

Plant Propagation (PLS 5222, 3 credits)

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Course Websites:

[http://
irrecenvhort.ifas.ufl.edu](http://irrecenvhort.ifas.ufl.edu)

E-learning Website:

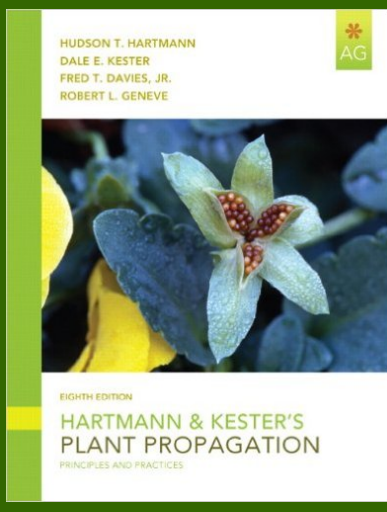
<http://lss.at.ufl.edu>

Gatorlink Login:

[http://
www.gatorlink.ufl.edu](http://www.gatorlink.ufl.edu)

UF Computing Help Desk:

[http://
helpdesk.ufl.edu/self-help/](http://helpdesk.ufl.edu/self-help/)



Graduate Course Syllabus

Course Instructors:

Dr. Mack Thetford (WFREC)

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Dr. Kimberly Moore (FLREC)

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E-mail: klock@ufl.edu

Prerequisite:

BOT 2010C or BSC 2010

Course Textbook: (Required)

**Hartmann & Kester's
Plant Propagation:
Principles and Practices,
8th Edition**

Hartmann, Kester, Davies &
Geneve ©2011

Prentice-Hall, Inc. Publishing, Up-
per Saddle, NJ.

ISBN: 978-0-13-501449-3

Other Course materials:

*Plant Propagation Lectures
and Videos available on the
Course Websites*

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.

Office Hours:

Faculty will be available online, in person or by phone. Feel free to make an appointment with the instructor at a specific time if necessary.

Course Objectives: Upon completion 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.

Usefull Readings:

American Horticultural Society-Plant Propagation. 1999. Alan Toogood. Dorling Kindersley Publishers, NY.

Creative Propagation. A Grower's Guide. 1997. Peter Thompson. Timber Press, Inc., Portland, OR.

Plug and Transplant Production-A Grower's Guide. 1997. Styer, R.C. and D.S. Koranski. Ball Publishing, Batavia, IL.

The Complete Book of Plant Propagation. 1997. Arbury et al., The Taunton Press, Newtown, CT.

The Reference Manual of Woody Plant Propagation- From Seed to Tissue Culture. 1987. Dirr, M.A. and C.W. Heuser, Jr. Varsity Press, Inc., Athens, GA.

Attendance and Participation Policy:

ABSENCES 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/ugrad/current/regulations/info/attendance.aspx>.

Students are expected to participate in all assignments. Exams will be administered utilizing the quiz and exam tools available in Canvas. Participation may be a deciding factor in determining borderline grades. There will be no make up exams or assignments unless extreme circumstances are pre-approved by the instructor. Each day an assignment is late, its value will be reduced by 5%.

Assignments, quizzes and exams are scheduled well in advance of deadlines with maximum flexibility afforded the student; hence, there will be no make up exams or assignments unless extreme circumstances are preapproved by the instructor.

ASSESSMENT AND GRADING:

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

Graded Assignments and Exams will be given online using the Canvas Course Management System. All grades will be posted to Canvas: <https://lss.at.ufl.edu> Lab assignments will be scheduled and administered at the local site by the local instructor.

Sign onto this site with your Gatorlink credentials to access current grades and announcements. If at any time you experience problems with Canvas then it is your responsibility to contact the UF Computing Help Desk at: <http://helpdesk.ufl.edu> or (352) 392-4357. Please make sure to have Canvas Notifications enabled.

Two 1 hour exams	40%	(20% each- multiple choice, short answer, true/false, matching, essay)
Homework	10%	(4 Assignments- Online exercises, quizzes, paper reviews, chatroom discussions)
Final lecture exam	15%	(Comprehensive- multiple choice, short answer, true/false, matching, essay)
Independent Project	10%	(Propagation project- assigned by local site instructor)
On-site Lab	25%	(Exercises, reports, and/or exams- scheduled by the local site instructor,
Total	100%	example laboratory activities posted on the course website may differ from those assigned by the instructor at your site.

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/honorcodes/honorcode.php>.

Grading Policy:

Final grades will be based on the following scale:

94-100%	A
90-93%	A-
87-89%	B+
83-86%	B
80-82%	B-
77-79%	C+
73-76%	C
70-72%	C-
67-69%	D+
63-66%	D
60-62%	D-
≤59%	E

PLEASE NOTE

ALL EXAMS ARE CLOSED NOTE / BOOK.

Computer Requirement: Access to and on-going use of a computer are required of all students to complete their degree programs successfully. The university expects each student entering the university and continuing students to acquire computer hardware and software appropriate to the degree program. Competency in the basic use of a computer is a requirement for graduation (www.circa.ufl.edu/computers).

E-learning technical support, 352 392-4357 (select option 2) or e-mail learning-support@ufl.edu. <https://lss.at.ufl.edu/help.shtml>

Counseling Center: The University Counseling Center offers counseling services to currently enrolled students for personal, career and educational concerns (www.counsel.ufl.edu).

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.

CAMPUS HELPING RESOURCES

Health and Wellness 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.

U Matter We Care, <http://www.umatter.ufl.edu>. If you or a friend are in distress, please contact umatter@ufl.edu or 352 294-2273 so that a team member can reach out to the student.

Counseling & Wellness Center, 3190 Radio Road, 352 392-1575, <http://www.counseling.ufl.edu/cwc/default.aspx>

Counseling Services
Groups and Workshops
Outreach and Consultation
Self-Help Library
Training Programs
Community Provider Database

Academic Resources

Career Resource Center, Reitz Union, 352 392-1601. Career assistance and counseling. <http://www.crc.ufl.edu>

Library Support, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources

Teaching Center, Broward Hall, 352 392-2010 or 392-6420. General study skills and tutoring. <http://teachingcenter.ufl.edu>.

Writing Studio, 302 Tigert Hall, 352 846-1138. Help brainstorming, formatting, and writing papers. <http://writing.ufl.edu/writing-studio>.

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, <http://www.dso.ufl.edu/drc/>

STUDENT COMPLAINTS

Each online distance learning program has a process for, and will make every attempt to resolve, student complaints within its academic and administrative departments at the program level. See <http://distance.ufl.edu/student-complaints> for more details.

INFORMATION SOURCES: The tentative lecture schedule is presented below. However, this schedule is subject to change at the instructor's notice and is subject to weather and day length constraints.

NOTE: The visual aspects and memorization requirements of this course make it imperative that students view all lectures, read all handouts.

COURSE EVALUATIONS:

Students are expected to provide feedback on the quality of instruction in this course based on ten criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu>.

Plant Propagation 3223/5222 Schedule						
Module	Week	Instructor Lectures Reading Assignments	Guest Lecture	Video Assignments Self review	Optional resources	Homework Quizzes/ Exams
1	1	S. Wilson - How Plant Propagation Evolved in Human Society Chapter 1		Chapter 1 Interactive Self-review		Homework 1 Assigned E-learning (Post your Bio and take the Pre-Course assessment)
	2	M. Thetford - Biology of plant propagation Chapter 2	D. Clark - How Genes Impact Plant Propagation (30 min)	Chapter 2 Interactive Self Review		Homework 1 Due
	3	S. Wilson - The Propagation Environment Chapter 3	G. Giacomelli - Greenhouse Systems for Plant Propagation, Part 1 (59 min.); Part 2 (1 hr. 8 min)	Chapter 3 Interactive Self Review Knox Nursery, Winter Garden, FL Drs. Wilson and Giacomelli- Environmental Control		Homework 2 (Quiz) Assigned E-learning (Chapters 1-2)
2	4	S. Wilson - Seed Development Chapter 4		Chapter 4 Interactive Self Review S. Wilson- Animated life cycle of angiosperms	B. Dehgan- Pollination biology M. Tignor - Apomixis	Homework 2 Due
		S. Wilson - Principles and Practices of Seed Selection Chapter 5		Chapter 5 Interactive Self Review		
	5	S. Wilson - Techniques of Seed Production and Handling Chapter 6	K. Moore - Plug Production (30 min.)	Chapter 6 Interactive Self Review		
	6	S. Wilson - Principles of Propagation from Seeds Chapter 7		Chapter 7 Interactive Self Review	S. Wilson & Students Interactive Problem Solving recording	Homework 3 (Quiz) Assigned E-learning Chapters 3-6
	7	S. Wilson - Techniques of Propagation by Seed Chapter 8		Chapter 8 Interactive Self Review Knox Nursery, Winter Garden, FL Seedling production		Homework 3 Due Exam 1 Opens E-learning
Exam	8	Exam 1 (Chapters 3-8) Closed book and closed notes				Exam 1 Closes

All online assignments are assigned (released) at 8:00 am and due by midnight on the dates indicated. For specific dates associated with the present semester see the Semester Course Schedule posted online on the E-learning Website: <http://lss.at.ufl.edu>

Plant Propagation 3223/5222 Schedule						
Module	Week	Instructor Lectures Reading Assignments	Guest Lecture	Video Assignments Self review	Optional resources	Homework Quizzes/ Exams
3	9	M. Thetford - Principles of Propagation by Cuttings Chapter 9	J. Gibson - Stock Plant Management, Parts 1 & 2 (43 min)	Chapter 9 Interactive Self Review	F. Davies - Endogenous Growth Regulators	
		M. Thetford - Techniques of Propagation by Cuttings Chapter 10		Chapter 10 Interactive Self Review F. Davies, M. Thetford & P.J. Klinger- Lake Brantley Plant Co. R. Schoellhorn - Production scheduling and inventory control at Hatchett Creek Farms.		
4	10	M. Thetford - Principles of Grafting and Budding Chapter 11		Chapter 11 Interactive Self Review	J. Williamson - Grafting and Budding Fruit Trees	
	11	M. Thetford - Techniques of Grafting and Budding Chapters 12 & 13		Chapters 12 & 13 Interactive Self Review J. Williamson - video of budding and grafting demonstration (15 min.)		Homework 4 (Quiz) Assigned E-learning (Chapters 9-10, 11-13 Parts A & B)
Exam	12	Exam 2 (Chapters 9-13) Closed book and closed notes				Homework 4 Due Exam 2 Opens E-learning
5	13	M. Thetford - Layering and Its Natural Modifications Chapter 14		Chapter 14 Interactive Self Review		Exam 2 Closes
		M. Thetford - Propagation by Specialized Stems and Roots Chapter 15		Chapter 15 Interactive Self Review	M. Thetford & students - Recording of problem solving session	
		M. Thetford - Principles and Practices of Clonal Selection. Chapter 16		Chapter 16 Interactive Self Review	M. Scheiber - Mutations, Chimeras, and Variegation	

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Module	Week	Instructor Lectures Reading Assignments	Guest Lecture	Video Assignments Self review	Optional re-sources	Homework Quizzes/ Exams	
6	14-15	S. Wilson - Principles of Tissue Culture and Micro- propagation Techniques for Micro- propagation Chapters 17 & 18	M. Kane- Micropropagation (1.38 hr lecture) W. Vendrame - Embryogenesis (20 min. lecture)	Chapters 17-18 Interactive Self Review Agristarts video, com- mercial micro- propagation (15 min.) N. Philman Video on sterile tech- nique (8 min.)		Post Course Assessment opens E-learning	
all	16	Review for Final		Jeopardy Game		Post Course Assessment Closes Final Exam Opens E-learning	
Exam	17	Final Exam (comprehensive) 80% Chapters 14-18 and 20% Chapters 1-13 Closed book and closed notes					Final Exam Closes

All online assignments are assigned (released) at 8:00 am and due by midnight on the dates indicated. For specific dates associated with the present semester see the Semester Course Schedule posted online on the E-learning Website: <http://lss.at.ufl.edu>