

## Available Webcasts

### Spring 2004 Webcasts

(<http://webcast.berkeley.edu/courses.php?semesterid=5>)

### Heritage Futures in a Digital Age

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978214](http://webcast.berkeley.edu/course_details.php?seriesid=1906978214))

### Introduction to Human Nutrition

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978212](http://webcast.berkeley.edu/course_details.php?seriesid=1906978212))

### Aging, Health, and Diversity

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978217](http://webcast.berkeley.edu/course_details.php?seriesid=1906978217))

### Public Health Issue

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978218](http://webcast.berkeley.edu/course_details.php?seriesid=1906978218))

### Fall 2004 Webcasts

(<http://webcast.berkeley.edu/courses.php?semesterid=4>)

### General Human Anatomy

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978163](http://webcast.berkeley.edu/course_details.php?seriesid=1906978163))

- Organization of Body
- Skeletal System
- Skeletal/Muscular System
- Muscular System
- Hematology
- Hematology/Cardiology
- Cardiology
- Blood Vascular System
- Lymphatic System
- Respiratory System
- Neurohistology
- Neurohistology/Development of Nervous System
- Development of Nervous System

- Spinal Cord & Nerves
- Peripheral Nerves
- Sensory & Motor Pathways
- Motor Pathways & Forebrain
- Forebrain
- Eye
- Ear
- Digestive System
- Digestive/Urinary System
- Urinary System
- Endocrine System
- Endocrine System/Female Reproductive System
- Female Reproductive System
- Male Reproductive System
- Integumentary System

## Introduction to Human Nutrition

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978171](http://webcast.berkeley.edu/course_details.php?seriesid=1906978171))

- Food Choices, Nutrition Research, and Nutrient Needs
- Nutrient Needs; Digestion
- Digestion
- Carbohydrates
- Carbohydrates; Diabetes
- Lipids
- Lipids; Heart Disease
- Protein
- Protein; Protein Energy Malnutrition
- Energy Metabolism
- Energy Balance and Body Composition
- Obesity and Weight Management
- Size Acceptance
- Water Soluble Vitamins
- Vitamin A
- Vitamins D, E, & K
- Water and Electrolytes
- Calcium and Osteoporosis
- Iron and Anemia
- Trace Minerals
- Alcohol
- Nutrition and Athletic Performance
- Food Toxicology
- Diet and Cancer

- Food Safety

## General Biology

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978140](http://webcast.berkeley.edu/course_details.php?seriesid=1906978140))

- Life and the Stuff of Life
- Macromolecules Structure and Function: Proteins and Lipids
- Macromolecules Structure and Function: Carbohydrates and Nucleic Acids
- Cell Structure and Organization I
- Cell Structure and Organization II
- Biological Membrane Structure and Organization
- How Cells Function: An Introduction to Cellular Metabolism and Biological Catalysts
- Enzyme Structure and Function I
- Enzyme Structure and Function II
- Cellular Energy and Work
- Cellular Combustion and the Production of Energy I: Anaerobic Processes
- Cellular Combustion and the Production of Energy II: Aerobic Processes
- Photosynthesis: From Light to ATP
- Photosynthesis: From CO<sub>2</sub> to Sugars
- How Somatic Cells (Mitosis) and Gametes (Meiosis) Inherit Genomes
- The Laws that Govern the Inheritance of Traits: Segregation of Alleles
- How Genes Organized on Chromosomes: Linkage, Recombination, Mapping
- Genes are Made of DNA
- Gene Expression I: DNA is Transcribed into RNA
- Gene Expression II: RNA is Translated into Protein
- Microbes: Viruses, Bacteria, Plasmids, Transposons
- Regulation of Gene Expression in Prokaryotes
- Gene Structure & Regulation in Eukaryotes I
- Gene Structure & Regulation in Eukaryotes II
- How to Isolate, Study, and Use Genes
- Genetic Regulation of Development
- Multicellularity: Eukaryotic Diversity
- Multicellularity: Tissue Specialization
- Homeostasis: Digestion & Nutrition
- Homeostasis: Circulation
- Homeostasis: Respiration
- Homeostasis: Osmoregulation
- Homeostasis: The Body's Defenses
- Homeostasis: The Immune System

- Integration: Hormones
- Integration: Sex & Reproduction
- Integration: Nerve Cells & Excitability
- Integration: Muscle Cells & Motility
- Integration: The Nervous System
- Integration: Sensing the Environment

## Spring 2005 Webcasts

(<http://webcast.berkeley.edu/courses.php?semesterid=1>)

## General Biology

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978130](http://webcast.berkeley.edu/course_details.php?seriesid=1906978130))

- Bioenergetics, Water, Atoms, Acids-Base Chemistry
- Biopolymers: Amino Acids, Forces Stabilizing Proteins, Protein Structure
- Protein Structure Continued
- Enzymes 1
- Enzymes 2
- Biopolymers: Carbohydrates and Lipids
- Membranes, Membrane Proteins, Signaling
- Overview of Metabolism, Glycolysis
- TCA Cycle and Oxidative Phosphorylation
- Photosynthesis/ Light & Dark Reactions
- Biopolymers: Nucleic Acids
- Genes to Proteins (overview, details in Part II)
- Techniques in Molecular Biology
- Cell Cycle, Mitosis and the Reproduction of Cells
- Regulation of the Cell Cycle/Cancer
- Meiosis and Sexual Life Cycle
- Mendelian Genetics
- Genetic Mapping
- Genes and DNA
- Human Genetics
- Transcription
- Translation
- Prokaryotes & Gene Regulation
- Eukaryotes & Gene Regulation
- Microbial Organisms
- Computational Biology
- Genomics
- Stem Cells and Aging

- Multicellularity: Cell Shape and function, Tissue Specialization, Homeostasis
- Intercellular & Physiological Communication: Hormones, Receptors, & the Endocrine System-Part 1
- Intercellular & Physiological Communication: Hormones, Receptors, & the Endocrine System-Part 2
- Reproductive System - Part 1
- Reproductive System - Part 2
- Fertilization and Embryogenesis
- Developmental Strategies and Mechanisms
- Digestive System
- Circulatory & Respiratory Systems
- Immune System
- Excretory System and Kidney Function
- Nervous System
- Cell and Tissue Dysfunction, Cancer and Experimental Strategies to Develop Anti-Cancer Therapeutics
- Bio-engineered Animals and Models of Human Disease

## Introduction to Human Nutrition

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978170](http://webcast.berkeley.edu/course_details.php?seriesid=1906978170))

## Fall 2005 Webcasts

(<http://webcast.berkeley.edu/courses.php?semesterid=10>)

## General Biology

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978227](http://webcast.berkeley.edu/course_details.php?seriesid=1906978227))

- Life and the Stuff of Life
- Macromolecules Structure and Function: Proteins and Lipids
- Macromolecules Structure and Function: Carbohydrates and Nucleic Acids
- Cell Structure and Organization I
- Cell Structure and Organization II
- Biological Membrane Structure and Organization
- How Cells Function: An Introduction to Cellular Metabolism and Biological Catalysts
- Enzyme Structure and Function I
- Enzyme Structure and Function II
- Cellular Energy and Work

- Cellular Combustion and the Production of Energy I: Anaerobic Processes
- Cellular Combustion and the Production of Energy II: Aerobic Processes
- Photosynthesis: From Light to ATP
- Photosynthesis: From CO<sub>2</sub> to Sugars
- How Somatic Cells (Mitosis) and Gametes (Meiosis) Inherit Genomes
- The Laws that Govern the Inheritance of Traits: Segregation of Alleles
- How Genes Organized on Chromosomes: Linkage, Recombination, Mapping
- Genes are Made of DNA
- Gene Expression I: DNA is Transcribed into RNA
- Gene Expression II: RNA is Translated into Protein
- Microbes: Viruses, Bacteria, Plasmids, Transposons
- Regulation of Gene Expression in Prokaryotes
- Gene Structure & Regulation in Eukaryotes I
- Gene Structure & Regulation in Eukaryotes II
- How to Isolate, Study, and Use Genes
- Genetic Regulation of Development
- Multicellularity: Eukaryotic Diversity
- Multicellularity: Tissue Specialization
- Homeostasis: Digestion & Nutrition
- Homeostasis: Circulation
- Homeostasis: Respiration
- Homeostasis: Osmoregulation
- Homeostasis: The Body's Defenses
- Homeostasis: The Immune System
- Integration: Hormones
- Integration: Sex & Reproduction
- Integration: Nerve Cells & Excitability
- Integration: Muscle Cells & Motility
- Integration: The Nervous System
- Integration: Sensing the Environment

## General Biology Lab Lecture

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978228](http://webcast.berkeley.edu/course_details.php?seriesid=1906978228))

- Safety, equipment and ligation
- Transformation and cells
- Enzymes
- Photosynthesis
- Genetics and Molecular Biology I
- Genetics and Molecular Biology II
- Invertebrates I

- Invertebrates II
- Rat Anatomy
- Reproduction and Development
- Chordate Diversity

## General Human Anatomy

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978238](http://webcast.berkeley.edu/course_details.php?seriesid=1906978238))

- Organization of Body
- Skeletal System
- Skeletal/Muscular System
- Muscular System
- Hematology
- Hematology/Cardiology
- Cardiology
- Blood Vascular System
- Lymphatic System
- Respiratory System
- Neurohistology
- Neurohistology/Development of Nervous System
- Development of Nervous System
- Spinal Cord & Nerves
- Peripheral Nerves
- Sensory & Motor Pathways
- Motor Pathways & Forebrain
- Forebrain
- Eye
- Ear
- Digestive System
- Digestive/Urinary System
- Urinary System
- Endocrine System
- Endocrine System/Female Reproductive System
- Female Reproductive System
- Male Reproductive System
- Integumentary System

## Introduction to Human Nutrition

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978239](http://webcast.berkeley.edu/course_details.php?seriesid=1906978239))

- Course Introduction: Food Choices, Nutrition Research, and Nutrient Needs
- Nutrient Needs; Digestion
- Digestion, Absorption and Transport of Nutrients
- Carbohydrates
- Diabetes and Lipids
- Dietary Fat
- Protein
- Energy Balance
- Alcohol
- Energy Balance and Body Composition
- Nutrition, Weight and Diabetes
- Size Acceptance
- Water Soluble Vitamins
- Fat Soluble Vitamins
- Water
- Calcium
- Iron
- Trace Minerals
- Nutrition and Athletics
- Protein Energy Malnutrition
- Food Toxicology
- Diet and Cancer
- Food Safety and Food Borne Illnesses

## SynthBio Synthetic Biology Seminar

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978261](http://webcast.berkeley.edu/course_details.php?seriesid=1906978261))

- Noisy Feedback Regulation in Gene Networks
- May We Make the World?: Ethical Issues in Synthetic Biology
- Engineering Synthetic Multicellular Systems
- Programming Dynamic Function into Bacteria
- Programmable Molecular Sensors and Switches: Applications in Metabolic Engineering, Intelligent Therapeutics, and Biosensors
- The Roles of Transport and Mechanics in Mechanotransduction
- Synthetic Life: A Progress Report

## Spring 2006 Webcasts

(<http://webcast.berkeley.edu/courses.php?semesterid=18>)



## General Biology

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978265](http://webcast.berkeley.edu/course_details.php?seriesid=1906978265))

- Life: An Overview; Basic Chemistry, redox, PH
- Biopolymers: Carbohydrates, Lipids, Nucleic Acids
- Protein Structure
- Biological Membranes
- Bacterial Cells; Animals Cells and Organelles
- Cells and Organelles (con't)
- Energy, Thermodynamics and Enzymes 1
- Enzymes 2
- Metabolism I: ATP, Redox and Glycolysis
- Metabolism II: TCA Cycle; Oxid, Phos.
- Photosynthesis: Light and Dark Reactions
- Signaling
- Genes to Proteins: An Overview
- Techniques in Molecular Biology
- Presidents Day
- Midterm I
- Microbial Genetics and Evolution - Chromosomes, Plasmids, and Phage
- DNA Replication and the PCR
- Cell Cycle, Mitosis and Reproduction of Cells
- Chromosomes, Checkpoints, and Cancer
- Meiosis and Sexual Life Cycle
- Gregor Mendel and Two of Biology's Three Laws
- Recombination, Linkage and Mapping
- Transcription
- The Genetic Code and Translation
- Prokaryotic Gene Regulation
- Eukaryotic Gene Expression and Regulation
- Human Genetics and Epigenetics
- GMOs and Organismal Cloning
- Stem Cells and Aging
- Multicellularity: Cell Shape and Function, Tissue Specialization, Homeostasis
- Intercellular and Physiological Communication: Hormones, Receptors, and the Endocrine System-Part 1
- Intercellular and Physiological Communication: Hormones, Receptors, and the Endocrine System-Part II
- Reproductive System - Part I
- Reproductive System - Part II
- Fertilization and Embryogenesis
- Developmental Strategies and Mechanisms
- Digestive System

- Circulatory and Respiratory Systems
- Immune System
- Excretory System and Kidney Function
- Nervous System
- Cell and Tissue Dysfunction, Cancer and Experimental Strategies to Develop Anti-Cancer Therapeutics
- Bio-Engineered Animals and Models of Human Disease

## General Biology Lab

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978267](http://webcast.berkeley.edu/course_details.php?seriesid=1906978267))

- Safety, Equipment and Ligation
- Transformation and Cells
- Enzymes
- Photosynthesis (Fall 05 Lecture)
- Genetics and Molecular Biology I
- Genetics and Molecular Biology II
- Invertebrates I
- Invertebrates II
- Rat Anatomy
- Reproduction and Development
- Chordate Diversity

## Soft X-rays and Extreme Ultraviolet Radiation

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978243](http://webcast.berkeley.edu/course_details.php?seriesid=1906978243))

- Interaction Physics
- Radiation by an Accelerated Charge: Scattering by Free and Bound Electrons
- Multi-Electron Atom, Atomic Scattering Factors: Wave Propagation and Refractive Index
- Refraction and Reflection, Total Internal Reflection, Brewster's Angle, K-K
- Multilayer Interference Coatings, Scattering, Reflectivity
- Multilayer Mirrors, Coating Process, Applications
- Intro Synchrotron Radiation, Bending Magnet Radiation
- Undulator Radiation, Undulator Equation, Central Radiation Cone
- Undulator Radiated Power, Electron Beam Parameters
- Spectral Brightness of Undulator Radiation, Harmonics, Wiggler Radiation
- Physics of Plasmas, Basic Parameters, Fluid and Kinetic Descriptions

- Line and Continuum Radiation, Waves in a Plasma
- Waves in a Plasma
- Black-Body Radiation; Plasma Sources
- Laser-Produced and Discharge Plasmas: Compact Plasma Sources
- High Harmonic Generation, Basic Processes, Quasi-Phasematching
- EUV and Soft X-Ray Lasers, Basic Lasing Process
- Ne- Like and Ni- Like Lasers, Refractive Effects, Compact EUV Lasers
- Cross-Sections, Spectral Bandwidth, Gain, Wavelength Scaling
- Spatial and Temporal Coherence, Spatial and Spectral Filtering
- Coherent Undulator Radiation
- Van Cittert-Zernike; Coherence Experiments
- Zone Plate Formulas
- Diffraction by Zone Plates and Pinholes, Resolution
- DOF, Zone Plate Diffraction, Coherence Issues
- Applications of Zone Plate Microscopy
- EUV Lithography

## General Human Anatomy

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978238](http://webcast.berkeley.edu/course_details.php?seriesid=1906978238))

- Organization of the Body
- Skeletal System-1
- Skeletal/Muscular System
- Hematology
- Hematology/Cardiology
- Cardiology
- Blood Vascular System
- Lymphatic System
- Respiratory System
- Neurohistology
- Neurohistology/Development of Nervous System
- Development of Nervous System
- Spinal Cord and Nerves
- Peripheral Nerves
- Sensory and Motor Pathways
- Motor Pathways and Forebrain
- Forebrain
- Eye
- Digestive System
- Digestive/Urinary System
- Urinary System
- Endocrine System
- Endocrine System/Female Reproductive System

- Female Reproductive System
- Male Reproductive System
- Integumentary System

## Introduction to Human Nutrition

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978239](http://webcast.berkeley.edu/course_details.php?seriesid=1906978239))

- Course Introduction: Food Choices, Nutrition Research, and Nutrient Needs
- Nutrient Needs; Digestion
- Digestion, Absorption and Transport of Nutrients
- Carbohydrates
- Diabetes and Lipids
- Dietary Fat
- Protein
- Energy Balance
- Alcohol
- Energy Balance and Body Composition
- Nutrition, Weight and Diabetes
- Size Acceptance
- Water Soluble Vitamins
- Fat Soluble Vitamins
- Fat Soluble Vitamins (con't)
- Water
- Calcium
- Iron
- Trace Minerals
- Nutrition and Athletics
- Protein Energy Malnutrition
- Food Toxicology
- Diet and Cancer
- Food Safety and Food Borne Illnesses

## Fall 2006 Webcasts

(<http://webcast.berkeley.edu/courses.php?semesterid=21>)

## General Biology

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978335](http://webcast.berkeley.edu/course_details.php?seriesid=1906978335))

- Life and the Stuff of Life

- Macromolecules Structure and Function: Proteins and Lipids
- Macromolecules Structure and Function: Carbohydrates and Nucleic Acids
- Cell Structure and Organization -1
- Cell Structure and Organization -2
- Biological Membrane Structure and Organization
- How Cells Function- an Introduction to Cellular Metabolism and Biological Catalysts
- Enzyme Structure and Function -1
- Enzyme Structure and Function -2
- Cellular Energy and Work
- Cellular Combustion and the Production of Energy- 1- Anaerobic Processes
- Cellular Combustion and the Production of Energy- 2- Aerobic Processes
- Photosynthesis- from Light to ATP
- Photosynthesis- from CO<sub>2</sub> to Sugars
- How Somatic Cells (Mitosis) and Gametes (Meiosis) Inherit Genomes
- The Laws that Govern the Inheritance of Traits - Segregation of Alleles
- How Genes are Organized on Chromosomes ? Linkage, Recombination, Mapping
- Genes Are Made Of DNA
- Gene Expression I - DNA is Transcribed into RNA
- Gene Expression II ? RNA is Translated into Protein
- Microbes ? Viruses, Bacteria, Plasmids, Transposons
- Regulation of Gene Expression in Prokaryotes
- Gene Structure and Regulation in Eukaryotes 1
- Gene Structure and Regulation in Eukaryotes 2
- How To Isolate, Study and Use Genes 1
- How To Isolate, Study and Use Genes 2
- Genetic Regulation of Development
- Animal Diversity and Tissue Specialization
- Homeostasis: Digestion and Nutrition
- Homeostasis: Circulation
- Homeostasis: Respiration
- Homeostasis: The Body's Defenses
- Homeostasis: The Immune System
- Homeostasis: Osmoregulation
- Integration: Hormones
- Integration: Sex and Reproduction
- Integration: Nerve Cells and Excitability
- Integration: Muscle Cells and Motility
- Integration: The Nervous System
- Integration: Sensing the Environment

## Survey of the Principles of Biochemistry and Molecular Biology

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978349](http://webcast.berkeley.edu/course_details.php?seriesid=1906978349))

- Detecting and Analyzing Proteins
- Protein Purification, Assessing Protein Purity
- Proteins Sequences, Sequence Determination, Modifications
- Levels of Protein Structure, Forces Molding Conformation
- Structure-Function Relationships: Globins
- Structure-Function Relationships: Antibodies
- Enzymes, Enzyme Specificity
- Enzyme Catalysis, Kinetic Analysis of Enzyme Activity
- Mechanisms of Enzyme Action
- Enzyme Regulation, Allosteric Control
- Lipids, Structure and Function of Biomembranes
- Monosaccharides and Polysaccharides

## General Human Anatomy

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978375](http://webcast.berkeley.edu/course_details.php?seriesid=1906978375))

- Organization of the Body
- Skeletal System 1
- Skeletal System 2
- Skeletal System 3
- Skeletal System 4
- Skeletal System 5
- Skeletal System 6
- Skeletal 7 and Muscular System 1
- Muscular System 2
- Muscular System 3
- Muscular System 4
- Hematology 1
- Hematology 2
- Hematology 3 and Cardiology 1
- Cardiology 2
- Blood Vascular System 1
- Blood Vascular System 2
- Lymphatic System
- Respiratory System 1
- Respiratory System 2
- Neurohistology 1
- Neurohistology 2 and Development of Nervous System 1
- Development of Nervous System 2

- Spinal Cord and Nerves
- Peripheral Nerves
- Sensory and Motor Pathways 1
- Motor Pathways 2 and Forebrain 1
- Forebrain 2
- Eye
- Digestive System 1
- Digestive System 2
- Digestive System 3 and Urinary System 1
- Urinary System 2
- Endocrine System 1
- Endocrine System 2 and Female Reproductive System 1
- Female Reproductive System 2
- Male Reproductive System
- Integumentary System

## General Biochemistry and Molecular Biology

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978371](http://webcast.berkeley.edu/course_details.php?seriesid=1906978371))

- DNA Structure
- Variation in DNA Structure and Recognition
- Principles of RNA Structure
- DNA Polymerases
- The DNA Replication Fork
- Other Replication Factors
- Replication Origins and Ends
- DNA Analysis Methods
- Chromatin Structure and Dynamics
- Genome Structure
- Genomics and Bioinformatics
- DNA Damage and Repair
- DNA Damage and Repair in Cancer
- Human Disease Genes
- Prokaryotic Transcription Apparatus I
- Prokaryotic Transcription Apparatus II
- Control of Prokaryotic Transcription I
- Control of Prokaryotic Transcription II
- Eukaryotic Transcription Apparatus and Methods to Analyze Transcription I
- Eukaryotic Transcription Apparatus and Methods to Analyze Transcription II
- Eukaryotic Transcription Apparatus and Methods to Analyze Transcription III

- Control of Eukaryotic Transcription I
- Control of Eukaryotic Transcription II
- Control of Eukaryotic Transcription III
- RNA Processing I
- RNA Processing II
- Control of Translation I
- Control of Translation II
- Membrane Structure I
- Membrane Structure II
- Membrane Structure III and Transport of Small Molecules I
- Transport of Small Molecules II
- Assembly of Proteins in Membranes I
- Assembly of Proteins in Membranes II
- Transport Into and Out of Nucleus I
- Transport Into and Out of Nucleus II and Intracellular Transport of Proteins I
- Intracellular Transport of Proteins II
- Intracellular Transport of Proteins III
- Hormones and Signal Transduction I
- Hormones and Signal Transduction II
- Hormones and Signal Transduction III and Cell Division Cycle I
- Cell Division Cycle II

## Introduction to Human Nutrition

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978374](http://webcast.berkeley.edu/course_details.php?seriesid=1906978374))

- Nutrient Needs
- Digestion
- Carbohydrates 1
- Carbohydrates 2
- Lipids 1
- Lipids 2
- Protein
- Energy Metabolism
- Energy Balance (Film - Lecture is 18 minutes)
- Obesity
- Water Soluble Vitamins
- Vitamins D, E, K
- Water Soluble Vitamins
- Health at Every Size
- Trace Minerals
- Iron
- Water



- Alcohol
- Sports Nutrition
- Pregnancy
- Malnutrition
- Diet and Health
- Food Safety

## Drugs and Behaviour

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978365](http://webcast.berkeley.edu/course_details.php?seriesid=1906978365))

## Spring 2007 Webcasts

(<http://webcast.berkeley.edu/courses.php?semesterid=22>)

## General Biology Lecture

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978417](http://webcast.berkeley.edu/course_details.php?seriesid=1906978417))

- Introduction - The Cell Theory, Bacteria, Animal Cells, Evolution (Viruses and Mitochondria)
- The Central Dogma - DNA, RNA Information Flow - (DNA, mRNA, tRNA)
- Lipids and Biological Membranes, Carbohydrates
- Amino Acids and Protein Structure
- Biological Membranes and Transport
- Cells and Organelles
- Cytoskeleton, Cell Adhesion
- Energy, Thermodynamics and Enzymes
- Enzymes (con't)
- Metabolism I- Glycolysis
- Metabolism II- TCA Cycle, Oxid. Phos.
- Photosynthesis- Light and Dark Reactions
- Signaling Biochemistry
- Techniques in Molecular Biology
- Microbial Genetics and Evolution
- DNA Replication and the PCR
- Cell Cycle, Mitosis and Reproduction of Cells
- Chromosomes, Checkpoints and Cancer
- Meiosis and Sexual Life Cycle
- Gregor Mendel and 2 of Biology's 3 Laws
- Recombination, Linkage and Mapping
- Transcription
- The Genetic Code and Translation

- Prokaryotic Gene Regulation
- Eukaryotic Gene Expression and Regulation
- Human Genetics and Epigenetics
- GMOs and Organismal Cloning
- Stem Cells and Aging
- Multicellularity- Cell Shape and Function, Tissue Specialization, Homeostasis
- Intercellular and Physiological Communication- Part I
- Intercellular and Physiological Communication- Part II
- Reproductive System- Part I
- Reproductive System- Part II
- Fertilization and Embryogenesis
- Developmental Strategies and Mechanisms
- Digestive System
- Circulatory and Respiratory Systems
- Immune System
- Excretory System and Kidney Function
- Nervous System
- Cell and Tissue Dysfunction, Cancer and Experimental Strategies to Develop Anti-cancer Therapeutics
- Bio-engineered Animals and Models of Human Disease

## Structural Aspects of Biomaterials

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978385](http://webcast.berkeley.edu/course_details.php?seriesid=1906978385))

This course covers the mechanical and structural aspects of biological tissues and their replacements. Tissue structure and mechanical function are addressed. Natural and synthetic load-bearing biomaterials for clinical and medical applications are reviewed. Biocompatibility of biomaterials and host response to structural implants are examined. Quantitative treatment of biomechanical issues and constitutive relationships of tissues and biomaterials are covered. Material selection for load-bearing applications including reconstructive surgery, orthopedics, dentistry, and cardiology. Mechanical design for longevity including topics of fatigue, wear, and fracture. Use of bioresorbable implants and hybrid materials. Directions in tissue engineering. To watch streaming video of this visit [webcast.berkeley.edu/courses](http://webcast.berkeley.edu/courses).

- Overview of Biomaterials and Medical Devices
- Sterilization, Biocompatibility and Foreign Body Response
- Biomechanical Properties
- Constitutive Behavior
- Bending, Buckling

- Multiaxial Loading
- Yielding
- Fracture
- Fatigue I
- Fatigue II
- Fatigue III
- Corrosion
- Wear
- Orthopedics
- Tissues, Progression of Disease and Damage
- Orthopedic Clinical Treatments for Tissue Replacement and Repair I
- Orthopedic Clinical Treatments for Tissue Replacement and Repair Case Studies II
- Cardiovascular Tissues, Progression of Disease, Clinical Treatments, Devices Case Studies
- Dental Tissues, Progression of Disease, Clinical Treatments, Devices I
- Dental Tissues, Progression of Disease, Clinical Treatments, Devices Case Studies II
- Soft Tissues, Clinical Treatments, Devices I
- Soft Tissues, Clinical Treatments, Devices Case Studies II
- FDA Regulatory Issues
- Case Studies I
- Case Studies II

## Structural Aspects of Biomaterials (Lab)

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978386](http://webcast.berkeley.edu/course_details.php?seriesid=1906978386))

This course covers the mechanical and structural aspects of biological tissues and their replacements. Tissue structure and mechanical function are addressed. Natural and synthetic load-bearing biomaterials for clinical and medical applications are reviewed. Biocompatibility of biomaterials and host response to structural implants are examined. Quantitative treatment of biomechanical issues and constitutive relationships of tissues and biomaterials are covered. Material selection for load-bearing applications including reconstructive surgery, orthopedics, dentistry, and cardiology. Mechanical design for longevity including topics of fatigue, wear, and fracture. Use of bioresorbable implants and hybrid materials. Directions in tissue engineering. To watch streaming video of this visit [webcast.berkeley.edu/courses](http://webcast.berkeley.edu/courses).

## Cell Biology

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978433](http://webcast.berkeley.edu/course_details.php?seriesid=1906978433))

An introductory survey of cell and developmental biology. The assembly of supramolecular structures; membrane structure and function; the cell surface; cytoplasmic membranes; the cytoskeleton and cell motility; the eukaryotic genome, chromatin, and gene expression; the cell cycle; organelle biogenesis, differentiation, and morphogenesis.

- Membrane Structure - Lipids
- Membrane Structure - Proteins
- Membrane Dynamics
- Membrane Transport - Permeases and Channels
- Membrane Transport - Nucleocytoplasmic Exchange
- Membrane Assembly - Signal Hypothesis
- Membrane Assembly - Translocation Machinery
- Membrane Vesicular Traffic
- Membrane Traffic to the Lysosome
- Membrane Traffic - Cholesterol Regulation
- Membrane Transport - Action Potential
- Membrane Transport - Synaptic Transmission I
- Membrane Transport - Synaptic Transmission II
- Membrane Fusion
- Visualizing the Cytoskeleton
- Actin Filament Structure and Dynamics
- Actin Binding Proteins
- Myosin and Muscle Contraction
- Regulation of Actin Dynamics and Cell Movement
- Intermediate Filaments (video clip not available)
- Microtubule Structure and Dynamics
- Microtubule Motors and Motility
- Nucleus and Chromosome Structure I
- Nucleus and Chromosome Structure II
- Mitosis I
- Mitosis II and Cytokinesis
- Meiosis
- Cell Communication
- Receptors and Signaling
- G Protein Coupled Receptors
- GPCR Signaling and Second Messengers
- Receptor Tyrosine Kinases
- Ras-MAP Kinase Signaling
- Regulation of Cell Growth
- The G1/S Transition
- DNA Replication, G2 and Mitosis
- Checkpoints
- Apoptosis
- Oncogenes and Cancer

- Tumor Suppressors
- Cancer

## Introduction to Human Nutrition

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978398](http://webcast.berkeley.edu/course_details.php?seriesid=1906978398))

This course provides an overview of digestion and metabolism of nutrients. Foods are discussed as a source of nutrients, and the evidence is reviewed as to the effects of nutrition on health. The emphasis of the course is on issues of current interest and on worldwide problems of food and nutrition. Students are required to record their own diet, calculate its composition, and evaluate its nutrient content in light of their particular needs.

- Nutrient Needs
- Digestion
- Digestion Continued
- Carbohydrates
- Carbohydrates Continued
- Lipids
- Lipids Continued
- Protein
- Energy Metabolism
- Energy Balance - Video Not Available
- Obesity
- Dieting, Haes, Cancer
- Fat-Soluble Vitamins
- Water Soluble Vitamins
- Why Do We Eat Vitamins?
- Trace Minerals
- Eating Disorders
- Water
- Sports and Nutrition
- Maternal Nutrition
- Trace Minerals
- Food Safety
- Eating Disorders, body Image, and College Students
- Foods and Review

## Fall 2007 Webcasts

(<http://webcast.berkeley.edu/courses.php?semesterid=25>)

## General Biology Lecture

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978456](http://webcast.berkeley.edu/course_details.php?seriesid=1906978456))

General introduction to cell structure and function, molecular and organism genetics, animal development, form and function. Intended for biological sciences majors, but open to all qualified students.

- Life and the Stuff of Life
- Macromolecules structure and function:
- Macromolecules structure and function:
- Cell structure and organization -#1
- Cell structure and organization -#2
- Biological membrane structure & organization
- How cells function-an introduction to cellular metabolism and biological catalysts
- Enzyme structure and function -#1
- Enzyme structure and function -#2
- Cellular energy and work
- Cellular combustion and the production of
- Photosynthesis-from light to ATP
- Photosynthesis-from CO<sub>2</sub> to sugars
- How Somatic Cells (Mitosis) and Gametes (Meiosis) Inherit Genomes.
- The Laws that Govern the Inheritance of Traits - Segregation of Alleles.
- How Genes Organized on Chromosomes ? Linkage, Recombination, Mapping.
- Genes Are Made Of DNA.
- Gene Expression I - DNA is transcribed into RNA.
- Gene Expression II - RNA is translated into protein.
- Microbes - Viruses, Bacteria, Plasmids, Transposons.
- Regulation of Gene Expression in Prokaryotes
- Gene Structure & Regulation in Eukaryotes I.
- Gene Structure & Regulation in Eukaryotes II.
- How To Isolate, Study and Use Genes.
- How To Isolate, Study and Use Genes.
- Genetic Regulation of Development.
- Introduction to Animals: Tissues and Organs
- Homeostasis: Digestion & Nutrition
- Homeostasis: Circulation
- Homeostasis: Respiration
- Homeostasis: The body's defenses
- Homeostasis: The immune system
- Homeostasis: Osmoregulation
- Integration: Hormones
- Integration: Sex & reproduction

- Integration: Fertilization & early development
- Integration: Nerve Cells & Excitability
- Integration: Muscle cells & motility
- Integration: The nervous system
- Integration: Sensing the environment

## General Biology Laboratory

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978457](http://webcast.berkeley.edu/course_details.php?seriesid=1906978457))

- Lab 1 - Safety and Equipment Use
- Ligation and Cells
- Lab 3 - Transform, Enzymes
- Lab 4 - Colony Isolation, Complementation I, Photosynthesis (some noise on audio)
- Lab 5 - Plasmid Isolation and Digestion, Complementation II, Genetics and Mol. Biol. I
- Lab 6 - DNA Electrophoresis, Complementation III, GMB II
- Lab 7 - Invertebrates I
- Lab 8 - Invertebrates II
- Lab 9 - Anatomy
- Lab 10 - Reproduction and Development
- Lab 11 - Chordate Diversity (clips played during lecture have been removed)

## General Human Anatomy

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978461](http://webcast.berkeley.edu/course_details.php?seriesid=1906978461))

The functional anatomy of the human body as revealed by gross and microscopic examination.

- Organization of Body
- Skeletal System 1
- Skeletal System 2
- Skeletal System 3
- Skeletal System 4
- Skeletal System 5
- Skeletal System 6
- Skeletal, Muscular Systems
- Muscular System 1
- Muscular System 2
- Muscular System 3

- Hematology 1
- Hematology 2
- Hematology, Cardiology
- Cardiology
- Blood Vascular System 1
- Blood Vascular System 2
- Lymphatic System
- Respiratory System 1
- Respiratory System 2
- Neurohistology
- Neurohistology, Development of Nervous System
- Development of Nervous System
- Spinal Cord and Nerves
- Peripheral Nerves
- Sensory and Motor Pathways
- Motor Pathways and Forebrain
- Forebrain
- Eye
- Digestive System 1
- Digestive System 2
- Digestive System 3
- Urinary System
- Endocrine System
- Endocrine System - Female Reproductive System
- Female Reproductive System
- Male Reproductive System
- Integumentary System

## General Biochemistry and Molecular Biology

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978486](http://webcast.berkeley.edu/course_details.php?seriesid=1906978486))

Molecular biology of prokaryotic and eukaryotic cells and their viruses. Mechanisms of DNA replication, transcription, translation. Structure of genes and chromosomes. Regulation of gene expression. Biochemical processes and principles in membrane structure and function, intracellular trafficking and subcellular compartmentation, cytoskeletal architecture, nucleocytoplasmic transport, signal transduction mechanisms, and cell cycle control.

- Variations in DNA Structure
- Principles of RNA Structure and Recognition
- DNA Polymerases
- The DNA Replication Fork



- Other Replication Factors
- Replication Origin and Ends - Regulation
- DNA Analysis Methods I
- DNA Analysis Methods II
- Chromatin and Chromosome Structure
- Genome Structures
- Genomics and Bioinformatics
- Human Disease Genes
- DNA Damage and Repair
- Recombination and Repair in Cancer
- Prokaryotic Transcription Apparatus Part I
- Prokaryotic Transcription Apparatus Part II
- Control of Prokaryotic Transcription Part I
- Control of Prokaryotic Transcription Part II
- Eukaryotic Transcription Apparatus and Methods to Analyze Transcription Part I
- Eukaryotic Transcription Apparatus and Methods to Analyze Transcription Part II
- Eukaryotic Transcription Apparatus and Methods to Analyze Transcription Part III
- Control of Eukaryotic Transcription Part I
- Control of Eukaryotic Transcription Part II
- Control of Eukaryotic Transcription Part III
- RNA Processing Part I
- RNA Processing Part II
- Control of Translation Part I
- Control of Translation Part II
- Introduction to Biological Membranes
- Transport Across Membranes
- Membrane Trafficking
- Cell Signaling (Due to technical problem this webcast is not available)
- Facilitated Diffusion
- Membrane Potential and Nerve Impulses
- Ciliary Pathway
- Signal Sequence Hypothesis
- Golgi
- Golgi - con't
- Common Elements in Signalling Pathways
- Glucose Mobilization
- Integrin Signaling
- Cell Signaling and Apoptosis

## General Genetics

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978473](http://webcast.berkeley.edu/course_details.php?seriesid=1906978473))

- Genetics - Scope and Problems
- Mendel I
- Mendel II
- Labor Day
- Chromosomes and Heredity (podcast not available)
- Mapping Genetic Distance
- Yeast Chromosomes
- Beadle and Tatum
- Allele Interactions - Single Loci
- Allele Interactions - Multiple Loci
- Bacterial and Phage Genetics I
- Bacterial and Phage Genetics II
- The Recombinant DNA Debate
- Cytogenetics of Crossing Over
- Chromosomal Rearrangements
- Plant Genetics and Epigenetics
- Epigenetics
- Dosage Compensation
- Organelle Genetics
- Transposable Elements as Tools in Genetic Analysis
- Genetic Screens - Apoptosis in C Elegans
- Genetic Analysis of Mutation Types
- Enhancer Genetics
- Mosaic Analysis
- Mosaic Screens
- Suppressor Genetics - Intragenic and Informational Suppressors
- Suppressor Genetics - Bypass and Epistatic Suppressors
- Pathway Analysis
- RNAi
- RNAi Screens
- Hartwell Cell Cycle - Cancer Overview
- Cryptic Variation and Prions
- Linkage Mapping to Anonymous Markers
- Whole-genome Linkage Scans
- When to Believe a P-value
- Quantitative Traits
- Multifactorial Traits
- Natural Human Variation
- Association Studies
- Microarrays and Cancer
- Natural Variation in Gene Expression

- Population and Evolutionary Genetics

## Introduction to Human Nutrition

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978462](http://webcast.berkeley.edu/course_details.php?seriesid=1906978462))

This course provides an overview of digestion and metabolism of nutrients. Foods are discussed as a source of nutrients, and the evidence is reviewed as to the effects of nutrition on health. The emphasis of the course is on issues of current interest and on worldwide problems of food and nutrition. Students are required to record their own diet, calculate its composition, and evaluate its nutrient content in light of their particular needs.

- Designing a Diet
- Digestion
- Carbohydrates I
- Carbohydrates II
- Lipids I
- Lipids II
- Protein
- Energy Metabolism
- Nutrients Involved in Energy Metabolism
- Nutrients Involved in Fluid and Electrolyte Balance
- Blood Health and Immunity
- Nutrients Involved in Blood Health and Immunity
- Alcohol
- Water
- History of Vitamins (lecture not available at instructors request)
- Vitamin D - The Sunshine Vitamin (webcast not available at instructors request)
- Energy Balance and Obesity
- Body Weight
- Sports Nutrition
- Nutrition in Pregnancy and Lactation
- Diet and Health
- Malnutrition
- Eating Disorders
- Food Safety

## Nutrient Function and Metabolism

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978474](http://webcast.berkeley.edu/course_details.php?seriesid=1906978474))

Delivery of nutrients from foods to mammalian cells; major metabolic pathways; function of nutrients in energy metabolism, nitrogen and lipid metabolism, structural tissues and regulation; essentiality, activation, storage, excretion, and toxicity of nutrients.

- Carbohydrates and Proteins
- Lipid Absorption and Digestion
- Lipids
- Metabolism
- Energy
- Glycolysis
- The Citric Acid Cycle and Glycolysis
- TCA Cycle
- Water
- Protein Metabolism
- Protein Catabolism
- De novo Lipogenesis
- Gluconeogenesis; Nutrients B12 and Folate
- Proteins
- Iron, part 1
- Iron, part 2
- Vitamin K; Calcium Phosphate and Bones
- Bone Formation-Calcium, Phosphorus
- Vitamin A

## Epidemiologic Methods I

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978480](http://webcast.berkeley.edu/course_details.php?seriesid=1906978480))

Principles and methods of epidemiology: study design, selection, and definition of cases and controls; sampling, data collection, analysis, and inference.

- Epidemiology - A Brief History
- Descriptive Epidemiology I - Assessing the Health of the Community
- Descriptive Epidemiology II - Mortality Measures and Patterns
- Descriptive Epidemiology III - Measuring Morbidity
- Social Factors in Health and Disease
- Descriptive Epidemiology IV - Morbidity Patterns
- Disease Distributions in Populations
- Hypothesis Generation and the Epidemiologic Paradigm
- Overview of Study Designs and Measures of Effect
- Experimental Studies I: Individual Level Interventions
- Experimental Studies II - Group Level Interventions

- Cohort Studies I
- C. Studies
- Some Ethical Issues in Epidemiological Research
- Cross Sectional Studies
- Case Control Studies I
- Case Control Studies II
- Nested Case-Control, Case-Cohort and Case-Crossover Studies
- Ecological Studies
- Summary of Study Designs
- Confounding I
- Confounding II
- Effect Modification
- Selection Bias
- Measurement of Outcomes and Exposures
- Information Bias and Consequences of Error
- Interpreting Tests of Statistical Significance I
- Interpreting Tests of Statistical Significance II
- Studies that Combine Individual and Group Level Variables
- Causal Inference I
- Causal Inference II
- Meta Analysis
- Screening I
- Screening II
- Choosing the Best Study Design
- Surveillance
- Outbreak Detection
- Using Data on Risk and Concluding Remarks

## Spring 2008 Webcasts

(<http://webcast.berkeley.edu/courses.php?semesterid=27>)

## General Biology Lecture

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978495](http://webcast.berkeley.edu/course_details.php?seriesid=1906978495))

General introduction to cell structure and function, molecular and organism genetics, animal development, form and function.

- Intro: The Cell Theory, Bacteria, Animal Cells, Evolution, (Viruses, Mitochondria)
- The Central Dogma
- Lipids and Biological Membranes; Carbohydrates
- Amino Acids and Protein Structure

- Biological Membranes and Transport
- Cells and Organelles
- Cytoskeleton, Cell Adhesion
- Energy, Thermodynamics and Enzymes
- Enzymes (clips played during class have been removed)
- Metabolism I: Glycolysis
- Metabolism II: TCA cycles; Oxidative Phosphorylation
- Photosynthesis: Light and Dark Reactions
- Signalling Biochemistry
- Techniques in Molecular Biology
- Microbial Genetics and Evolution - Chromosomes, Plasmids, and Phage
- DNA Replication and the PCR
- Cell Cycle, Mitosis, and Reproduction of Cells
- Chromosomes, Checkpoints, and Cancer
- Meiosis and Sexual Life Cycle
- Gregor Mendel and 2 of Biology's 3 Laws
- Recombination, Linkage, and Mapping
- Transcription
- The Genetic Code and Translation
- Prokaryotic Gene Regulation
- Eukaryotic Gene Expression and Regulation
- Human Genetics and Epigenetics
- GMO's and Organismal Cloning
- Stem Cells and Aging
- Multi-cellularity: Cell Shape and Function, Tissue Specialization, Homeostasis
- Intercellular and Physiological Communication: Hormones, Receptors, and the Endocrine System - Part I
- Intercellular and Physiological Communication: Hormones, Receptors, and the Endocrine System Part II
- Reproductive System Part I
- Reproductive System Part II
- Fertilization and Embryogenesis
- Developmental Strategies and Mechanisms
- Digestive System
- Stem Cells
- Immune System
- Excretory System and Kidney Function
- Nervous System
- Cell and Tissue dysfunction, Cancer and Experimental Strategies to Develop Anti-cancer Therapeutics
- Bio-engineered Animals and Models of Human Disease

## General Biology Laboratory

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978496](http://webcast.berkeley.edu/course_details.php?seriesid=1906978496))

- Safety, Micropipetter, Microscope and Cells
- Chordate Diversity
- Transformation, Enzymes
- Colony Isolation, Complementation I, Photosynthesis
- Plasmid Isolation and Digestion - Complementation II
- DNA Electrophoresis - Complementation III
- Bioinformatics
- Anatomy
- Invertebrates I
- Invertebrates II
- Reproduction and Development

## Cell Biology

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978516](http://webcast.berkeley.edu/course_details.php?seriesid=1906978516))

An introductory survey of cell and developmental biology. The assembly of supramolecular structures; membrane structure and function; the cell surface; cytoplasmic membranes; the cytoskeleton and cell motility; the eukaryotic genome, chromatin, and gene expression; the cell cycle; organelle biogenesis, differentiation, and morphogenesis.

- Membrane Structure - Lipids
- Membrane Structures - Proteins
- Membrane Dynamics
- Membrane Transport - Permeases and Channels
- Membrane Transport - Nucleocytoplasmic Exchange
- Membrane Assembly - Signal Hypothesis
- Membrane Assembly - Translocation
- Membrane Vesicular Traffic
- Lysosome
- Cholesterol Regulation
- Action Potential
- Synaptic Transmission I
- Synaptic Transmission II
- Membrane Fusion
- Visualizing Cells - Principles of Microscopy
- Actin Filaments - Structural and Dynamic Properties
- Actin-Binding Proteins and Cell Migration
- Actin and Myosin in Skeletal Muscle Contraction

- Regulation of Contraction in Muscle and Nonmuscle Cells
- Cell Adhesion, Motility and Division
- Intermediate Filaments and Septins
- Microtubules - Structure and Dynamic Properties
- Regulation of Microtubule Organization and Motility
- Nuclear and Chromatin Structure
- Mitosis and Cell Division
- Mitotic Spindle Assembly and Function
- Meiosis

## Introduction to Human Nutrition

([http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978542](http://webcast.berkeley.edu/course_details.php?seriesid=1906978542))

This course provides an overview of digestion and metabolism of nutrients. Foods are discussed as a source of nutrients, and the evidence is reviewed as to the effects of nutrition on health. The emphasis of the course is on issues of current interest and on worldwide problems of food and nutrition.

- Introduction to Human Nutrition
- What We Eat
- Digestion
- Vitamins - Micronutrients
- Alcohol
- Water
- Iron- Trace Minerals
- History of Vitamins
- Vitamin D
- Sports and Nutrition
- Pregnancy - clips played during class have been removed
- Food Safety

## Fall 2008 Webcasts

(<http://webcast.berkeley.edu/courses.php?semesterid=2008-D>)

## General Biology Lecture

([http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2008-D-7753&semesterid=2008-D](http://webcast.berkeley.edu/course_details_new.php?seriesid=2008-D-7753&semesterid=2008-D))

- Life and the stuff of life



- Macromolecules structure and function: proteins and lipids
- Macromolecules structure and function: carbohydrates and nucleic acids
- Cell structure and organization -#1
- Cell structure and organization -#2
- Biological membrane structure & organization
- How cells function - an introduction to cellular metabolism and biological catalysts
- Enzyme structure and function -#1
- Enzyme structure and function -#2
- Cellular energy and work
- Cellular combustion and the production of energy - #1 - anaerobic processes
- Cellular combustion and the production of energy - #2 - aerobic processes
- Fri, Sep 26 Photosynthesis - from light to ATP
- Photosynthesis - from CO<sub>2</sub> to sugars
- How Somatic Cells (Mitosis) and Gametes (Meiosis) Inherit Genomes
- The Laws that Govern the Inheritance of Traits - Segregation of Alleles
- How Genes Are Organized on Chromosomes - Linkage, Recombination, Mapping
- Genes Are Made Of DNA
- Gene Expression I - DNA is transcribed into RNA
- Gene Expression II - RNA is translated into protein
- Microbes - Viruses, Bacteria, Plasmids, Transposons
- Regulation of Gene Expression in Prokaryotes
- Gene Structure and Regulation in Eukaryotes I
- Gene Structure and Regulation in Eukaryotes II
- How To Isolate, Study and Use Genes
- Genetic Regulation of Development
- Overview Molecular regulation
- Multi-cellularity: Cell Shape and function, Tissue specialization, homeostasis
- Intercellular and Physiological Communication: Hormones, Receptors, & the Endocrine System - Part I
- Intercellular and Physiological Communication: Hormones, Receptors, & the Endocrine System - Part II
- Reproductive system - Part I
- Reproductive system - Part II
- Fertilization and embryogenesis
- Developmental strategies and mechanisms
- Digestive system
- Circulatory and Respiratory systems
- Immune system
- Excretory system and kidney function

- Nervous system
- Cell and Tissue dysfunction, Cancer and Experimental Strategies to Develop Anti-cancer Therapeutics
- Bio-engineered Animals and Models of Human Disease

## General Biology Laboratory

([http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2008-D-7834&semesterid=2008-D](http://webcast.berkeley.edu/course_details_new.php?seriesid=2008-D-7834&semesterid=2008-D))

- Lab 2: Chordate Diversity
- Lab 3: Transform, Enzymes
- Lab 4: Colony Isolation, Complementation I, Photosynthesis
- Lab 5: Plasmid isolation and digestion, Complementation II, Genetics and Mol. Biol. I
- Lab 6: DNA electrophoresis, Complementation III, GMB. I
- Lab 7: Bioinformatics
- Lab 9: Invertebrates I
- Lab 10: Invertebrates II
- Lab 11: Anatomy
- Lab 12: Reproduction and Development

## General Human Anatomy

([http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2008-D-43168&semesterid=2008-D](http://webcast.berkeley.edu/course_details_new.php?seriesid=2008-D-43168&semesterid=2008-D))

- Muscular System I
- Muscular System II
- Muscular System III
- Muscular System IV
- Muscular System V; Digestive System I
- Digestive System II
- Digestive System III; Liver I
- Liver II
- Digestive System IV; Hematology I
- Hematology II
- Cardiology I
- Cardiology II
- Blood - Vascular System I
- Vascular System II; Lymphatic System
- Lymphatic Vessels and Lymph; Respiratory System I
- Respiratory System II

- Respiratory System III, Nervous System I
- Nervous System II
- Nervous System III
- Nervous System IV
- Nervous System V
- Nervous System VI
- Nervous System VII
- Nervous System VIII
- Nervous System IX
- Nervous System X
- Nervous System XI
- Nervous System XII: Inner Ear; Urinary System I
- Urinary System II; Endocrine System I
- Endocrine System II
- Endocrine System III
- Female Reproductive System
- Male Reproductive System
- Male Reproductive System - continued

## Molecular Biology: Macromolecular Synthesis and Cellular Function

([http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2008-D-58264&semesterid=2008-D](http://webcast.berkeley.edu/course_details_new.php?seriesid=2008-D-58264&semesterid=2008-D))

- Not your grandfathers DNA - Variations in DNA structure
- Twisted - Principles of RNA structure and recognition Screencast is unavailable for this lecture
- Prokaryotic Transcription Apparatus: Part I
- Prokaryotic Transcription Apparatus: Part II
- The DNA replication fork: collaborate or die
- Other replication factors: it takes a village
- Replication origins and ends: regulation
- You say you want a revolution: DNA analysis methods
- DNA analysis methods II Due to network outage visuals are not available.
- DNA wrap: Chromatin and chromosome structure
- Genome structures - what is in a model organism
- Genomics and Bioinformatics - Time machines and function
- Human disease genes: risky science and the new infinity
- DNA damage and repair: oops - (Due to a capturing failure, the image is absent for the first 7 minutes of lecture)
- Recombination and repair in cancer
- Control of Prokaryotic Transcription: Part I

- Control of Prokaryotic Transcription: Part II Due to system failure this lecture is not available.
- Eukaryotic Transcription Apparatus and Methods to Analyze Transcription: Part I
- Eukaryotic Transcription Apparatus and Methods to Analyze Transcription: Part II
- Eukaryotic Transcription Apparatus and Methods to Analyze Transcription: Part III
- Control of Eukaryotic Transcription: Part I
- Control of Eukaryotic Transcription: Part II
- Control of Eukaryotic Transcription: Part III
- RNA Processing: Part I
- RNA Processing: Part II
- RNA Processing: Part III
- Control of Translation: Part I
- Control of Translation: Part II
- Membrane Structure No computer for first 7 minutes of lecture
- Membrane Structure No visuals are available. Audio only.
- Membrane Structure and Transport of Small Molecules No visuals are available. Audio only.
- Transport of Small Molecules No visuals are available. Audio only.
- Assembly of Proteins in Membranes No visuals are available. Audio only.
- Assembly of Proteins in Membranes No visuals are available. Audio only.
- Assembly of Proteins in Membranes No visuals are available. Audio only.
- Transport Into and Out of the Nucleus No visuals are available. Audio only.
- Intracellular Transport of Proteins No visuals are available. Audio only.
- Intracellular Transport of Proteins No visuals are available. Audio only.
- Intracellular Transport of Proteins No visuals are available. Audio only.
- Hormones and Signal Transduction No visuals are available. Audio only.
- Hormones and Signal Transduction & Cell Division Cycle Please discard the video icon. Audio only.
- Cell Division Cycle

## Nutrient Function and Metabolism

([http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2008-D-64623&semesterid=2008-D](http://webcast.berkeley.edu/course_details_new.php?seriesid=2008-D-64623&semesterid=2008-D))

## Introduction to Multivariate Statistics

([http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2008-D-76145&semesterid=2008-D](http://webcast.berkeley.edu/course_details_new.php?seriesid=2008-D-76145&semesterid=2008-D))

## Epidemiologic Methods I

([http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2008-D-76169&semesterid=2008-D](http://webcast.berkeley.edu/course_details_new.php?seriesid=2008-D-76169&semesterid=2008-D))

- Descriptive Epidemiology I: Assessing the Health of the Community
- Descriptive Epidemiology II: Mortality Measures and Patterns
- Descriptive Epidemiology III: Measuring Morbidity
- Epidemiology: A Brief History
- Descriptive Epidemiology IV: Morbidity Patterns
- Disease Distributions in Populations
- Social Factors in Health and Disease
- Hypothesis Generation and the Epidemiologic Paradigm
- Ecologic Studies
- Overview of Study Designs and Measures of Effect
- Experimental Studies I: Individual Level Interventions
- Experimental Studies II: Individual Level Interventions
- Experimental Studies III: Group Level Interventions
- Cohort Studies I
- Cohort Studies II
- Cohort Studies III
- Cross Sectional Studies
- Case Control Studies I
- Some Ethical Issues in Epidemiological Research - Microphone was turned off for the first few seconds of lecture.
- Case Control Studies II
- Nested Case-Control, Case-Cohort, and Case-Crossover Studies
- A Case Control Study of Childhood Leukemia
- Summary of Study Designs
- Confounding I
- Confounding II
- Effect Modification
- Interpreting Tests of Statistical Significance I
- Interpreting Tests of Statistical Significance II
- Interpreting Tests of Statistical Significance III
- Selection Bias
- Measurement of Outcomes and Exposures
- Information Bias and Consequences of Error
- Causal Inference I

- Causal Inference II
- Screening I
- Screening II
- Meta Analysis
- Choosing the Best Study Design
- Surveillance
- Outbreak Investigation
- Using Data on Risk and Concluding Remarks

## Spring 2009 Webcasts

(<http://webcast.berkeley.edu/courses.php?semesterid=2009-B>)

## General Biology Lecture

([http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2009-B-7753&semesterid=2009-B](http://webcast.berkeley.edu/course_details_new.php?seriesid=2009-B-7753&semesterid=2009-B))

- Intro to Biology
- Biological Polymers
- Cell Organization
- Organelles
- Membranes
- Proteins
- Thermodynamics and Enzymes
- Overview of Metabolism
- Glycolysis, Krebs cycle
- Electron Transport, chemiosmosis
- Photosynthesis: Light Reactions
- Photosynthesis: Light Independent Reactions
- Biosynthesis and organelle assembly
- Regulation of metabolism
- Microbial Genetics and Evolution- Chromosomes, Plasmids, and Phage
- DNA Replication and the PCR
- Cell Cycle, Mitosis and Reproduction of Cells
- Chromosomes, Checkpoints, and Cancer
- Meiosis and Sexual Life Cycle
- Gregor Mendel and 2 of Biologys 3 Laws
- Recombination, Linkage and Mapping
- Transcription
- The Genetic Code and Translation
- Prokaryotic Gene Regulation
- Eukaryotic Gene Expression and Regulation
- Human Genetics and Epigenetics

- GMOs and Organismal Cloning
- Stem Cells and Aging
- Multi-cellularity: Cell Shape and function, Tissue specialization, homeostasis
- Intercellular and Physiological Communication: Hormones, Receptors, and the Endocrine System-Part I
- Intercellular and Physiological Communication: Hormones, Receptors, and the Endocrine System-Part II
- Reproductive system-Part I
- Reproductive system-Part II
- Fertilization and embryogenesis
- Developmental strategies and mechanisms
- Digestive system
- Circulatory and Respiratory systems
- Immune system
- Excretory system and kidney function
- Nervous system
- Cell and Tissue dysfunction, Cancer and Experimental Strategies to Develop Anti-cancer Therapeutics
- Bio-engineered Animals and Models of Human Disease

## General Biology Laboratory

([http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2009-B-7834&semesterid=2009-B](http://webcast.berkeley.edu/course_details_new.php?seriesid=2009-B-7834&semesterid=2009-B))

- Lab 1: Safety, Micropipetter, Microscope and Cells.
- Lab 2: Chordate Diversity.
- Lab 3: Transform, Enzymes.
- Lab 4: Colony Isolation, Complementation I, Photosynthesis.
- Lab 5: Plasmid isolation digestion, and Complementation II, Genetics and Mol. Biol. I.
- Lab 6: DNA electrophoresis, Complementation III, GMB. II
- Lab 7: Bioinformatics
- Lab 8: Anatomy.
- Lab 9: Invertebrates I.
- Lab 10: Invertebrates II.
- Lab 11: Reproduction and Development

## Cell Biology

([http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2009-B-58324&semesterid=2009-B](http://webcast.berkeley.edu/course_details_new.php?seriesid=2009-B-58324&semesterid=2009-B))

- Membrane Structure: Lipids
- Membrane Structure: Proteins
- Membrane Structure: Dynamics
- Membrane Transport: Permeases and Channels
- Membrane Transport: Nucleocytoplasmic Exchange
- Membrane Assembly: Signal Hypothesis
- Membrane Assembly: Mechanism
- Membrane Assembly: Topology
- Cholesterol Regulation
- Membrane Vesicular Transport
- Lysosomal Protein Transport
- Action Potential
- Synaptic Transmission
- Membrane Fusion
- Visualizing cells: principles of microscopy
- Actin filaments: structural and dynamic properties
- Actin-binding proteins and cell migration
- Actin and myosin in skeletal muscle contraction
- Regulation of contraction in muscle and nonmuscle cells
- Cell Adhesion, motility and division
- Intermediate filaments and septins
- Microtubules: structure and dynamic properties
- Regulation of microtubule organization and motility
- Nuclear and chromatin structure
- Mitosis and cell division
- Mitotic spindle assembly and function
- Meiosis
- Cell communication: ligand and receptors
- Receptors
- G-protein coupled receptor signaling I
- G-protein coupled receptor signaling II
- Receptor tyrosine kinase signaling
- The Ras-MAP kinase pathway
- Regulation of cell growth
- The cell cycle I
- The cell cycle II
- The cell cycle III
- Checkpoints
- Apoptosis
- Cancer

## Fall 2009 Webcasts

(<http://webcast.berkeley.edu/courses.php?semesterid=2009-D>)



## General Biology Lecture

([http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2009-D-7803&semesterid=2009-D](http://webcast.berkeley.edu/course_details_new.php?seriesid=2009-D-7803&semesterid=2009-D))

- Introduction to macromolecules. Protein structure and function
- Structure and function: lipids, carbohydrates and nucleic acids
- Cell structure and organization 1
- Cell structure and organization 2
- The structure of biological membranes
- Cellular metabolism and biological catalysts
- Enzyme structure
- Regulation of enzymatic activity
- Introduction to bioenergetics
- Cellular energy production - anaerobic processes
- Photosynthesis-the light reactions
- Photosynthesis-CO<sub>2</sub> fixation and related processes
- Multi-cellularity: Cell Shape and function, Tissue specialization
- Homeostasis: Digestion and Nutrition Due to a capture problem, only 35 minutes of lecture is available
- Homeostasis: Circulation
- Homeostasis: Respiration
- The body`s defenses first three minutes of lecture are unavailable.
- Homeostasis: The immune system
- Homeostasis: Osmoregulation
- Integration: Hormones and Chemical Communication
- Integration: Sex and reproduction
- Integration: Fertilization and early development
- Integration: Nerve cells and excitability
- Integration: Muscle cells and motility
- Integration: The nervous system
- How Somatic Cells (Mitosis) and Gametes (Meiosis) Inherit Genomes
- The Laws that Govern the Inheritance of Traits - Segregation of Alleles
- How Genes Organized on Chromosomes - Linkage, Recombination, Mapping
- Genes Are Made of DNA
- Gene Expression I - DNA is transcribed into RNA
- Gene Expression II - RNA is translated into protein
- Regulation of Gene Expression in Prokaryotes
- Gene Structure and Regulation in Eukaryotes I
- Gene Structure & Regulation in Eukaryotes II
- How To Isolate, Study and Use Genes
- Genetic Regulation of Development

## General Biology Laboratory

([http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2009-D-7884&semesterid=2009-D](http://webcast.berkeley.edu/course_details_new.php?seriesid=2009-D-7884&semesterid=2009-D))

- Safety, Chordate Diversity.
- Safety, Micropipetter, Microscope and Cells (from Spring 2009) No current lecture due to Labor day holiday.
- Transform, Enzymes, Microbiology-Vibrio isolation
- Colony Isolation, Complementation I, Vibrio streaking, Photosynthesis
- Plasmid Isolation and digestion, Complementation II, Genetics and Mol. Biol. I. Vibrio streaking.
- DNA electrophoresis, Complementation III, GMB. II Vibrio examination.
- Bioinformatics
- Anatomy. Labs are held this week and lab exam 1 will be given on Friday night.
- Invertebrates I.
- Invertebrates II.
- Reproduction and Development

## Molecular Biology: Macromolecular Synthesis and Cellular Function

([http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2009-D-58258&semesterid=2009-D](http://webcast.berkeley.edu/course_details_new.php?seriesid=2009-D-58258&semesterid=2009-D))

## Nutrient Function and Metabolism

([http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2009-D-64623&semesterid=2009-D](http://webcast.berkeley.edu/course_details_new.php?seriesid=2009-D-64623&semesterid=2009-D))

- Digestive physiology
- Transport
- Lipid digestion and absorption Lecture starts at 44 minutes due to technical problem
- Lipid dig and absorp (cont`d)
- Protein digestion and absorption
- Carbohydrate digestion and absorption
- Carb digestion and absorption (continued)
- Energy balance and nutrients involved in energy extraction (pantothenic acid, niacin and riboflavin)
- Glycolysis and Handling of Plasma Glucose (magnesium)
- Glycolysis, TCA cycle and energy (thiamin)

- TCA cycle
- Catabolism of lipids
- Protein and nitrogen metabolism (pyridoxine)
- De novo lipogenesis and the pentose phosphate pathway
- Gluconeogenesis (biotin)
- Iron and heme
- Vitamin B12 and folic acid
- Vitamin K
- Calcium, Phosphorus, Vitamin D and bones
- Vitamin A

## Epidemiologic Methods I

([http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2009-D-76187&semesterid=2009-D](http://webcast.berkeley.edu/course_details_new.php?seriesid=2009-D-76187&semesterid=2009-D))

## Public Health Preparedness & Emergency Response

([http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2009-D-76241&semesterid=2009-D](http://webcast.berkeley.edu/course_details_new.php?seriesid=2009-D-76241&semesterid=2009-D))

## Spring 2010 Courses

(<http://webcast.berkeley.edu/courses.php?semesterid=2010-B>)

## General Biology Lecture

([http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2010-B-7703&semesterid=2010-B](http://webcast.berkeley.edu/course_details_new.php?seriesid=2010-B-7703&semesterid=2010-B))

- Introduction to macromolecules. Protein structure and function.
- Structure and function: lipids, carbohydrate and nucleic acids.
- Cell structure and organization -#1
- Cell structure and organization -#2
- The structure of biological membranes.
- Cellular metabolism and biological catalyst
- Enzyme structure.
- Regulation of enzymatic activity.
- Introduction to bioenergetics.
- Cellular energy production and anaerobic processes.
- Cellular energy production and aerobic processes.
- Photosynthesis-the light reactions.
- Photosynthesis-CO<sub>2</sub> fixation and related processes.

- I, PCR. Microbial Genetics and Evolution-Chromosomes, Plasmids, and Phage
- DNA Replication and the PCR.
- Cell Cycle, Mitosis and Reproduction of Cells
- Chromosomes, Checkpoints, and Cancer
- Meiosis and Sexual Life Cycle
- Gregor Mendel and 2 of Biologys 3 Laws
- Recombination, Linkage and Mapping
- Transcription
- The Genetic Code and Translation
- Prokaryotic Gene Regulation
- Eukaryotic Gene Expression and Regulation
- Human Genetics and Epigenetics
- GMOs and Organismal Cloning
- Multi-cellularity: Cell Shape and function, Tissue specialization, homeostasis
- Intercellular and Physiological Communication: Hormones, Receptors, and the Endocrine System-Part I
- Intercellular and Physiological Communication - Hormones, Receptors, and the Endocrine System-Part II
- Reproductive system-Part I
- Reproductive system-Part II
- Fertilization and embryogenesis
- Developmental strategies and mechanisms
- Digestive system
- Circulatory and Respiratory systems
- Immune system
- Excretory system and kidney function
- Cell and Tissue dysfunction, Cancer and Experimental Strategies to Develop Anti-cancer Therapeutics

## Genes, Cells, and Creatures

([http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2010-B-57724&semesterid=2010-B](http://webcast.berkeley.edu/course_details_new.php?seriesid=2010-B-57724&semesterid=2010-B))

## Global Health: A Multidisciplinary Examination

([http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2010-B-75595&semesterid=2010-B](http://webcast.berkeley.edu/course_details_new.php?seriesid=2010-B-75595&semesterid=2010-B))

## Statistical Analysis of Continuous Outcome Data

([http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2010-B-75704&semesterid=2010-B](http://webcast.berkeley.edu/course_details_new.php?seriesid=2010-B-75704&semesterid=2010-B))

## Statistical Analysis of Categorical Data

([http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2010-B-76196&semesterid=2010-B](http://webcast.berkeley.edu/course_details_new.php?seriesid=2010-B-76196&semesterid=2010-B))

## Epidemiology and Control of Infectious Diseases

([http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2010-B-76235&semesterid=2010-B](http://webcast.berkeley.edu/course_details_new.php?seriesid=2010-B-76235&semesterid=2010-B))

## Ethics and Public Health in an Age of Catastrophe

([http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2010-B-76238&semesterid=2010-B](http://webcast.berkeley.edu/course_details_new.php?seriesid=2010-B-76238&semesterid=2010-B))

## Sociology of Health and Medicine

([http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2010-B-75800|2010-B-81792&semesterid=2010-B](http://webcast.berkeley.edu/course_details_new.php?seriesid=2010-B-75800|2010-B-81792&semesterid=2010-B))

## Longitudinal Data Analysis

([http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2010-B-76211|2010-B-87609&semesterid=2010-B](http://webcast.berkeley.edu/course_details_new.php?seriesid=2010-B-76211|2010-B-87609&semesterid=2010-B))

## Fall 2010 Webcasts

(<http://webcast.berkeley.edu/courses.php?semesterid=2010-D>)

## Molecular Biology: Macromolecular Synthesis and Cellular Function

([http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2010-D-58309&semesterid=2010-D](http://webcast.berkeley.edu/course_details_new.php?seriesid=2010-D-58309&semesterid=2010-D))

## Nutrient Function and Metabolism

([http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2010-D-64623&semesterid=2010-D](http://webcast.berkeley.edu/course_details_new.php?seriesid=2010-D-64623&semesterid=2010-D))