An overview of the basic mechanisms underlying plant function, growth and development. General topic areas will include: plant structure and cell biology, plant water relations, mineral nutrition, mineral nutrient uptake and assimilation, long-distance transport phenomena, photosynthesis, respiration and plant metabolism, plant growth regulators, and plant stress physiology.

**Course Meeting:** 9:30 am to 10:50 pm Tues. / Thurs.  
2020A Natural History Building

**Instructor:** Dr. Donald P. Briskin  
Department of Crop Sciences  
1035 Plant Science Laboratory  
**Telephone:** (217) 244-1115  
**email:** dbriskin@uiuc.edu

**Office Hours:** By appointment


**Course Website:** The course webpage is located on the University of Illinois Compass 2g site. To access the course webpage, go to the following web address:

http://compass2g.illinois.edu

and then log into the Compass 2g section using your University of Illinois net ID and password. Our course website contains PDF files for the course syllabus and lecture outlines. The lecture outlines should be downloaded, printed, and brought to class.

**Grading:**  
5 Quizes @ 40 pts./quiz = 200 pts.  
1 Comprehensive Final Examination = 100 pts.  
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**TOTAL:** 300 pts.

**Quizzes:** Quizzes will be given at regular intervals throughout the semester and taken online via the Compass 2g website. Each quiz will cover the material from 2 topics and
will contain 20 questions. The dates that each quiz becomes available and must be completed by are shown below. To take a quiz, click on the appropriate quiz icon located in the “Quizzes” folder on the course webpage. Quizzes will be timed for 30 minutes and once a quiz is started it must be completed in a single online session. At the end of the 30 minute time period the quiz will be closed, and no further work will be allowed. Although 6 quizzes will be given, only 5 will be counted towards the final grade. The lowest quiz score will be dropped.

<table>
<thead>
<tr>
<th>Quiz Number</th>
<th>Date Available</th>
<th>Date To Be Completed</th>
<th>Topics Covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jan. 24</td>
<td>Jan. 31</td>
<td>1 &amp; 2</td>
</tr>
<tr>
<td>2</td>
<td>Feb. 7</td>
<td>Feb. 14</td>
<td>3 &amp; 4</td>
</tr>
<tr>
<td>3</td>
<td>Feb. 26</td>
<td>Mar. 5</td>
<td>5 &amp; 6</td>
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<tr>
<td>4</td>
<td>Mar. 12</td>
<td>Mar. 19</td>
<td>7 &amp; 8</td>
</tr>
<tr>
<td>5</td>
<td>Apr. 2</td>
<td>Apr. 9</td>
<td>9 &amp; 10</td>
</tr>
<tr>
<td>6</td>
<td>Apr. 16</td>
<td>April 23</td>
<td>11 &amp; 12</td>
</tr>
</tbody>
</table>

**Final Examination:** The final examination will be cumulative and will cover all topics discussed during the semester. The final examination will also be completed online via the Compass 2g website and is located in the “Final Examination” folder. The final examination will contain 50 questions and 75 minutes will be allowed for completion of the exam. As with the quizzes, the final examination must be completed in a single online session. The final examination will become available on April 23rd and must be completed by May 1st.

**COURSE SCHEDULE**

All listed readings are in the course text *Fundamentals of Plant Physiology*.

**Topic 1 - Plant Structure and Cell Biology**
**Readings:** Chapter 1 pp. 6 - 20, pp. 25-37

**Topic 2 - Properties of Water and Plant Water Relations**
**Readings:** Chapter 2
Chapter 3 pp. 65-82

**Quiz#1 (available Jan. 24 and completed by Jan. 31)**

**Topic 3 - Plant Mineral Nutrition**
**Readings:** Chapter 4 pp. 91-113

**Readings:** Chapter 4 pp. 113-118,
Chapter 5 pp. 141-143
Chapter 6
Quiz# 2 (available Feb. 7 and completed by Feb. 14)

Topic 5 - Photosynthesis and Light Reactions
Readings: Chapter 7

Topic 6 - Photosynthetic Carbon Metabolism and Starch Metabolism
Readings: Chapter 8 pp. 213 - 222, pp. 238 - 239

Quiz# 3 (available Feb. 26 and completed by Mar. 5)

Topic 7 - Photorespiration, C3 vs. C4 vs. CAM
Readings: Chapter 8 pp. 222 - 238

Topic 8 - Photosynthate Use and Transport, Glycolysis, Mitochondrial Processes (TCA Cycle and ATP Synthesis), Oxidative Pentose Phosphate Pathway
Readings: Chapter 10 pp. 269-298
Chapter 11 pp. 303-329

Quiz# 4 (available Mar. 12 and completed by Mar. 19)

Topic 9 - Nitrogen Metabolism and Biological Nitrogen Fixation
Readings: Chapter 5 pp. 121-140

Topic 10 - Introduction to Plant Hormones and Growth Regulators
Readings: Chapter 12 pp. 341-347, p. 354
Chapter 14 pp. 401-404
Chapter 15 pp. 432-434, p. 436

Quiz# 5 (available Apr. 2 and completed by Apr. 9)

Topic 11 - Plant Hormones and Growth Regulators
Readings: Chapter 12 pp. 349-356, p. 358
Chapter 15 pp. 423-424, pp. 436-442
Chapter 16 p. 455
Chapter 17 pp. 502-503

Topic 12 - Photomorphogenesis, Photoperiodism, Rhythmic Phenomena
Readings: Chapter 13
Chapter 17 pp. 471-487

Quiz# 6 (available Apr. 16 and completed by April 23)

Topic 13 - Plant Stress Physiology and Secondary Metabolism
Readings: Chapter 19
Campus Policies

**Academic Integrity**: The University of Illinois at Urbana-Champaign Student Code should also be considered as a part of this syllabus. Students should pay particular attention to Article 1, Part 4: Academic Integrity. Read the Code at the following URL: http://studentcode.illinois.edu/.

Academic dishonesty may result in a failing grade. Every student is expected to review and abide by the Academic Integrity Policy: http://studentcode.illinois.edu/. Ignorance is not an excuse for any academic dishonesty. It is your responsibility to read this policy to avoid any misunderstanding. Do not hesitate to ask the instructor(s) if you are ever in doubt about what constitutes plagiarism, cheating, or any other breach of academic integrity.

**Students with Disabilities**: To obtain disability-related academic adjustments and/or auxiliary aids, students with disabilities must contact the course instructor as soon as possible. To insure that disability-related concerns are properly addressed from the beginning, students with disabilities who require assistance to participate in this class should contact Disability Resources and Educational Services (DRES) and see the instructor as soon as possible. If you need accommodations for any sort of disability, please speak to me after class, or make an appointment to see me, or see me during my office hours. DRES provides students with academic accommodations, access, and support services. To contact DRES you may visit 1207 S. Oak St., Champaign, call 333-4603 (V/TDD), or e-mail a message to disability@uiuc.edu. http://www.disability.illinois.edu/.

**Emergency Response Recommendations**: Emergency response recommendations can be found at the following website: http://police.illinois.edu/emergency/. I encourage you to review this website and the campus building floor plans website within the first 10 days of class. http://police.illinois.edu/emergency/floorplans/.

**Family Educational Rights and Privacy Act (FERPA)**: Any student who has suppressed their directory information pursuant to Family Educational Rights and Privacy Act (FERPA) should self-identify to the instructor to ensure protection of the privacy of their attendance in this course. See http://registrar.illinois.edu/ferpa for more information on FERPA.