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TA for Sect. 1 and Lab Honcho  
Office: 4023 KIN  
Hours: M 12-1pm & M 2-3pm

**Syllabus, Spring 2010**  
**BOT 3015L Plant Biology Lab**  
Location: KIN 2069  
**Dr. Outlaw (Instructor)**  
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David McNutt  
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TA for Sect 2 & 3  
Office: 4004 KIN  
Hours: W&F 11am-12pm

**Required:** BOT 3015L Plant Biology Laboratory Manual (by Sherdan, Aghoram, and Outlaw), and *Biology of Plants*, 7th edition (by Raven, Evert, and Eichhorn). Both are available at the FSU bookstore.

**\*\*Both textbook and lab manual are required at each lab session. \*\***

| <u>Chapter in lab manual</u> | <u>Date</u> | <u>Topic</u>  | <u>Readings in Raven <i>et al.</i></u>   | <u>Handouts and Reminders</u>   | <u>Assignments Due</u>  |
|------------------------------|-------------|---|--|---|---|
| 1                            | Jan 6       | Orientation to lab: TA instruction on scientific observation; lab grading policies; research and presentation of crop domestication by students | Chapter 21   | - Syllabus, class policy, student fact sheet  | none  |
| 2                            | Jan 13      | Angiosperm reproduction: structure and function of floral parts; generalized life cycles; mechanisms of pollination                             | Figs. 19.1-19.4, 19.6-19.9, 19.14-19.16, 19.22, 20.9; Table 19.1; pp434-438, 442-444, 446, 458-463.    | None  | none  |
| 3                            | Jan 20      | Angiosperm reproduction (cont'd.): gametophytes, embryos, seeds, and fruits   | Figs. 12.15c, 19.14, 19.16, 19.18a,b, 19.19-21, 20.21-24, 22.3, 22.7-8, 22.13; pp236, 442, 446-470     | none  | none  |
| 4                            | Jan 27      | Principles of experimentation and data collection; design and begin independent experiment to investigate seed germination                      |  | -Guide to reading the scientific literature, hypothesis and experimentation supplement                      | <b>Assignment 1 due (in-class assignment):</b> Searching the primary literature                       |
| 5                            | Feb 3       | Regulation of plant growth by plant hormones; design and start gibberellic acid (GA) experiment; tour of greenhouse; <b>Quiz 1</b>              | Chapter 27; Figs. 27.1; Table 27.1; pp605-615  | - Greenhouse rules  | TAs return assignment 1 to students   |
| 6                            | Feb 10      | Introduction to autotrophs and osmotrophs: unique aspects of plant-cell structure and division  | Chapter 3; Figs. 4.1, 4.5, 8.7, 12.15, 25.42, 25.43; pp74-77, 141-143, 148, 576-577; p161              | <b>Reminder:</b> Bring seedlings from Lab 4 (seed germination experiment) to next week's lab                | <b>Assignment 2 due:</b> Reading and proper citation of the primary literature                        |
| 7                            | Feb 17      | Anatomy: primary growth; regulation of plant-water relations (guard cells and endodermal cells)   | Figs. 22.10-22.12, 23.1-2, 23.24, 23.27, 24.2, 24.4-5, pp506-507, 510, 513-525, 530, 540-541; p526-527 | none  | TAs return assignment 2 to students   |
| 8                            | Feb 24      | Data analysis and interpretation; basic statistics; using Microsoft Excel; <b>Quiz 2</b>  | See Chapter 8 in lab manual on data analysis and interpretation  | Modified Chapter 8 handout, Scientific paper for discussion and critique is available on Bb                 | <b>none</b>   |
| 9                            | Mar 3       | Water-use efficiency of terrestrial plants; In-class experiment; scientific writing; complete GA experiments                                    | Chapter 6; pp 559-566, See Chapter 1 in lab manual on how to write a lab report                        | Lab report checklist<br><b>Reminder:</b> Bring mushroom specimen and bread to next lab (after spring break) | <b>Assignment 3 due:</b> Class discussion of paper and critical reading of the primary literature due |

| <u>Chapter in lab manual</u> | <u>Date</u> | <u>Topic</u>  | <u>Readings in Raven et al.</u>  | <u>Handouts and Reminders</u> | <u>Assignments Due</u>   |
|------------------------------|-------------|---|--|-------------------------------|--|
|                              | Mar 10      | No lab (Spring break)   |  |                               | -Students pick up graded assignment 3 during TA's office hours           |
| 10                           | Mar 17      | Autotrophic and osmotrophic protists  | Figs. 15.5, 15.15, 15.20, 15.23-24, 15.27- 15.30, 15.41, 15.42, 15.52, 15.53, 15.56, 15.58; pp 300, 302, 309-312, 340-343. | none                          | - <b>Lab report due:</b> Water-use efficiency experiment                 |
| 11                           | Mar 24      | Complex osmotrophic eukaryotes (fungi); <b>Quiz 3</b>   | Figs. 14.1, 14.3c, 14.11-12, 14.14-16, 14.18-19, 14.29-31, pp260-265, 268-269, 272-274, 278-282, 285-291; Table 14.1.      | Lab report checklist          | TAs return 1st lab report to students                                    |
| 12                           | Mar 31      | Symbioses involving plants  | Figs. 14.39-14.43, 29.1, 29.9-29.11.   | Oral presentations handout    | <b>Lab report due:</b> Independent experiment                            |
| 13                           | April 7     | Biology of non-flowering plants (Part 1): Bryophytes, seedless vascular plants                            | Chapters 16 and 17; pp 346, 350, 351.  | Lab report checklist          | TAs return 2nd lab report to students                                    |
| 14                           | April 14    | Biology of non-flowering plants (Part 2): Gymnosperms   | Chapter 18; Figs. 18.12, 18.15-18.17, 18.33, 18.35   |                               | <b>Lab report due:</b> Gibberellic acid experiment                       |
| 15                           | April 21    | Student oral presentations on individual experiments or crop investigations<br><b>Quiz 4 (Cumulative)</b> |  |                               | - <b>Oral presentation due</b><br>-TAs return 3rd lab report to students |

| <b>Weighting of grades in BOT 3015L:</b>                |     |
|---|-----|
| 4 quizzes   | 40% |
| Independent experiment report (+ Homework assignment 1) | 10% |
| Water-use efficiency report (+Homework assignment 3)    | 10% |
| Gibberellic acid report (+Homework assignment 2)        | 15% |
| Student Oral Presentations                              | 5%  |
| Lab notebook (randomly graded)                          | 20% |

**Grading Scale:** Grades will be assigned on an absolute scale: (see also current class policy)

A ≥ 93 > A- ≥ 90 > B+ ≥ 87 > B ≥ 83 > B- ≥ 80 > C+ ≥ 77 > C ≥ 73 > C- ≥ 70 > D+ ≥ 67 > D ≥ 63 > D- ≥ 60 > F

**NOTE: All students are required to have adequate accident insurance before registering for this course.**

This document and other documents required for this course are available upon request in a suitable alternative format for individuals with print-related disabilities. Please see "Current Class Policy" for an ADA statement, or see Dr. Outlaw or Tania Kim.