

BIOL 4100/6100 – MORPHOLOGY OF LAND PLANTS SPRING SEMESTER 2012

Instructor: Dr. Carter
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Office Hours: BC 1040 (or BC 1105)
10:00 – 11:00 AM Mon, Wed, Fri
Other times by appointment



Weekly Lecture and Lab Schedule

Mon: Lec 1:00 – 1:50 PM, BC 1025
Wed: Lec 1:00 – 1:50 PM, BC 1025
Lab 3:00 – 5:50 PM, BC 2040
Fri: Lec 1:00 – 1:50 PM, BC 1025

Course description. Prerequisites: BIOL 1107 and BIOL 1108. Study of vegetative organization and reproductive cycles of bryophytes, pteridophytes and seed plants, which incorporates phylogenetic and ecological relationships. [3-3-4]

Contact hours: 150 mins lecture & 170 mins lab per week.

Credit hours: 4 sem hrs credit.

Course objectives. The student should gain an understanding of the vegetative organization, reproductive cycles, life history, and ecology of representatives of the various plant phyla, and the evolutionary origins of the plant kingdom, and the evolutionary trends, homologous variation, and phylogeny within Kingdom Plantae.

Graduate credit. Students taking the course for graduate credit (i.e., BIOL 6100), will be required to prepare and present two lectures during the regularly scheduled lecture period. Lecture topics are subject to approval of the instructor. Please be advised that this must be coordinated with your instructor well in advance.

Course materials

- Required text: *Morphology of Plants and Fungi* by Bold, H.C., T.J. Alexopoulos & C. Delevoryas, 5th Ed., Harper & Row [abbreviated BAD below]. *Instructor's copies of this text will be checked out to students upon request, on a first-come first-served basis.*
- Supplementary text: *Biology of Plants* by Raven, P.H., R.F. Evert & S.E. Eichhorn, 7th Ed., W. H. Freeman & Co. [abbreviated REE below]. *Instructor's copies of this text will be checked out to students upon request, on a first-come first-served basis.*
- Laboratory manual: *BIOL 4100/6100 Laboratory & Course Guide* will be made available free-of-charge, through BlazeVIEW.
- Additional reading assignments from the primary literature will be made during the semester and posted on the course page in BlazeVIEW.

Course Outcomes linked to Biology Department Educational Outcomes (B) and Valdosta State University General Education Outcomes (V)

1. The student will demonstrate understanding of vegetative structure, life histories, reproductive cycles, and ecological relationships of the plant phyla. [B 2, 5; V 4, 7]
2. The student will demonstrate understanding of evolutionary trends and patterns and phylogeny within the plant kingdom. [B 2; V 4, 7]
3. The student will demonstrate the ability to identify, handle, and analyze plant materials in the laboratory and in the field. [B 1; V 5, 7]
4. The student will demonstrate the ability to use basic equipment and to work effectively in the laboratory. [B 1; V 4, 5, 7]
5. The student will demonstrate comprehension of basic concepts and the ability to use scientific terminology accurately through effective oral and written communication. [B 1; V 4, 5, 7]
6. The student will demonstrate the ability to follow oral and written instructions effectively. [V 4, 7]
7. The student will demonstrate the ability to complete assignments and examinations ethically. [V 8]

Course Requirements and Policies

Use of BlazeVIEW as a course supplement.

BlazeVIEW will be used to make a variety of course resources and materials available, to administer certain assignments and assessments, and to post announcements and grades. Students should log onto BlazeVIEW daily in order to check for course announcements and to take course assessments. Also, the Mail tool in BlazeVIEW provides a convenient means for students to contact one another and their instructor and is the preferred means of communicating about matters relating to the course. To access BlazeVIEW, select the BlazeVIEW link under Quick Links on the left side of the Valdosta State University homepage. Students experiencing technical difficulties using BlazeVIEW should seek assistance through the VSU Information Technology Helpdesk located in Odum Library (telephone 229/245-4357).

Academic integrity. Students are encouraged to work together and to learn from one another in an appropriate manner. Cooperation among students is especially encouraged in certain laboratory exercises and in study outside of laboratory and lecture. However, students should bear in mind that most work ultimately must be done individually and independently. All examinations and tests are given to students individually and are to be completed independently. Cooperation by students on tests or examinations is prohibited and constitutes cheating. Unless otherwise indicated, tests and examinations are taken strictly from memory without use of textbooks, laboratory manuals, notes, etc. Unless otherwise indicated, assignments are to be completed individually and independently. Behavior contrary to these guidelines is prohibited and constitutes cheating. Plagiarism and cheating will not be tolerated and will be prosecuted to the full extent allowed by University policy and the law.

Recognition of and respect for the ownership of property is one of the distinguishing features of civilization. Ideas come from individuals and are effectively owned by their originators; thus, ideas are intellectual property. In the academic sphere, we frequently deal with the ideas of others, most often in published form. As with tangible property, intellectual property is subject to ownership and protection. Moreover, publication establishes ownership of intellectual property. It is essential that we respect the ideas and writing of others and that we scrupulously cite all sources of any and all ideas that are not our own.

Random House Webster's College Dictionary (2000) defines **plagiarism** as "the unauthorized use of the language and thoughts of another

author and the representation of them as one's own." There are many forms of plagiarism. Perhaps the most blatant form is copying from some other source without citing that source. Other types of plagiarism include using a paper written by another and the improper citation of references. When paraphrasing, the author of the paraphrased material must be properly cited, and, when words are taken directly from another source, their author must be properly cited and the quotation must be placed within quotation marks for short quotations or in a separate paragraph with special indentation for longer quoted passages. Plagiarism is theft of intellectual property, and the simplest way to avoid plagiarism is to give credit where credit is due! The following statement from the Writing Tutorial Services website at Indiana University is useful.

To avoid plagiarism, you must give credit whenever you use

- another person's idea, opinion, or theory;
- any facts, statistics, graphs, drawings – any pieces of information – that are not common knowledge;
- quotations of another person's actual spoken or written words; or
- paraphrase of another person's spoken or written words.

<http://www.indiana.edu/~wts/pamphlets/plagiarism.shtml>;

Copyright 2004; last updated 27 April 2004; last accessed 05 August 2007.

It is imperative that laboratory reports and papers be the student's own original work. Plagiarism will not be tolerated, and any student caught plagiarizing shall receive a failing grade on the report or assignment. Please be forewarned that various web search engines will be used to check for plagiarism.

Attendance, participation, and attitude. Regular attendance of all scheduled lectures and labs, and punctuality are expected. The student is responsible for all material missed regardless of the reason for absence. Normally, attendance will be taken during each scheduled lecture and laboratory period.

Each three instances of unexcused tardiness will be counted as one absence. Tardiness will not be excused without a written explanation from the student and a determination by the instructor that the reason for tardiness is valid. Requests for excused tardiness must be submitted to the instructor in writing within 24 hours of the beginning of the period during which the student was late. It is the student's responsibility to initiate such

requests. Any scheduling problems or other extenuating circumstances necessitating chronic tardiness should be explained to the instructor in writing and properly documented at the beginning of the semester.

In order to have an absence excused, the student must provide a written explanation with proper documentation immediately upon returning to class or laboratory. Based upon the written explanation and associated documentation, the instructor will determine whether the reason for absence is valid and will excuse absences accordingly.

Students are reminded that it might not be possible to make up certain laboratory exercises, and, whenever possible, the student should clear an absence and request permission for a makeup with the instructor prior to the actual absence. In accordance with Valdosta State University Absence Regulations on pp. 89-90 of the *2011-2012 Undergraduate Catalog*, students absent from more than 20% of the regularly scheduled lecture and laboratory periods are subject to failure in the course:

<http://www.valdosta.edu/catalog/1112/ugrad/index.shtml>

Moreover, the final course grade may be lowered because of poor attendance, participation, or attitude.

Conduct in lecture and laboratory. Students are expected to comport themselves courteously at all times during lecture and laboratory. Disruptive behavior will not be tolerated, and students behaving in a disruptive manner will be removed from the classroom and referred to the Dean of Students for disciplinary action. Refer to the Student Code of Conduct in the *VSU Student Handbook Volume IV*:

<http://www.valdosta.edu/studentaffairs/StudentHandbook.shtml>

Students should be punctual for scheduled lecture and laboratory meetings. Except in special situations (i.e., emergency), students should not depart from lecture before being dismissed. If a student departs from lecture early, re-entry into the lecture room during the same period will not be permitted. Students anticipating early departure from lecture should inform their instructor of this prior to the beginning lecture and seat themselves near an exit. Students are to direct their full attention to lecture and laboratory and are to refrain from unwarranted discourse. Behavior contrary to these guidelines is disruptive and may result in lowering of the final grade.

Valid identification. It is the student's responsibility to have her/his VSU identification card in his/her possession at all times during class and laboratory periods, especially during scheduled

examinations. Normally, each student will be asked to present her/his valid VSU photo-identification card in order to take an examination.

Consumption of food and drink. The distraction factor aside, food and drink in laboratory pose certain health and safety risks to students and in lecture present problems for maintenance of the building. Therefore, the consumption of food or drink (including water) is absolutely prohibited during lecture and laboratory. Bear in mind that food items or drink containers on desks, tables, benches, etc. in lecture rooms and laboratories create the appearance that these items are being consumed and will be treated accordingly by your instructor.

Use of cellular telephones, pagers, and other such devices. Use of cellular telephones, pagers, or any similar remote communication device is not permitted during scheduled lectures, labs, or examinations. If students bring cellular telephones or similar devices to lecture, it is their responsibility to switch them off prior to the beginning of the lecture or laboratory period. Ringing, buzzing, or any other sounds emitted from such devices will be treated as disruptive behavior on the part of the owner/possessor, and the owner/possessor will be asked to leave lecture or lab immediately.

General suggestions. Regular attendance of scheduled lecture and laboratory periods and daily preparation and review are essential for success. Students should prepare for each lecture and laboratory session by reading the assigned sections from the textbook and laboratory manual and any additional supplementary material made available by the instructor. Students should bring their textbook to each scheduled lecture and laboratory period, since illustrations and diagrams from the text will be used regularly during lecture and lab. Notes should be taken regularly during lecture and lab and should be used along with the text and lab manual in studying for examinations.

General comments on laboratory. Success in the laboratory is largely dependent upon student interest, curiosity, and assumption of responsibility for independent learning. Material presented during lecture should be studied along with laboratory material in order to integrate the two learning experiences. Laboratory work emphasizes careful observations and the opportunity to repeat and confirm the work of others. It also provides for some experimentation and gathering of data. To gain the most from the laboratory experiences, students should be regular and punctual in attendance, especially to receive directions and instructions given by the instructor at the beginning of each laboratory period. Students also benefit by using the textbook frequently during laboratory sessions, by keeping descriptive notes

on observations, by recording data accurately and systematically, and by making diagrams and drawings.

Field trips. Two all-day Saturday field trips will be scheduled. *Attendance on these field trips is optional, but strongly encouraged.* In addition to enabling students to observe representatives of the major plant groups in the field, these field trips will provide the opportunity for students to earn *extra points*. Following are recommendations for field trips.

- Wear old clothes, including long pants, and sturdy shoes or boots.
- Use insect repellent (with DEET).
- Immediately upon returning from fieldtrips, students are urged to check their bodies thoroughly for ectoparasites (i.e. ticks) and, if possible, to shower.
- Bring bottled water, especially for all-day trips.
- Bring food, especially for all-day trips.

Examinations. Three major examinations will be given. Approximately half of each exam will be based on lecture material, and half on laboratory material. Dates for exams are provided in the course schedule.

Course notebook. The *BIOL 4100/6100 Laboratory & Course Guide* will comprise the nucleus of the course notebook. Each student will be required to submit a course notebook, including all assigned diagrams and drawings, the results from any other laboratory assignments, and completed short answers and essays in the *Guide*. The course notebook should be maintained in a large three-ring binder, and is due at the beginning of the Final Examination period.

Course project. Each student will be required to complete a research project and to submit a written report on the results of her/his research. The report may be in the format of a poster or a research paper. A *brief proposal* for the research project is due at the beginning of the lecture period Monday, 23 January 2012. Projects are subject to the approval of the instructor and should be discussed well in advance of the proposal due date. If applicable, students are responsible for obtaining permission to access properties where their research will be conducted, for providing their own transportation to and from field sites, and for their own safety and well-being while engaged in field research.

Grading. If a student thinks an error has been made in grading an examination, quiz, or any other assignment, s/he should communicate about this directly with the instructor *within one week* of the instructor's returning of the graded examination, quiz or assignment. In determining the final course grade, a 10-point scale is normally used (i.e., 90–100=A; 80–89=B; 70–79=C; 60–69=D; <60=F), and the final course average is calculated as follows.

<i>Examinations</i>	80%
<i>Course notebook</i>	10%
<i>Course project</i>	<u>10%</u>
<i>Total</i>	100%

Meeting the minimum point requirement for a letter grade does not necessarily assure that the student will receive that grade. Assignment of the final grade is the prerogative of the instructor and will be based upon each individual student's overall performance, including patterns of consistency, trends toward improvement, and positive attitude as shown through attendance, participation, and cooperation.

Access to laboratory. Students will be granted access to the General Botany Laboratory (BC 2040) after hours until 11:00 PM on weekdays and until 9:00 PM during weekends. Frequently, the outer door near the northeast corner of the Bailey Science Center is unlocked after hours; check this door first. If the outside doors are locked, then students should contact the University Police Department or a university police officer and present a valid student identification card upon request in order to gain entry into the building. A numerical code will be provided by your instructor, which will enable access to the General Botany Laboratory. Access to the laboratory after hours is a privilege; it is not a right. If problems occur with regard to safety, security, neatness, or general order in the lab, then this privilege will be revoked. It is up to each student to see that materials, slides, microscopes, etc. are properly cared for and replaced for proper storage.

Students with disabilities. Students requiring class-room accommodations or modifications because of documented disabilities should discuss this need with their professor at the beginning of the semester. Disabled students who are not registered with the Access Office for Students with Disabilities should contact the Access Office, Farber Hall, telephone (229) 245-2498 (V/VP) and (229) 219-1348 (TTY).

Tentative Course Schedule with Assigned Readings

Week of Jan. 09	Introduction; The Divisions of Plant Science, BAD Chapt. 1; Superkingdom Eukaryonta and Kingdom Phyta (Plantae), BAD Chapt. 3; Phylum Hepatophyta, BAD Chapt. 11; Bryophytes, REE Chapt. 16 Laboratory – Introduction and Phylum Hepatophyta
Week of Jan. 16	Mon., Jan. 16, Martin Luther King Holiday Phylum Anthocerotophyta, BAD Chapt. 11 cont.; Bryophytes, REE Chapt. 16 Laboratory – Phylum Anthocerotophyta
Week of Jan. 23	Phylum Bryophyta, BAD Chapt. 12; REE Bryophytes; Chapt. 16 Introduction to Vascular Plants, BAD Chapt. 13, REE Seedless Vascular Plants; Chapt. 17 Laboratory – Phylum Bryophyta
Week of Jan. 30	Phylum Microphyllrophyta, BAD Chapt. 14; Phylum Arthrophyta, BAD Chapt. 15; Seedless Vascular Plants, REE Chapt. 17 Laboratory – Phylum Microphyllrophyta (=Lycophyta)
Week of Feb. 06	Phylum Pteridophyta I, BAD Chapt. 16; Seedless Vascular Plants, REE Chapt. 17 Exam I – Wed., 08 Feb.
Week of Feb. 13	Phylum Pteridophyta II, BAD Chapt. 17; Seedless Vascular Plants, REE Chapt. 17 Laboratory – Phylum Microphyllrophyta (=Lycophyta)
Week of Feb. 20	Phylum Pteridophyta III, BAD Chapt. 18; Phylum Psilotophyta, BAD Chapt. 19; Seedless Vascular Plants, REE Chapt. 17 Laboratory – Phylum Arthrophyta (=Sphenophyta)
Week of Feb. 27	Vascular Cryptogams Recapitulation and Fossil Record, BAD Chapt. 20; REE Seedless Vascular Plants, Chapt. 17 Laboratory – Phylum Psilotophyta (=Psilophyta) <i>Midterm date – Thurs., 01 Mar.; last day to withdraw from course.</i> Field Trip – Sat., 03 Mar., 8AM-5PM, Wolf Creek Trout Lily Preserve, Grady Co., GA
Week of Mar. 05	Introduction to Seed Plants; Phylum Cycadophyta, BAD Chapt. 21; Phylum Ginkgophyta, BAD Chapt. 22; REE Gymnosperms, Chapt. 18 Laboratory – Phylum Pteridophyta
Week of Mar. 12	<i>Spring Break</i>
Week of Mar. 19	Phylum Coniferophyta, BAD Chapt. 23; REE Gymnosperms, Chapt. 18 Exam II – Wed., 21 Mar.
Week of Mar. 26	Phylum Gnetophyta, BAD Chapt. 24; REE Gymnosperms, Chapt. 18 Laboratory – Phylum Cycadophyta & Phylum Ginkgophyta
Week of Apr. 02	Gymnosperms: Recapitulation and Fossil Record, BAD Chapt. 25; REE Gymnosperms, Chapt. 18 Laboratory – Phylum Coniferophyta & Phylum Gnetophyta
Week of Apr. 09	Phylum Anthophyta I, BAD Chapt. 26; REE Angiosperms I, Chapt. 19 Laboratory – Phylum Anthophyta Field Trip – Sat., 14 Apr., 8AM-8PM, Camden County, GA
Week of Apr. 16	Phylum Anthophyta II, BAD Chapt. 27; REE Angiosperms II, Chapt. 20 Laboratory – Phylum Anthophyta
Week of Apr. 23	Phylum Anthophyta II (cont.) Laboratory – Phylum Anthophyta
Week of Apr. 30	Mon., 30 Apr., Last class day Tues., 01 May, Exam Preparation Day Final Examination – Fri., 04 May, 2:45 – 4:45 PM