

BIOTECHNOLOGY- SCIENCE, IMPACT, PERCEPTION

PLSC3230 Fall 2012

- Instructor:** Dr. Huanzhong Wang
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- Secretary:** Mr. Stephen Miner, Room 320, ABL building, Tel. 486-3435
- Text: optional**
- 1) Biotechnology: An Introduction by Susan R. Barnum
Wadsworth Publishing Co. ISBN -534-23436-4
 - 2) Biotechnology from A to Z by William Bains
Oxford University Press. ISBN 0199636931
 - 3) Molecular Biotechnology: Principles and Applications
of Recombinant DNA by B. R. Glick and J. J. Pasternak
ASM, 2nd edition ISBN: 1555811361
- Lecture:** Tuesday and Thursday, 3:30 - 4:45 PM
Rh101
- Office Hours:** by appointment
- Grading:**
- | | | |
|------------------|------------|-----------|
| Regular students | Two Exams | 30 % each |
| | Final Exam | 40 % |
| Honor students / | Two Exams | 30 % each |
| | Final Exam | 40 % |

(note: stricter standards apply to grading of exams for Honors and Graduate Students)

Course Objectives:

The overall goal of this course is to prepare the students of all backgrounds to understand the basic scientific principles, methodologies, and applications used in modern biotechnology. This course will also encourage discussions related to the impact and public perception of biotechnology and consider ethical and otherwise controversial issues related to biotechnology.

SCHEDULE:

Date	Instructor	Lecture Focus
INTRODUCTION		
8/28	Wang	Course overview
8/30	Wang	What is biotechnology? ancient, classical, modern biotechnology
9/04	Wang	Biotechnology timeline
9/06	Wang	Prokaryotes vs. Eukaryotes-Cell Biology
9/11	Wang	Gene Expression
9/13	Wang	Basic Molecular Methodologies / Macromolecules
MICROBIAL BIOTECH		
9/18	Wang	Microbial Biotechnology
9/20	Wang	Microbial Biotechnology
9/25	Wang Distribute	Microbial Biotechnology TAKE-HOME Exam # 1
PLANT BIOTECH --- BIOFUELS AND FOODS		
9/27	Wang	Plant Biotechnology
10/02	Wang	Plant Biotechnology
10/4	Lucero (Agrivida)	Plant Biotechnology and Application
10/9	Field Trip (Agrivida)	Agrivida LAB and Green House
ANIMAL BIOTECH AND STEM CELLS		
10/11	Govoni	Animal Biotechnology
10/16	Thomas Chen	Transgenic Fish
10/18	Rasmussen	Stem Cell Research
10/23	Chun	Functional Foods
GENOMICS/DIAGNOSTICS, COMPUTATIONAL BIOLOGY AND BIOINFORMATICS,		
10/25	Anamani	Human Genome/Molecular Diagnostics
10/30	Strausbaugh	Forensic DNA

11/1	Field trip	Visit Forensic LAB Facility
11/6	Yi Ma	Bioinformatics
11/8	Ranjan Srivastava distribute	Metabolic Modeling/Termite Gut Project TAKE-HOME Exam # 2

REGULATORY MATTERS, GMO CONCERNS, ETHICS

11/13	Silbart	Governmental regulation
11/15	Yi Li	Transgenic Plant Issues

PATENTS, ETHICS, CAREERS

11/20	NO LECTURE	THANKSGIVING BREAK
11/22	NO LECTURE	THANKSGIVING BREAK
11/27	Berkowitz	Public Perception and Concerns
11/29	Greg Gallo	Patent issues in Biotechnology
12/4	Wang	Careers in Biotechnology
12/6	Wang	Course Review
12/11		FINAL EXAM