

| Date | Classroom Topics | Readings and Assignments | Lab Activities |
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| Sep 5 | Friday Overview of learning objectives, assignments, syllabus | | |
| Sep 9 | Tuesday Why we care: Cancer | Listen: http://onpoint.wbur.org/2013/08/01/redefining-cancer http://www.nature.com/lindau/2014/index.html?WT_mc_id=EMI_NATURE_1409_LINDAU4 | Lab orientation: liquid handling, reagent preparation, etc. |
| Sep 12 | Friday Atoms, elements, molecules, bonding, water | Lab Manual Intro +Appendix Units 4, 5, 6 Small Molecules: Structure and Behavior HW questions | |
| Sep 16 | Tuesday Proteins, Carbohydrates, Lipids and nucleic acids | Units 8, 9, 10, 12 HW questions, Lab protocol | Lab orientation: liquid handling, reagent preparation, etc. |
| Sep 19 | Friday Prokaryotic and eukaryotic cells Media discussion JCP | Units 13, 14 The Organization of Cells HW questions | |
| Sep 23 | Tuesday Cell Biology: The plasma membrane | Units 17, 18, 19 Cellular Membranes HW questions, Lab protocol | Transformation Instructors move plates from 37°C to 4°C |
| Sep 26 | Friday Energy and Enzymes Media discussion, Team1 | Units 11, 22, 23 Energy, Enzymes and Metabolism HW questions Also: plasmids section | |
| Sep 30 | Tuesday Photosynthesis Jean Huang, guest lecturer | Units 28, 29, 30, 31 Photosynthesis HW questions, Lab protocol | SAC begins bacterial cultures |
| Oct 3 | Friday Metabolic pathways Media discussion, Team2 | Units 24, 25, 26, 27 Cellular Pathways that Harvest Chemical Energy HW questions | DNA plasmid prep |

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| Oct 7 | Tuesday Chromosomes, The cell cycle | Chromosomes, the Cell Cycle and Cell Division Units 32, 33, 34, 35 (skip plant section), 36 Also read: restriction enzymes (Pg 286) PCR (pg 290) HW questions, Lab Protocol | DNA quantitation PCR |
| Oct 10 | Friday Mendelian genetics, Chromosomes and inheritance Genetics problem sets Media discussion, Team3 | Units 37, 38, 39, 40, 41, 42 Genetics: Mendel and Beyond HW questions | |
| Oct 14 | Tuesday DNA structure and its role in heredity, DNA replication | Units 44, 45, 47 DNA and its Role in Heredity The Secret of Photo 51 The basics of gel electrophoresis (p. 294) Lab protocol, HW questions | Restriction Digest Analysis of DNA: agarose gel electrophoresis |
| Oct 17 | Friday DNA Transcription & repair, Translation, the Genetic Code, Posttranslational events Media discussion, Team4 | Units 48, 49, 50 Genotype to Phenotype HW questions Midterm posted over weekend | |
| Oct 21 | Tuesday | No class: Midterm due at 3 pm. | No lab-group meetings with Joanne and Sadie |
| Oct 24 | Friday Gene expression Media discussion, Team5 | Units 51, 52, 53 Regulation of Gene Expression HW questions | |
| Oct 28 | Tuesday Recombinant DNA technologies | Units 57, 58, 60 Recombinant DNA and Biotechnology HW questions, Lab protocol | Transfect cells Stimulate and Harvest Th/Fri (Sadie) |
| Oct 31 | Friday Cell Signaling and Cancer Media discussion, Team6 | Units 20, 21, 55 Cell Signaling, Cancer HW questions | Lab Reports Due Sunday at 11:59 pm |
| Nov 4 | Tuesday Immune responses to bacteria | Units 165, 166, 167, 168 Natural Defenses against Disease HW questions, Lab protocol | Lyse cells and analyze in luciferase assays |
| Nov 7 | Friday Immune responses to Viruses Media discussion, Team7 | Write your own HW questions | |

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| Nov 11 | Tuesday Genomes | Units 61, 62 Genomes HW questions, Lab protocol | Run mini-gels Transfer, put into blocking solution |
| Nov 14 | Friday Molecular biology and medicine-Bioinformatics | Units 43, 46 Gene Mutations and molecular medicine In class Bioinformatics HW questions | |
| Nov 18 | Tuesday Drug discovery and Clinical Trials Media discussion, Team8 | http://www.ted.com/talks/francis_collins_we_need_better_drugs_now http://www.nature.com/naturejobs/science/articles/10.1038/nj7483-443a?WT.ec_id=NATUREjobs- | Continue immunoblots Student-designed transfections |
| Nov 21 | Friday Lab-luciferase readings | | |

Thanksgiving Break



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| Dec 2 | Tuesday Global Health, part I | Student research and presentations on Global Health | Luciferase assays |
| Dec 5 | Friday Issues in Global Health, part II | Student research and presentations on Global Health | Lab reports and Lab notebooks DUE |
| Dec 9 | Tuesday Assessment and Feedback Poster session | | Lab period=Poster presentations |