

**PLB 400 - PLANT ANATOMY**  
**SPRING SEMESTER 2015**  
**GENERAL INFORMATION**

**SCHEDULE:** Lecture: TR 9:00-9:50 am, Room 430 Life Science II  
Lab: R, F 10:00-11:50, Room 423, Life Science II

**INSTRUCTOR:** Dr. Karen Renzaglia

**OFFICE:** Room 459C, Life Science II   **Phone:** 536-2331

**EMAIL:** [renzaglia@siu.edu](mailto:renzaglia@siu.edu) (put **Plant Anatomy** in subject line)

**OFFICE HOURS:** MW 3:00-4:00 or by appointment

**GRADUATE ASSISTANT:** Jason Henry, [henryj@siu.edu](mailto:henryj@siu.edu)

**OFFICE HOURS:** M 12:00-1:00 and Th. 1:00-2:00

**DESCRIPTION:** Introduction to the structure, growth and development of the shoot, root and reproductive systems of plants, with emphasis on vascular plants.

**TEXT:** *Esau's Plant Anatomy, 3<sup>rd</sup> Edition*, Ray F. Evert. 2006. A. John Wiley and Sons, Inc. Publication.

**GRADING:** The grade scale for the course (lecture and lab combined) will be:  
A = 90+%, B = 80 - 89%, C = 70 - 79%, D = 60 - 69%, F = less than 60%

**EXAMS:** There will be three "mid-term" exams. These exams will be worth 100 points each and will cover only the portion of the material since the last exam.

**FINAL:** A comprehensive final worth 100 points will be given during finals week. Date TBA

**TEAM PROJECT:** This will be an exploratory project that will be conducted by pairs of students and will result in a presentation. Details of what this project entails are provided on a separate sheet.

**ATTENDANCE:** It is your choice to attend classes. Be aware of the fact that some of the material presented will not be in any chapter of the book. Also note that there is a high correlation in this course between final grade and number of classes attended. Stated another way, those who attend class generally perform at a higher level. Unannounced extra point quizzes will be given if attendance appears to suffer due to mid-semester apathy.

**COURSE EVALUATION WILL BE BASED ON THE FOLLOWING:**

|                                   |                   |
|-----------------------------------|-------------------|
| 3 Exams (100 points each)         | 300 points        |
| (Half written and half practical) |                   |
| Lecture Final                     | 100 points        |
| Laboratory Notebooks              | 100 points        |
| Team Project                      | <u>100 points</u> |
| <b>Total points:</b>              | <b>600 points</b> |

**PLB 400 - PLANT ANATOMY  
 SPRING SEMESTER 2016  
 COURSE OUTLINE**

| <b>DATE</b>                     | <b>TOPIC</b>   | <b>CHAPTER</b> |
|---------------------------------|--|----------------|
| Jan. 19                         | <b>Introduction</b><br>LAB 1: Primary plant body   | 1              |
| Jan. 21                         | <b>General structure and development of seed plants</b><br>LAB 2: Cell structure and content                                       | 2              |
| Jan. 26                         | <b>Plant cell- protoplasmic system and “ergastic” substances</b><br>LAB 2: Cell structure and content                              | 3<br>4         |
| Jan. 28                         | <b>Cell wall (primary - development, structure and composition)</b><br>LAB 3: Cells with primary walls: Parenchyma and collenchyma | 7              |
| Feb. 2                          | <b>Cell wall (secondary - development, structure and composition)</b><br>LAB 4: Sclerenchyma Sclerenchyma                          | 8              |
| Feb. 4                          | <b>Examination of Plant Cell Structure at<br/>Microimaging and Analysis Center</b>   | handout        |
| Feb. 9                          | <b>Meristems</b><br>LAB 5: Shoot and root meristems  | 5<br>6         |
| Feb. 11                         | <i>EXAM I - 50 pts. Written and 50 pts. Practical</i>  |                |
| Feb. 16                         | <b>Stelar and nodal anatomy</b><br>LAB 6: Stelar types   | 10             |
| Feb. 18                         | <b>Xylem</b><br>LAB 7: Xylem   |                |
| Feb. 23                         | <b>Phloem</b><br>LAB 8: Phloem   | 13             |
| Feb. 25                         | <b>Epidermis and trichomes</b><br>LAB 9: Epidermis and trichomes   | 9, 16          |
| March 1                         | <b>Secretory structures and laticifers</b><br>LAB 10: Secretory structures and laticifers  | 17             |
| March 3                         | <b>Primary growth</b><br>LAB 11: Leaves  | pages 145-150  |
| March 8                         | <b>Leaf: general structure &amp; specialized leaves</b><br>LAB 12: Leaves, continued   | notes          |
| March 10:                       | <i>EXAM II - 50 pts. Written, 50 pts. Practical</i>  |                |
| <b>March 15, 17 SPING BREAK</b> |  |                |

|           |   |              |
|-----------|---|--------------|
| March 22: | <b>Field trip to coal mine</b>  |              |
| March 24  | <b>Roots</b><br>LAB 13: Roots   | notes        |
| March 29  | <b>Secondary growth</b><br>LAB 14: Secondary growth: Vascular cambium and its derivatives | 12           |
| March 31  | <b>Secondary xylem</b><br>LAB 15: Wood anatomy  | 11           |
| April 5   | <b>Wood Anatomy</b><br>More Wood anatomy  |              |
| April 7   | <b>Secondary phloem and Periderm</b><br>LAB 16: Secondary phloem and periderm             | 14, 15       |
| April 12  | <b>Field trip</b>   |              |
| April 14  | <b>Spores and gametophytes</b><br>LAB 17: Spores and gametophytes                         | notes        |
| April 19  | <b>Embryo sac and pollen development</b><br>LAB 18: The angiosperm life cycle             | notes        |
| April 21  | <b><i>EXAM III - 50 pts. Written, 50 pts. Practical</i></b>                               |              |
| April 26  | <b>Floral anatomy</b><br>LAB 19: Flowers  | <b>notes</b> |
| April 28  | Embryos, seeds and fruits<br>LAB 20: Embryos, seeds and fruits                            | notes        |
| May 5     | Preparation for presentation  |              |
| May 7     | Project presentation  |              |

**May 12: FINAL EXAM - Comprehensive**  
**LAB NOTEBOOKS ARE DUE**