

BMB/PLB 864 Plant Biochemistry Fall 2016

1:00-2:20 Tuesdays and Thursdays 1030 Molecular Plant Sciences

Lecturers:

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| Dean DellaPenna (course coordinator) | dellapen@msu.edu | 432-9284 |
| Tom Sharkey (guest lecturer) | sharkey@msu.edu | 353-3257 |
| David Kramer (guest lecturer) | kramerd8@msu.edu | 432-0072 |
| John Ohlrogge (guest lecturer) | ohlrogge@msu.edu | 353-0611 |
| Curt Wilkerson (guest lecturer) | wilker13@msu.edu | 353-5554 |

This course is designed for graduate students in biochemistry, plant biology, crop sciences and others interested in obtaining an in depth treatment of the biochemistry of plants. Most of the topics cover biochemistry unique to plants and it is expected that students already have a solid grounding in general biochemistry, molecular biology and plant physiology at the upper undergraduate level.

Format: The course will consist of lectures from the main instructor (DellaPenna) plus guest lectures from selected topical experts on campus as indicated on the lecture schedule. Students will be expected to give two 25-minute presentations on primary research papers assigned by lecturers that are of relevance to the topics being covered in the course. Students will also review the presentations of fellow students (**due by 1PM the following day**) and provide 2 questions/points of discussion for each paper assigned for lectures. Your questions should be submitted the instructor for that lecture by email **no later than 9AM the day of lecture**.

Grading: There will be three 80-minute short answer/essay exams, each counting 22.5% toward your grade for a total of 67.5%. Your own presentation and reviewing of other student's presentations (forms provided) will count for 22.5% of your grade. Class participation will count for the remaining 10%. Class participation includes a) engaging with comments and questions during lectures and presentations and b) questions provided by email for assigned papers for each lecture. It is possible to receive a zero for part or all of participation.

Text: No text is assigned. Many reviews and primary literature manuscripts will be assigned throughout the semester and these will be available online through Angel. For general topics students are likely to find a general biochemistry textbook useful, for example "Principles of Biochemistry" by D.L. Nelson and M. M. Cox, W.H. Freeman and Company. In addition, there are several books specific to plant biochemistry that you may want to consult for background on specific topics. None are perfect but some of our favorites are:

1. **Buchanan BB, Gruissem W, Jones RL** (2015) *Biochemistry & Molecular Biology of Plants*. American Society of Plant Physiologists, Rockville. Second addition.
2. **Heldt H-W** (2011) *Plant Biochemistry*. Fourth Edition. Elsevier Academic Press, Burlington MA.
Available as e-resource at MSU library
<http://www.sciencedirect.com.proxy1.cl.msu.edu/science/book/9780123849861>
3. **The Arabidopsis Book (under topical content)**
<http://theArabidopsisBook.org/topical/cell-biology-and-organelle-biology/>