Syllabus

PLS 5222C, Advanced Plant Propagation

*Fall 2020 Online, 2 credits*

**Instructors**

<table>
<thead>
<tr>
<th>Dr. Sandra Wilson</th>
<th>Dr. Mack Thetford</th>
<th>Gabriel Campbell</th>
<th>Heather Kalaman</th>
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<tbody>
<tr>
<td>Professor,</td>
<td>Assoc. Prof.,</td>
<td>Ph.D. student</td>
<td>M.S/DPM student</td>
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<tr>
<td>Gainesville</td>
<td>Milton</td>
<td>Milton</td>
<td>Gainesville</td>
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(772) 834-7619     (850) 983-7130 (727) 452-1333 (321) 303-2278
sbwilson@ufl.edu   thetford@ufl.edu  camp5595@ufl.edu  hkalaman@ufl.edu

**Teaching Assistants**

LAB INSTRUCTORS AND LOCATIONS: Dr. Mack Thetford (West Florida REC, Milton); Erin Alvarez (Main Campus, Gainesville); Dr. Richard Beeson (Mid-Florida REC, Apopka); Dr. Kimberly Klock Moore (Fort Lauderdale REC).

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**Course Description**

The lecture component of this course is completely web-based. Corresponding labs will be taught on site at the respective campuses. All aspects of plant propagation will be studied that include methods of propagating by seeds, bulbs, divisions, layers, cuttings, budding, grafting, and micropropagation. The timing, technique, and material for making cuttings, environmental conditions, and media requirements for rooting cuttings of ornamental plants, fruit trees, shrubs, and flowering plants will be studied. Various propagation structures, soils, and fertilizer requirements will be considered. Emphasis is placed on the basic principles of plant propagation to provide an adequate background in the areas of agronomy, horticulture, forestry, and other disciplines of plant science.

**Prerequisite**

BOT 2010C or BSC 2010

**Learning Objectives**

*At the conclusion of this course, students should have:*

1. a comprehensive knowledge of the science of plant propagation including the effects of plant physiological reactions, anatomical structure, and environmental influences on material used in plant propagation.

2. skill in the art of plant propagation by seeds and vegetative organs.

3. demonstrated critical thinking through class discussions, outside reading assignments, outside projects, and field practice.

4. a vocabulary of plant propagation terminology and its proper use orally and in writing.
5. an interest, understanding, and appreciation of the principles and techniques of plant propagation.

Course Materials

**CANVAS** (for lecture print-outs, additional readings, group assignment descriptions, discussions, testing, etc.) [http://elearning.ufl.edu/](http://elearning.ufl.edu/)

**website:** [http://irrecenvhort.ifas.ufl.edu/Propagation/index.html](http://irrecenvhort.ifas.ufl.edu/Propagation/index.html)

Course Textbook


There are used desk copies and e-Textbooks available to rent or purchase at a reduced price (see vitalsource.com; amazon.com and others). Just make sure you get the 9th edition!

Other Useful Book References

*desk copies can be found in the instructor’s office


Student Responsibilities

 ✓ **Attendance:** You are expected to virtually attend all classes and activities

 ✓ **Preparation:** You are responsible for retrieving and reviewing necessary materials prior to scheduled zoom discussions

 ✓ **Exams and assignments:** There are no makeups. **In the case of emergencies,** assignments will be marked down 5 percentage points for each day late.

Student Evaluation

Any questions regarding your performance on any assignment are welcome. Grading follows University standards and will be based on the following:
*All assignments are to be submitted via Canvas. Assignments will open on Thursdays at 9:00 pm and close the following Tuesday at 9:00 am. There are 3 required zoom sessions. These are scheduled on the Monday prior to each exam from 5:30-6:30 EST. Note: although exams and quizzes are open book, students must prepare adequately as these are timed events.

**EXAMS** (Multiple Choice, T/F, Matching, Short Answer)
- Exam 1 (chapters 4-8) ........................................................................................100 pts
- Exam 2 (chapters 9-14) ......................................................................................100 pts
- Exam 3 (chapters 15-18) ..................................................................................100 pts

**ASSIGNMENTS/QUIZZES**
- Bio/Picture/Video .................................................................................................5 pts
- Pre-course Survey .................................................................................................5 pts
- Quiz 1 (chapters 1-2) ...........................................................................................10 pts
- Quiz 2 (chapters 3-6) ...........................................................................................10 pts
- Quiz 3 (chapters 9-11) .........................................................................................10 pts
- Post Course Survey ...............................................................................................10 pts
- Zoom Participation (3 @ 5 pts for each of the three) ..........................................15 pts
- Laboratory Component (directed by respective lab instructors) .........................100 pts
- Graduate Project (independent project directed by lab instructors) ...................35 pts

*Identified lab instructors will oversee lab exercises and graduate student project and provide scores to Lecture instructor for a combined lecture/lab grade.

**Grading Policy**
Final grades will be based on the follow scale: 500 Total Points

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Grade</th>
<th>Total Points</th>
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<tbody>
<tr>
<td>93.5-100%</td>
<td>A</td>
<td>468-500 pts</td>
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<tr>
<td>89.5-93.4%</td>
<td>A-</td>
<td>448-467 pts</td>
</tr>
<tr>
<td>86.5-89.4%</td>
<td>B+</td>
<td>433-447 pts</td>
</tr>
<tr>
<td>82.5-86.4%</td>
<td>B</td>
<td>413-432 pts</td>
</tr>
<tr>
<td>79.5-82.4%</td>
<td>B-</td>
<td>398-412 pts</td>
</tr>
<tr>
<td>76.5-79.4%</td>
<td>C+</td>
<td>383-397 pts</td>
</tr>
<tr>
<td>72.5-76.4%</td>
<td>C</td>
<td>363-382 pts</td>
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<tr>
<td>69.5-72.4%</td>
<td>C-</td>
<td>348-362 pts</td>
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<tr>
<td>66.5-69.4%</td>
<td>D+</td>
<td>333-347 pts</td>
</tr>
<tr>
<td>62.5-66.4%</td>
<td>D</td>
<td>313-332 pts</td>
</tr>
<tr>
<td>59.5-62.4%</td>
<td>D-</td>
<td>298-312 pts</td>
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<tr>
<td>≤59.4%</td>
<td>E</td>
<td>≤297 pts</td>
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# Course Schedule

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<thead>
<tr>
<th>Module</th>
<th>Week</th>
<th>Instructor Lectures</th>
<th>Guest Lectures and Videos</th>
<th>Reading Assignment &amp; Self Review</th>
<th>E-learning Assignments</th>
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| **1-General Aspects of Propagation** | wk 1 | Aug 31-Sept. 4 | How Plant Propagation Evolved in Human Society | **Read:** Chapter 1  
**Do:** Interactive Self-review | **Post your Bio**  
(5 pts)  
**Take Pre-course Survey**  
(5 pts) |
| | wk 2 | Sept 7-11 | Biology of Plant Propagation | **Read:** Chapter 2  
**Do:** Interactive Self Review | |
| | wk 3 | Sept 14-18 | The Propagation Environment | **Read:** Chapter 3  
**Do:** Interactive Self Review  
**Do:** PropG Glossary Term Self Review | **Quiz 1:**  
Chapters 1-2  
Timed, open book  
(10 pts) |
| **2-Seed Propagation** | wk 4 | Sept 21-25 | Seed Development Principles and Practices of Seed Selection | **Read:** Chapters 4 and 5  
**Do:** Interactive Self Reviews | |
| | wk 5 | Sept 28-Oct 2 | Techniques of Seed Production and Handling | **Read:** Chapter 6  
**Do:** Interactive Self Review | **Quiz 2:**  
Chapters 3-6  
Timed, open book  
(10 pts) |
| wk 6 | Oct 5-Oct 9 | Principles of Propagation from Seeds | **Lecture**: B. Geneve-Physical Seed Dormancy (31 min.) | **Read**: Chapter 7 | **Zoom 1**: (5 pts) Monday Oct 5, 5:30-6:30 pm EST Review and Discussion with Instructors |
| wk 7 | Oct 12-16 | Techniques of Propagation by Seed | **Video**: Seedling production at Knox Nursery, Winter Garden, FL (9 min.) | **Read**: Chapter 8 | **Exam 1**: Chapters 4-8 Timed, open book (100 pts) |
| wk 8 | Oct 19-23 | Principles and Practices of Clonal Selection | **Read**: Chapter 9 | **Do**: Interactive Self Review |
| wk 9 | Oct 26-30 | Principles of Propagation by Cuttings Techniques of Propagation by Cuttings | **Lecture**: J. Gibson - Stock Plant Management, Parts 1 & 2 (43 min.) | **Read**: Chapters 10 and 11 | **Do**: Interactive Self Review |
| wk 10 | Nov 2-6 | Principles of Grafting and Budding | **Read**: Chapter 12 | **Quiz 3**: Chapters 9-11. Timed, open book (10 pts) |
| wk 11 | Nov 9-13 | Techniques of Grafting  
Techniques of Budding | Video: J. Williamson  
budding and grafting  
demonstration of citrus  
(15 min.) | Read: Chapters 13  
and 14  
Do: Interactive Self  
Reviews | Zoom 2: (5 pts)  
Monday Nov 9  
5:30-6:30 EST  
ZOOM Review and  
Discussion with  
Instructors |
|--------|----------|--------------------------|----------------------|-----------------|------------------|
| wk 12 | Nov 16-20 | Layering and Its  
Natural Modifications | Read: Chapter 15  
Do: Interactive Self  
Review  
Do: PropG Glossary  
Term Self Review | Exam 2:  
Chapters 9-14  
Timed, open book  
(100 pts) |
| wk 13 | Nov 23-27 | Propagation by  
Specialized Stems  
and Roots | Read: Chapter 16  
Do: Interactive Self  
Review | |
| wk 14 | Nov 30-  
Dec 4 | Principles and  
Techniques of  
Micropropagation  
from Meristematic  
Tissue | Lecture: M. Kane-  
Micropropagation  
(1.38 hr lecture)  
Video: N. Philman  
Sterile technique using a  
laminar flow hood  
(8 min.)  
Video: Commercial  
micropropagation,  
Agristarts, Inc., Apopka,  
FL (15 min.) | Read: Chapter 17  
Do: Interactive Self  
Review | Take Post-course  
Survey: (10 pts) |
| wk 15 | Dec 7-11 | Principles and  
Techniques of  
Plant Tissue  
Culture from Non-  
meristematic  
Tissue | Lecture: W. Vendrame-  
Embryogenesis  
(20 min.) | Read: Chapter 18  
Do: Interactive Self  
Review  
Do: PropG Glossary  
Term Self Review | Zoom 3: (5 pts)  
Monday Dec 7  
5:30-6:30 EST  
ZOOM Review and  
Discussion with  
Instructors |
| wk 16 | Dec 12-16 | | | Exam 3: Chapters  
15-18  
Timed, open book  
(100 pts) |
Self-review exercises of subject matter for each chapter and glossary terms can be found at http://irrecenvhort.ifas.ufl.edu/creative_tools.html.

UF classes begin August 31st; drop deadline Nov. 23rd, classes end Dec 9th, Reading days Dec. 10-11th, final Exams Dec. 12-18th. Holidays Sept 7th, Oct. 2-3rd, Nov. 11th, Nov. 25-28th

Course Policies and Campus Resources

Grades and Grade Points
For information on current UF policies for assigning grade points, see https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/.

Fees: Distance Learning, $20.00

Attendance and Make-Up Work
Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at: https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/.

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. Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at: https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at: https://gatorevals.aa.ufl.edu/public-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). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. 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.

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, https://disability.ufl.edu/

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

Counseling Services
Groups and Workshops
Outreach and Consultation
Self-Help Library
Wellness Coaching
• U Matter We Care, www.umatter.ufl.edu/

• Career Connections Center, First Floor JWRU, 392-1601, https://career.ufl.edu/.

Student Complaints:
• Residential Course: https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/.
• Online Course: http://www.distance.ufl.edu/student-complaint-process