

Genetic Engineering Laboratory
Crop Sciences 265, (CPSC 265) Fall 2014
Thursdays 1:00-4:50 PM, 606 IGB

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Week 1.	Aug 28	Overview, Safety, Notebooks. Micropipettes and Buffers.
Week 2.	Sept 4	The Central Dogma. Genomic DNA extraction
Week 3.	Sep 11	Exam 1 on DNA extraction. Extraction of RNA.
Week 4.	Sep 18	Exam 2 on RNA extraction. RNA electrophoresis, photograph and blot Discuss DNA gel blots
Week 5.	Sep 25	Detection of probe hybridization. B. Discuss probe production methods
Week 6.	Oct 2	Exam 3 on gel blots. PCR amplification of a DNA fragment from genomic soybean DNA. Separation of PCR products by gel electrophoresis
Week 7.	Oct 9	Exam 4 on PCR. Ligate PCR product into a plasmid vector. Transform ligation products into E. coli.
Week 8.	Oct 16	Exam 5 on ligation and transformation. PCR amplify the plasmid insert from bacterial colonies. Use agarose gel electrophoresis to determine DNA size
Week 9.	Oct 23	Discuss DNA sequencing. Computer analysis of DNA sequences
Week 10.	Oct 30	Exam 6 on sequence analysis. Genomics
Week 11.	Nov 6	Exam 7 on Genomics. Expression of a recombinant soybean protein in E. coli. Analyze proteins using SDS-PAGE. Stain proteins in a SDS-PAGE gel
Week 12.	Nov 13	Exam 8 on protein analysis. Discuss the results of protein expression in E. coli Purify the protein using affinity chromatography. Run a protein gel
Week 13.	Nov 20	Exam 9 on protein purification Electroblood proteins onto nitrocellulose (Demonstration) Immunodetection of proteins (Western blot)
	Nov 27	Thanksgiving break
Week 14.	Dec 4	Exam 10 on protein blots. Proteomics. Hand in lab notebooks.
Week 15	Dec 11	Deadline to return lab notebooks (finals week; no exam).