

Botany 380L Plant Physiology Lab

Fall Semester, 2006

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Class Meetings: 3:00 to 5:50 PM, Mondays
Stevens 210

Corequisite: Botany 380

Course Objectives: Plant Physiology Lab is a course intended to provide experience in the methods used to explore problems in plant physiology. The goal is for students to develop laboratory skills, experience the process of real laboratory research, and acquire additional familiarity with plant physiology concepts beyond that provided by Botany 380.

Format: The course will utilize a problem-based approach in which student teams will conduct genuine research and participate in scientific discovery. After initial training in isolation and analyses of the activity of a specific enzyme, students will explore the response of the enzyme as plants are exposed to different conditions. Each group will determine the scientific question that they wish to address, design the appropriate experiment(s) and prepare a project proposal. Groups will have roughly two-thirds of the semester to conduct their research and each individual will be expected to document their research in a lab notebook. There will be no set schedule for conducting experiments. More importance will be placed on sound experimental design and acquisition of sound repeatable data than on the volume of data collected. Ultimately, each group will prepare a written report that describes and interprets their findings.

Grading: Course grades will rely on notebooks and written materials. Notebooks will be kept by each individual and assessment will depend on thoroughness (the ability to duplicate an experiment from what was written) and on demonstration of understanding. Notebooks will be collected and graded periodically during the semester. Project proposals and final reports will be group products, with each group member receiving the same grade. Grades on these written products will be based on both the quality of the reports (clarity, organization, grammar, etc.) as well as on the quality of the research (strategy adopted, thoroughness, soundness of data, etc.). Credit will also be awarded for participation. Full participation yields full credit while unexcused absences or insufficient contributions to your group will result in deductions.

Individual Laboratory Notebooks - 200 points	Participation - 50 points
Group Project Proposal - 50 points	
Group Final Project Report - 100 points	Total - 400 pts

Letter grades will be assigned according to the percentage of points earned with respect to the total possible points. 90-100% = A, 80-89.9% = B, 70-79.9% = C, 60-69.9% = D, 0-59.9% = F. Late written works will be deducted 20% for each day beyond the due date.

Safety: Use caution when working with glassware, reagents, power supplies, etc. I will try to point out safety hazards, but you must take responsibility for your own safety as well. Use gloves and safety glasses when working with reagents (I will provide). Report any spills or broken glassware. No open-toed shoes allowed. Lab coats won't be required but you may bring your own if you like.

Special Needs: Any students who need special accommodations for learning or who have special needs are invited to share these concerns and requests with the instructor as soon as possible.

Academic Responsibility: All work in this course must be completed in a manner consistent with NDSU University Senate Policy, section 335: Code of Academic Responsibility and Conduct (<http://www.ndsu.nodak.edu/policy/335.htm>).