

Plant Form and Function: An Introduction to Plant Biology Research			Instructor: Deborah A. Johnson
Date	Lecture Topic and/or Lab Activity	Reading	Assignment
24-Aug	Course overview/Review Activity: How do plants live and reproduce?	Ch. 1: Plant Cells (pp. 1-26)	
26-Aug	Keeping a lab notebook/Using environmental sensors	Smith et al., 1997	Lab notebook/Questions re: Smith
31-Aug	Intro to field site/Environmental and descriptive data collection		Lab notebook
2-Sep	Whole-plant and leaf morphology/Specific leaf area; Intro to ImageJ/Excel		Lab notebook
7-Sep	Light, leaves and PS II /Leaf mass; Discuss Smith, et al.	Ch. 7 pp. 111-122; Ch. 9 pp. 171-177	Questions re: Smith due
9-Sep	Field site: Gas exchange measurements and chlorophyll fluorescence		Lab notebook
14-Sep	Data analysis using Excel/Leaf sample preparation		Lab notebook
16-Sep	Review-synthesis/Photosynthesis; lab notebook work	Ch. 7 pp. 123-138; Ch. 9 pp. 177-183	Lab notebook
21-Sep	Light response curves, photoinhibition/Fluorescence measurements		Lab notebook
23-Sep	Light and electron microscopy (Bill Siebold)/ Quiz		Lab notebooks due
28-Sep	Review quizzes, notebooks/Sample preparation for SEM/microtome	Handouts	Lab notebook
30-Sep	ImageJ and Image Analysis/Sample prep for microscopes		Lab notebook
5-Oct	How to use microtome/Scheduled microtome/microscope use; open lab	Mott & Buckley, Brownlee	Questions re: Mott, Brownlee papers
7-Oct	Stomata, trichomes & boundary layers/Microtome/microscope; open lab		Lab notebook
12-Oct	Ground tissues/Scheduled microtome/microscope use; open lab		Lab notebook
14-Oct	Discussion of readings/Scheduled microtome/microscope use; open lab		Questions re: Mott, Brownlee due
19-Oct	Image processing and analysis; open lab		Lab notebook
21-Oct	Vascular tissues/Image processing and analysis; open lab		Lab notebook
26-Oct	Image processing and analysis; open lab	Ch. 5: Molecular Syst. (pp.105-118)	Lab notebook
28-Oct	Quiz/Lab: Plant DNA isolation		Lab notebooks due
2-Nov	The plant genome & sequence analysis/Computer lab: GenBank		Lab notebook
4-Nov	Computer lab: ClustalW, gene trees	Thomas and Klaper, 2004	Lab notebook; Questions re: Thomas
9-Nov	Lab: Gel electrophoresis//Sequencing and MRCF tour		Lab notebook
11-Nov	PCR, DNA sequencing/Analysis of GE		Lab notebook
16-Nov	Comparative genomics/Summary of content for presentations		Lab notebook
18-Nov	Discussion of reading/Genomics and ecophysiology (Mike Thomas)		Questions re: Thomas due
23-25 Nov	No Classes--Thanksgiving Holiday		
30-Nov	Poster and Presentation Design/Guest speaker: Jill Johnston		
2-Dec	Quiz/Evaluation criteria for posters and presentations, prep time		Lab notebooks due
7-Dec	Review Quizzes, notebooks/Poster and presentation prep		
9-Dec	Poster and presentation prep		
14 Dec	FINAL EXAM: Oral and poster presentations, evaluations		Oral and Poster Presentations due