outcomes 1, 2, 5-9.

Presentations:
• Tea
• Cacao
• Banana and Plantains
• Breadfruit and Jackfruit

Question & Answer Session 5
Activity 8: Unique Flavors and Textures of Food
Discussion 2: Best Diet for Nutrition and the Environment Part 1
Group Project Part 2 –Submit Specialization Report First Draft
Exam 3 (Covering Modules 4 and 5)

MODULE 6: Weeks 13, 14, 15 and 16 (Nov 10 – Dec 12; Dec 3 is the last day of class)

Upon completion of module 6, students will be able to (a) discuss the merits and demerits of specific diets (discussion continued from previous module), (b) gain hands-on skills in growing a container garden activity (Continued from the previous module) and (c) make a presentation on a topic of their interest via VoiceThread and comment on the presentations by their peers. This module addresses learning outcomes from 5 to 9.

Activity 4: Container Garden is due
Discussion 2: Best Diet for Nutrition and the Environment Part 2
Group Project Completed
Student Presentations Completed
Student Presentations Comments and Questions

Critical Course Dates and Times (All times are U.S. Eastern Standard)

Getting Started	Open Date @ 10am	Due Date @ 11:59 pm	Points
1. Syllabus Quiz	Aug 21	Aug 28; Due 28th, open till Sep 2	0
2. Introduction Discussion	Aug 21	Aug 28, Due 28th, open till Sep 2	0
3. Question & Answer Practice Session	Aug 21	Aug 29	0

Exam	Open @10am	Due @ 11:59PM	Duration	Points
1	Sep 21	Sep 22	33 Questions / 50 Minutes	75
2	Oct 12	Oct 13	33 Questions / 50 Minutes	75
3	Nov 16	Nov 17	33 Questions / 50 Minutes	75

Activity Number and Topic	Open @10am	Due @ 11:59PM	Points
1 Information Resources: Nutrition & Horticulture	Aug 27	Sep 3 = 1 week to complete	20
2 Growing Sprouts and Microgreens	Sep 3	Sep 10 = 1 week to complete	20
3 Propagation by Rooting Plant Cuttings	Sep 11	Sep 25 = 2 weeks to complete	20
4 Growing a Container Garden	Sep 25	Nov 20 = 8 weeks to complete	40
5 Creating Recipes for the Class 'Cook Book'	Sep 25	Oct 9 = 2 weeks to complete	40
6 Preparing and Using Spice Blends	Oct 9	Oct 16 = 1 week to complete	20
7 Preparing Various Types of Tea	Oct 30	Nov 6 = 1 week to complete	20
8 Unique Flavors and Textures of Food	Nov 6	Nov 13 = 1 week to complete	20

Question and Answer Sessions	Submitted Until @11:59pm	Instructor's Response on	Points
Session 1	Sep 5	Sep 12	10
Session 2	Sep 26	Oct 3	10
Session 3	Oct 09	Oct 13	10
Session 4	Oct 24	Oct 31	10
Session 5	Nov 7	Nov 14	10

Discussion Numbers and Topic	Part 1	Part 2	Points
1. Best Crop Development Methods	Sep 17-Oct 2	Oct 3 – Oct 10	75
2. Best Diet for Nutrition & Environment	Nov 6 – Nov 13	Nov 14 – Nov 21	75

Group Project	Open Date	First Draft Due @11:59pm	Final Draft Due @11:59pm	Points
Group Collaboration	Oct 1	N/A	Dec 2	50
Select Crop Topic	Oct 1	N/A	Oct 3	0
Crop Topic Report	Oct 6	Oct 10	Oct 24	25+50 = 75
Select Specialization	Oct 26	N/A	Oct 30	0
Specialization Report	Oct 31	Nov 10	Nov 17	25+50 = 75
Project Manager Report	Nov 18	Nov 24	Dec 2	25+50 = 75

Presentations	Open Date	Due date	Approval date	Points
Topic Submission	Oct 27	Oct 31	Nov 5	0
Completed Presentation	Nov 10	Dec 2	N/A	125
Comments and Questions by Students	Nov 10	Dec 2	N/A	50

Course Grading Scale

Letter grades for the course will be assigned according to the chart below:

90-100 = A; 87-89.9 = A-
84-86.9 = B+; 80-83.9 = B; 77-79.5 = B-
74-76.9 = C+; 70-73.9 = C; 67-69.9 = C-
64-66.9 = D+; 60-63.9 = D; 57-59.9 = D-; 56-below = E

Evaluation items each have absolute start and due dates (provided on page 5); with one exception. Activity reports can be submitted after the due date with a point reduction of 20% per day.

UF Grading policies can be found here:
https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/

Course Evaluation Details

Planned Activities. Students will be asked to follow specific instructions posted in UF E-learning to complete each activity. Material for the activities will be shipped to students at the start of the semester. For this purpose, all the students registered in this course must provide the instructor their complete postal address in week 1. Students residing on or near Gainesville campus can opt to collect the material from Fifield Hall.

Activity reports. Each report will be completed using the following format. Include a title for the exercise and your name at the top of the page. Then, state the following in order: Objective(s) of the exercise, Exactly what you did in this activity, What you observed, Concluding ideas, thoughts and inspirations. The due date for each activity report is shown in the table above. Only one activity, "Container Gardens," will have a longer time between the open and close dates to allow time for growing and harvesting plants in the "garden."

Class participation. Student's participation will be evaluated based on involvement in Question-and-Answer Sessions, Discussions, and their engagement with the material presented in this course. Every presentation in the course is accompanied by a handout for student note taking. Each presentation segment ends with a request for questions. Students are encouraged to write their questions in the handout while watching each presentation. During each module, student questions will be submitted in UF e-learning and evaluated (5 x 10 points) and then answered by the instructor as a response to the entire class.

Two formal discussions will be conducted during the course (2 x 75 points). Discussions will be evaluated based upon academic research, writing, and documented support in each student's 3-5 paragraph position paper. Individual responses to the positions of their classmates are also part of the evaluation.

Group project. Groups of 5-10 students will work to design a small commercial vegetable production project. Every group member will produce reports that are graded individually. Each student will select a separate crop to grow from the major plant "families" studied during the course presentations (Report 1). The group will then divide responsibilities for primary functions needed to implement the vegetable production project. At this stage students may choose to be a garden manager or specialist (Report 2). All group work will be conducted using tools available in the e-learning portal (Canvas). The project will be graded on individual reports (2 x 75 points) as well as collaboration among group members (50 points). Please see the Group Project document in the e-learning portal (Canvas) for full details.

Student presentations. Students will create and deliver an original multimedia presentation / demonstration with PowerPoint and/or video using the Voicethread program in the UF e-learning portal. Voicethread provides an interface for sharing the virtual presentations with every member of the course.

Students must select a topic and have it approved. Presentations will be graded (125 points) for content, originality, selection and acknowledgement of sources, clarity of communication, and audience engagement. Student involvement through comments and questions about presentations will also be graded (50 points).

Exams. There are three course exams. Each exam is worth 70 points. All exams are available online for 38 hours in the e-learning portal. Each exam will cover all material in the instructor presentations, assigned readings and videos. A study guide will be provided prior to each exam. Dates and times are shown above.

Course policy on due dates, late submissions, and missed evaluation items.
All due dates are provided in the tables above. These dates are absolute. Some items must be completed to begin the course. Others such as submitting your topics for the group project and presentation are critical to continued involvement in that component of the course. Even if they have no points, not meeting these critical

dates may preclude further involvement. This is stated with consideration of details found in "Make-Up Work" below. *If you are having trouble with homework or class, please contact your instructor immediately*.

University policies and procedures

Privacy Policies:

- UF's Online Privacy Policies: https://policy.ufl.edu/policy/online-internet-privacy-statement/
- Canvas: https://canvas-student.net/privacy
- VoiceThread: https://voicethread.com/privacy/
- Mediasite: https://sonicfoundry.com/privacy-policy/

Grades and Grade Points: For information on current UF policies for assigning grade points, see https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx.

Make-Up Work:
Test makeups will be arranged only in the case of documented illness/ emergency. Requirements for make-up exams, assignments and other work are consistent with university policies that can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx.

Safety: Follow all safety regulations for all class activities. If you are using a vegetable, spice or herb first time, sample a small amount to test whether you are not allergic to it. If you are using sharp tools to cut plant material, exercise caution in handling the tools.

Online Course Evaluation Process: Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. These evaluations are conducted online at https://evaluations.ufl.edu.

Evaluations are typically open for students to complete during the last two weeks of the semester, students will be notified of the specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results.

Academic Honesty: As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: "*We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity*". You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: "*On my honor, I have neither given nor received unauthorized aid in doing this assignment*".

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Do not use AI tools such as ChatGPT for homework unless instructed to do so. Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel.

Avoid plagiarism in your writing. Write in your own words after taking notes from different sources. Cite the sources if you are making a point from consulting work by others. If you are quoting others, place the text in quotes and cite their work. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the

University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code.

Software Use: All faculty, staff and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

AI tools: Please do not use Artificial Intelligence tools (e.g. ChatGPT) while writing your reports and assignments for this course unless explicitly instructed.

Services for Students with Disabilities: The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation: 0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/

Campus Helping Resources: Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, www.counseling.ufl.edu/cwc/ Counseling services, groups and workshops, outreach and consultation, self-help library and wellbeing coaching.

U Matter We Care, www.umatter.ufl.edu/

Career Resource Center, First Floor JWRU, 392-1601, www.career.ufl.edu/