For your advising appointment you will need:
✓ Course Directory
✓ Degree Advice Report
✓ Major Guidelines Worksheets

REGISTRATION NOTES:

• For permission required courses: If contact information is not listed on the Student Link, email Stacy Straaberg Finfrock at stacysf@bu.edu.

• Full time students may take up to 18 credits per semester. Seniors are automatically awarded a fee waiver so that they may take up to 20 credits per semester without additional fees.

• PDP, ROTC, and CAS FY/SY courses do not count towards graduation credits.

• The following courses do not count as Biology or BMB electives and cannot be applied to Biology or BMB majors:
  CAS BI 106 Human Anatomy
  CAS BI 114 Human Infectious Diseases: AIDS to Tuberculosis
  CAS BI 119 Sociobiology

Courses fulfilling breadth requirements:
Cell & Molecular
CAS BI 206 Genetics
CAS BI 216 Intensive Genetics

Ecology, Behavior & Evolution
CAS BI 260 Marine Biology
CAS BI 303 Evolutionary Ecology
CAS BI 306 Biology of Global Change

Neurobiology & Physiology
CAS BI 315 Systems Physiology
CAS BI 325 Principles of Neuroscience

Upper Level Lab Courses Offered Spring 2017:
CAS BB 522 Molecular Biology Lab
CAS BI 302 Vertebrate Zoology
CAS BI 303 Evolutionary Ecology
CAS BI 306 Biology of Global Change
CAS BI 315 Systems Physiology
CAS BI 422 Biochemistry II
BIOCHEMISTRY & MOLECULAR BIOLOGY COURSES

**NOTE:** Minimum of three hours per week per credit of lab or field work, not including preparation and evaluation.

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**CAS BB 192: UNDERGRADUATE RESEARCH IN BIOCHEMISTRY AND MOLECULAR BIOLOGY I**

*Prereq:* freshman standing, GPA in biochemistry and molecular biology (BMB) courses of at least 3.0, consent of instructor (laboratory advisor), and approval of application by the BMB Research and Honors Committee.

*2 cr* Not for BMB major credit. Laboratory research under the supervision of a faculty member.

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**CAS BB 292: UNDERGRADUATE RESEARCH IN BIOCHEMISTRY AND MOLECULAR BIOLOGY II**

*Prereq:* sophomore standing, GPA in biochemistry and molecular biology (BMB) courses of at least 3.0, consent of instructor (laboratory advisor), and approval of application by the BMB Research and Honors Committee.

*2 cr* Not for BMB major credit. Laboratory research under the supervision of a faculty member.

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**CAS BB 392: UNDERGRADUATE RESEARCH IN BIOCHEMISTRY AND MOLECULAR BIOLOGY III**

*Prereq:* junior standing, GPA in biochemistry and molecular biology (BMB) courses of at least 3.0, consent of instructor (laboratory advisor), and approval of application by the BMB Research and Honors Committee.

*2 or 4 cr* Two credit option is not for BMB major credit. Laboratory research under the supervision of a faculty member. A maximum of 4 credits earned in undergraduate research courses may be counted toward the BMB major.

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**CAS BB 492: UNDERGRADUATE RESEARCH IN BIOCHEMISTRY AND MOLECULAR BIOLOGY IV**

*Prereq:* senior standing, GPA in biochemistry and molecular biology (BMB) courses of at least 3.0, consent of instructor (laboratory advisor), and approval of application by the BMB Research and Honors Committee.

Laboratory research under the supervision of a faculty member. A maximum of 4 credits earned in undergraduate research courses may be counted toward the BMB major.

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**CAS BB 402: HONORS RESEARCH IN BIOCHEMISTRY AND MOLECULAR BIOLOGY**

*Prereq:* senior standing, GPA in biochemistry and molecular biology (BMB) courses of at least 3.5, consent of instructor (laboratory advisor), and approval of application by the BMB Research and Honors Committee.

**Coreq:** CAS BB 498

Independent laboratory research under the supervision of a faculty member. Minimum of 12 hours per week in the lab, not including preparation and evaluation. Course grade is determined by laboratory performance, oral presentation, written thesis, and defense of the thesis before a committee of three BMB faculty members. Successful completion of both CAS BB 401 and BB 402 may lead to a degree with honors in the major, although only 4 of the credits may count toward the BMB major. Students must also present a research talk at the BMB symposium at the end of the Spring semester of the academic year. No more than 12 credits of undergraduate research may be counted toward the 128 credits required for graduation from CAS.

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**CAS BB 498: HONORS RESEARCH IN BIOCHEMISTRY AND MOLECULAR BIOLOGY SEMINAR II**

*Prereq:* CAS BB 497. For students currently enrolled in the Honors BMB Program.

*1 cr* A one-credit research seminar for students enrolled in Honors Research in BMB (CAS BB 402) or in BA/MA in Biotechnology research (CAS BB 592). Students present at the BMB Symposium. A minimum grade of B+ in this seminar and in CAS BB 401 and BB 402 is required to graduate with Honors in BMB.

**Grading:** Regular attendance required.

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**CAS BB 592: GRADUATE RESEARCH IN BIOCHEMISTRY AND MOLECULAR BIOLOGY**

*Prereq:* admission to the combined BA/MA Biotechnology Program.

**Coreq:** CAS BB 498 is encouraged.

Continuation of the laboratory research project initiated in CAS BB 591, under supervision of a faculty member.Externships are acceptable if approved and overseen by a BMB faculty member or the BMB Director. Minimum of 15 hours per week in the lab, culminating in a presentation at the BMB symposium.
GRS MB 722: ADVANCED BIOCHEMISTRY

Prereq: (BI/CH 422) or (GRS BI/CH 621 & 622) or MB 721 or CH 273.

An advanced treatment of the underlying theories, principles, mechanisms, and chemistry of current biochemical investigation. Selected topics may include enzyme mechanics, protein structure and folding, bioinformatics, signal transduction, nucleic-acid protein interactions, techniques in proteomics, and genetic disease mechanisms.

Lecture

A1  Tolan  Tue,Thu  12:30pm - 1:45pm

Discussion

Wed  4:30pm - 6:15pm

Grading: Exams, homework, discussion.
CELL & MOLECULAR

CAS BI 108: BIOLOGY II
Prereq: High school biology and one semester college chemistry strongly recommended.

For students planning to concentrate in the natural sciences and for premedical students. It is strongly recommended students complete CAS CH 101 (or equivalent) before this course. High school biology is assumed. Cell and molecular biology, Mendelian & molecular genetics, physiology, and neurobiology. Three hours lecture, three hours lab. Carries natural science divisional credit (with lab) in CAS.

Lecture
A1 Loechler, Tolan Mon,Wed,Fri 10:10am - 11:00am
A2 Loechler, Tolan Mon,Wed,Fri 12:20pm - 1:10pm
A3 Spilios Mon,Wed,Fri 2:30pm - 3:20pm

Lab
B1 Mon 2:30pm - 5:15pm D6 Wed 2:30pm - 5:15pm
B2 Mon 2:30pm - 5:15pm D7 Wed 6:30pm - 9:15pm
B3 Mon 6:30pm - 9:15pm D8 Wed 6:30pm - 9:15pm
C1 Tue 8:00am - 10:45am E1 Thu 8:00am - 10:45am
C2 Tue 8:00am - 10:45am E2 Thu 8:00am - 10:45am
C3 Tue 8:00am - 10:45am E3 Thu 8:00am - 10:45am
C4 Wed 8:00am - 10:45am E4 Mon 6:30pm - 9:15pm
C5 Mon 2:30pm - 5:15pm E5 Mon 6:30pm - 9:15pm
C6 Tue 12:00pm - 2:45pm E6 Mon 12:00pm - 2:45pm
C7 Tue 3:30pm - 6:15pm E7 Thu 3:30pm - 6:15pm
C8 Tue 3:30pm - 6:15pm E8 Thu 3:30pm - 6:15pm
C9 Tue 3:30pm - 6:15pm E9 Thu 3:30pm - 6:15pm
D2 Wed 8:00am - 10:45am F1 Fri 8:00am - 10:45am
D3 Wed 8:00am - 10:45am F2 Fri 8:00am - 10:45am
D4 Wed 2:30pm - 5:15pm F3 Fri 8:00am - 10:45am
D5 Wed 2:30pm - 5:15pm

Notes: Meets with BI 116.

Grading: Four hourly exams, lecture 68%, lab 32%

CAS BI 114: HUMAN INFECTIOUS DISEASES: AIDS TO TUBERCULOSIS
Prereq: None

Not for Biology major or minor credit. A study of the world’s major human diseases, their causes, effects on history, pathology, and cures. Principles of immunology. Emphasis on present maladies such as AIDS, herpes, cancer, mononucleosis, tuberculosis, influenza, and hepatitis. This course is appropriate for non-majors and students in the health and paramedical sciences (Sargent College). Three hours lecture, three hours lab. Carries natural science divisional credit (with lab) in CAS.

Lecture
A1 Co Mon,Wed,Fri 9:05am - 9:55am

Lab
B1 Mon,Wed 2:30pm - 4:35pm C3 Tue,Thur 3:30pm - 4:45pm
C1 Tue,Thur 9:30am - 10:45am D1 Mon,Wed 10:10am - 11:25pm
C2 Tue,Thur 2:00pm - 3:15pm D2 Mon,Wed 12:20pm - 2:05pm

Notes: Not for Biology major or minor credit.

Text(s): TBA
Grading: 4 lecture exams; laboratory

CAS BI 206: GENETICS
Prereq: CAS BI 108 and CAS CH 203 or equivalent

Principles of classical, molecular, and evolutionary genetics derived from analytical, molecular, and whole genome cytological evidence in animals, plants, and microorganisms. Three hours lecture, one hour discussion.

Lecture
A1 Celenza Tue,Thur 11:00am - 12:15pm

Discussion
B1 Mon 12:20pm - 1:10pm D1 Wed 8:00am - 8:50am
B2 Mon 12:20pm - 1:10pm D2 Wed 12:20pm - 1:10pm
B3 Mon 1:25pm - 2:15pm D3 Wed 2:30pm - 3:20pm
B4 Mon 2:30pm - 3:20pm D5 Wed 2:30pm - 3:20pm
C1 Tue 8:00am - 8:50am

Notes: Meets with BI 282 and with BI 216 for the first half of the semester.

Text(s): 1) Hartwell et al. Genetics: From Genes to Genome. McGraw-Hill Edition: 5th edition. 2) Recommended, but not required: Solutions Manual for the text. (These will be available through the BU bookstore or as an ebook.)
Grading: 80% avg. of four exam scores given during the semester.
CAS BI 216: INTENSIVE GENETICS
Prereq: CAS BI 108 & BI 203 or equivalents to both, and CAS CH 203 or consent of instructor
Advanced alternative to CAS BI 206, emphasizing depth of coverage, class discussion, and reading research papers. Principles of classical, molecular, and evolutionary genetics derived from analytical, molecular, and whole genome cytological evidence in animals, plants, and microorganisms. Three hours lecture, one hour discussion.
Lecture
A1 Celenza, Loechler Tue,Thu 11:00am - 12:15pm
Thu 6:30pm - 8:15pm*
Discussion
B1 Mon 12:20pm - 1:10pm D2 Mon 11:15am - 12:05pm
C1 Mon 8:00am - 8:50am G1 Wed 11:15am - 12:05pm
D1 Wed 8:00am - 8:50am H1 Wed 12:20pm - 1:10pm
E1 Fri 2:30pm - 3:20pm I1 Fri 3:35pm - 4:25pm

* This block of time is reserved for instructor-led discussion and the giving of exams.

Notes: Meets with BI 206/282

Text(s): 1) Hartwell et al. Genetics: From Genes to Genome, McGraw-Hill. 5th edition. 2) Recommended, but not required: Solutions Manual for the text. (These will be available through the BU bookstore or as an ebook.)

Grading: 80% avg. of four exam scores given during the semester. 20% discussion.

CAS BI 385: IMMUNOLOGY
Prereq: CAS BI 203, CAS BI 206 and junior standing
The constituents and regulation of the mammalian immune system are described at the levels of the gene, protein and cell. Topics include the innate immune system, T and B cell response, immune memory, tolerance, response to pathogens, inflammation, allergy & hypersensitivity, the role of the immune system in cancer. Three hours lecture, one hour discussion.
Lecture
A1 Siggers Mon,Wed,Fri 1:25pm - 2:15pm
Discussion
B1 Tue 8:00am - 8:50am F1 Tue 8:00am - 8:50am
C1 Wed 12:20pm - 1:10pm G1 Wed 11:15am - 12:05pm
D1 Thu 8:00am - 8:50am H1 Wed 12:20pm - 1:10pm
E1 Fri 2:30pm - 3:20pm I1 Fri 3:35pm - 4:25pm


Grading: 3 exams (2 midterms and 1 final) 80%, Discussion/participation: 20%

CAS BI 411: MICROBIOME: OUR INTIMATE RELATIONSHIP WITH MICROORGANISMS
Prereq: CAS BI 203 (or equivalent) and CAS BI 206 (or equivalent) or consent of instructor
There are more bacterial cells inhabiting our bodies than actual human cells. This abundant and diverse population of microbes – referred to as the “microbiome” – colonizes several tissues in our body and plays important roles in maintaining our health. Topics will include the evolutionary, ecological, cellular, molecular and medical aspects of the interactions between animals and the bacterial communities that have evolved with them.
Lecture and Discussion
A1 Frydman Tue,Thu 3:30pm - 4:45pm
Thu 5:00pm - 5:50pm

Notes: Meets with GRS BI 611.

Text(s): Scientific papers will be made available to the students throughout the course via Blackboard.

Grading: Midterm 30%, Oral Presentation and Discussion 20%, Final Exam 40% Participation 10%

CAS BI 422: BIOCHEMISTRY II
Prereq: CAS BI 421 or CAS CH 421 or equivalent
Cell metabolism, with special emphasis on the uptake of food materials, the integration and regulation of catabolic, anabolic, and anaplerotic routes, and the generation and utilization of energy. Lectures include consideration of events in prokaryotic and eukaryotic organisms. Lab exercises are described under BI 528. Three hours lecture, four hours lab, one hour discussion.
Lecture
A1 Kornberg Mon,Wed,Fri 9:05am - 9:55am

Lab & Discussion
B1 Mon 12:20pm - 4:20pm Lab
B2 Mon 5:30pm - 9:30pm Lab
B3 Wed 2:30pm - 6:30pm Lab
B4 Thu 5:30pm - 9:30pm Lab
B5 Wed 12:20pm - 4:20pm Lab
B6 Fri 5:30pm - 9:30pm Lab
C1 Fri 10:10am - 11:00am Discussion
C2 Fri 11:15am - 12:05pm Discussion
C3 Wed 12:20pm - 1:10pm Discussion

Notes: Meets with CAS CH 422 A1, GRS BI/CH 622 A1 and MET CH 422.


Grading: Hour exams, lab, final.
**CAS BB 522: MOLECULAR BIOLOGY LAB**

*Prereq: CAS BI 552*

Introduction to techniques of cellular and molecular biology research, including analysis of DNA and protein molecules by techniques such as plasmid isolation, restriction enzyme digestions, PCR, subcloning, DNA sequence analysis, reporter gene assays, mammalian cell culturing, immunofluorescence, and yeast molecular biology.

*Independent*

A1  Gilmore, Cheng  Tue,Thu  1:00pm - 4:45pm

*Notes: Permission required*

*Text(s):* Xeroxed lab note packet

*Grading: Midterm (20%); final (20%); lab reports (35%); lab participation and preparation (25%).*

**CAS BI 528: BIOCHEMISTRY LABORATORY II**

*Prereq: BI 421 or BI 527*

Emphasizes protein, carbohydrate, nucleic acid, and lipid chemistry. Development and use of modern instrumentation and techniques. Same as CAS CH 528 and laboratory portion of CAS BI/CH 422. Required for BMB students enrolled concurrently in GMS BI 555. Four hours lab, one hour discussion.

*Lecture*

A1  Tolan  Fri  10:10am - 11:00am
A2  Tolan  Fri  11:15am - 12:05pm
A3  Tolan  Wed  12:20pm - 1:10pm

*Lab*

B1  Mon  12:20pm - 4:20pm  B4  Thu  5:30pm - 9:30pm
B2  Mon  5:30pm - 9:30pm  B5  Fri  12:20pm - 4:20pm
B3  Wed  2:30pm - 6:30pm  B6  Fri  5:30pm - 9:30pm

*Notes: Meets with CAS CH 422, CAS BI 422, CAS CH 528, GRS CH 622 and GRS BI 622*

*Grading: Lab preparation, lab reports, final exam.*

**CAS BI 553: MOLECULAR BIOLOGY II**

*Prereq: CAS BI 552, recommended: BI/CH 421/422*

Continuation of CAS BI 552 with emphasis on eukaryotes. General areas of focus include genome organization, mechanisms of gene regulation, and functional genomics. Topics including genomics, chromatic structure, high-throughput technologies and genome editing.

*Independent*

A1  Fuxman Bass  Tue,Thu  9:00am - 10:45am

*Notes: This course is currently being updated on the Link. The dates and times here are correct.*

*Text(s):* TBA

*Grading: two exams, discussion participation, project*

**CAS BI 576: CARCINOGENESIS**

*Prereq: BI 203, BI 206, BI 552*

The course covers multiple aspects of cancer biology with a focus on molecular mechanisms underlying cancer development and progression, and the implications for therapy. Topics include oncogenes, tumor suppressors, apoptosis, angiogenesis, metastasis, mouse models, cancer immunity, immunotherapy, and chemotherapy. Emphasis on current research.

*Lecture*

A1  Gilmore, Tullai  Mon  2:30pm - 4:15pm  Wed  2:30pm - 3:20pm

*Discussion*

B1  Wed  3:35pm - 4:25pm
B2  Wed  4:40pm - 5:30pm
B3  Thu  3:35pm - 4:25pm

*Notes: No credit if CAS BI 327 or GMS BT 520 were taken previously.*


*Grading: Three exams, presentation, participation.*
CAS BI 119: SOCIOBIOLOGY

Prereq: None.

Not for biology major or minor credit. Designed for non-science majors to fulfill natural science divisional requirements. The evolution of animal and human societies; genetics and the development of social behavior; the adaptive significance of social organization; altruism; cooperation; courtship, mate choice, and reproductive behavior; human sociobiology; evolutionary psychology; religion; impact of evolutionary theory on social thought. Three hours lecture plus discussion. Carries natural science divisional credit (without lab) in CAS.

Lecture
A1 Tranielo Tue,Thu 12:30pm - 1:45pm

Discussion
B1 Thu 2:00pm - 2:50pm
B2 Fri 2:30pm - 3:20pm

Notes: Not for biology major or minor credit.

Text(s): Suggested - Alcock, Animal Behavior, 2005; selected readings.

Grading: Three exams; weekly participation in discussion section and lecture/section assignments and projects.

CAS BI 260: MARINE BIOLOGY

Prereq: CAS BI 107 or consent of instructor.


Lecture
A1 Rotjan Mon,Wed,Fri 3:35pm - 4:25pm

Discussion
B1 Wed 10:10am - 11:00am
B2 Wed 4:40pm - 5:30pm
C1 Thu 3:35pm - 4:25pm
C2 Tue 11:15am - 12:05pm
C3 Tue 3:35pm - 4:25pm
E1 Thu 11:15am - 12:05pm
F1 Fri 9:05am - 9:55am
F2 Fri 10:10am - 11:00am

Text(s): Castro & Huber. Marine Biology. 9th Edition

Grading: TBA.

CAS BI 302: VERTEBRATE ZOOLOGY

Prereq: CAS BI 107

Methods and principles of comparative vertebrate zoology. Phylogeny, natural history, adaptation, and taxonomy. Laboratory emphasis on correlation among structural, physiological, and evolutionary features of selected vertebrates by both dissection and experimentation. Field trips. Two hours lecture, six hours lab.

Lecture
A1 Wasserman Tue,Thu 11:00am - 12:15pm

Lab
B1 Tue,Thu 8:00am - 10:45am
B2 Tue,Thu 12:30pm - 3:15pm

Text(s): Pough, et al. Vertebrate Life. 9th edition

Grading: Three exams, lab quizzes and participation.

CAS BI 303: ECOLOGY

Prereq: CAS BI 107 recommended: CAS BI 206

Investigation of ecological processes and patterns at the individual, population, and community level. An evolutionary approach is emphasized. Three hours lecture, three hours lab. One research paper and one day-long field trip required.

Lecture
A1 Rotjan Mon,Wed,Fri 9:05am - 9:55am

Lab
B1 Mon 2:30pm - 5:15pm
C1 Tue 3:30pm - 6:15pm
D1 Wed 2:30pm - 5:15pm
F1 Fri 2:30pm - 5:15pm

Text(s): Molles. Ecology. 6th Edition

Grading: TBA.
CAS BI 306: BIOLOGY OF GLOBAL CHANGE

*Prereq: CAS BI 107, Recommended: CAS CH 101 or CH 171*

The ecological impacts of human activity on the Earth's climate and terrestrial and aquatic ecosystems. Climate change, productivity and land-atmosphere feedbacks. Three hours lecture, three hours lab.

**Lecture**

A1 Finzi Mon, Wed, Fri 10:10am - 11:00am

**Lab**

C1 Tue 12:30pm - 3:15pm

E1 Thu 12:30pm - 3:15pm

**Text(s):** There is no required textbook for this course. Readings will be assigned from the scientific literature and will be available through Blackboard.

**Grading:** Two exams (20%), final exam (30%), lab and participation (30%)

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CAS BI 307: BIOGEOGRAPHY

*Prereq: GE 101 and BI 107*

Examines the spatial distribution of plants and animals from historical, ecological, and analytical perspectives. Environmental and human influences on species distribution, abundance, and diversity are considered, as are changes resulting from past and projected climate change.

**Independent**

A1 Phillips Tue 3:30pm - 6:15pm

**Notes:** Meets with GE 307.

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CAS BI 414: ORNITHOLOGY

*Prereq: CAS BI 107*

Examines the behavior, ecology and morphology, physiology, classification, and evolution of birds. Flight, navigation, migration, territorial courtship, nesting, and parental behavior. Field trips. Three hours lecture, one hour discussion and demonstrations.

**Independent**

A1 Wasserman Tue, Thu 2:00pm - 3:15pm

**Notes:** Meets with GRS BI 614.

**Text(s):** TBA.

**Grading:** TBA.

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CAS BI 423: MARINE BIOGEOCHEMISTRY

*Prereq: CAS ES 144 and (CH 102 or Marine Semester).*

Oceanic nutrient and biogeochemical cycling in the context of the marine response to global change. Links between local and global scales are emphasized. Topics include oceanic productivity, iron limitation, oceanic glacial carbon dioxide budget, biogenic particle fluxes, oceanic glacial-interglacial biogeochemistry.

**Independent**

A1 Fulweiler Tue, Thu 12:30pm - 1:45pm

**Notes:** Meets with GRS BI 623 and ES 423/623.

**Text(s):** TBA.

**Grading:** TBA.

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CAS BI 504: ADVANCED EVOLUTIONARY ANALYSIS

*Prereq: BI 309 or consent of the instructor*

Modern concepts, controversies, and analytical approaches in evolutionary biology. Topics include adaptation, natural and sexual selection, species and species formation, phylogenetics, origin of evolutionary novelty, adaptive radiation, basic population and quantitative genetics, development and evolution. Three hours lecture, one hour discussion.

**Lecture**

A1 Mullen Tue, Thu 11:00am - 12:15 pm

**Discussion**

B1 Mullen Wed 2:30pm - 3:20pm

**Notes:** This course will have a delayed posting on the Link. If not currently listed, please check back.

**Text:** Readings will be available through Blackboard.

**Grading:** Midterm Exams (50%); Discussion (25%); Paper (25%)
CAS BI 506: PHENOTYPIC PLASTICITY
Prereq: CAS BI 107 and (BI 303 or BI 309 or BI 315 or BI 410) or consent of instructor

Explores the flexible phenotype as a product of development and target of natural selection, and addresses the role of plasticity in ecological interactions and evolutionary diversity. Topics include evolution of plasticity, mechanisms underlying plasticity, and role of plasticity in ecology, diversification of life, and conservation in a changing environment. Three hours lecture, one hour discussion.

Lecture
A1  Warkentin  Mon,Wed,Fri  9:05am - 9:55am

Discussion
B1  Wed  10:10am - 11:00am

Notes: This is a graduate course. Highly motivated, prepared undergraduates are also welcome, but should note the additional work required. Contact instructor for more information.


Grading: 20% participation, 30% project, 50% midterm and final exams

CAS BI 542: NEUROETHOLOGY
Prereq: CAS BI 325, CAS NE 203, or CAS BI 563 or consent from instructor.

The purpose of this course is to link neurobiology to behavioral ecology and the sensory stimulus properties of the natural environment. We use a textbook in the first half of the course; in the second half we use student-generated research topics and develop these into multi-disciplinary team essays. Past topics have included courtship in bowerbirds and music frogs, and hunting in rattlesnakes and sharks. The three hour lecture and one hour discussion periods are devoted to student presentations and class discussions.

Lecture and Discussion
A1  Atema  Tue,Thu  9:30am - 10:45am
Wed  2:30pm - 3:20pm

Notes: Meets with CAS NE 542.


Grading: Two midterm exams (20% each) and written and oral final essay (60%).

CAS BI 543: GLOBAL ECOLOGY
Prereq: Senior standing and previous undergraduate ecology or environmental science courses or permission of instructor.

Explores the many threads that link and exchange throughout the biosphere. Themes include life systems as a geological force; bacterial as a global superorganism; the major impacts of algae and symbiosis; climate change updates; and examples of humans in various countries/cultures working toward a sustainable human-biosphere relationship. Three hours lecture.

Lecture and Discussion
A1  Zook  Tue  3:30pm - 6:15pm

Notes: Occasionally, sessions are held outside the classroom.

Text: Original research articles and reviews.

Grading: Based on periodic written reflections to assigned readings; active participation especially in discussions; project presentation; final exam.

CAS BI 530: FOREST ECOLOGY
Prereq: CAS BI 107 and (CAS BI 303 or CAS BI 306), or consent of instructor

The major biotic and abiotic factors influencing forest ecosystem composition, structure, and function. Role of solar radiation, hydrology, soils, succession, and management of forest ecosystems. Includes New England case study. Three hours lecture plus discussion.

Lecture and Discussion
A1  Templer  Tue, Thu  11:00am - 12:15pm
Fri  10:10am - 11:00am

Notes: Meets with GE 530.


Grading: TBA.
CAS BI 582: ADVANCED TOPICS IN EVOLUTION

Prereq: Consent of instructor. Open to seniors in biology.

[2 cr] We will meet for two hours each week to discuss topics at the forefront of evolutionary biology. Topics vary from year to year and readings are drawn from recent primary literature augmented by classical literature that puts the current work in the broader context of major questions in evolution.

Independent
S1 Schneider Arranged

Text(s): Readings from the primary literature available through Blackboard.

Grading: Preparation and participation in discussion.
CAS BI 106: HUMAN ANATOMY

Prereq: CAS BI 105 or equivalent

Not for Biology major or minor credit. Intensive preprofessional course for students whose programs require anatomy. Gross structure of the human body; skeletal, muscular, nervous, respiratory, circulatory, digestive, urinary, and reproductive systems. Three hours lecture, two hours lab (lab requires dissection). Carries natural science divisional credit (with lab) in CAS.

Lecture
A1 Co Mon,Wed,Fri 11:15am - 12:05pm

Lab
C1 Tue 9:00am - 10:45am
C2 Tue 1:30pm - 3:15pm
C3 Tue 3:30pm - 5:15pm
C4 Tue 6:30pm - 8:15pm
D1 Wed 8:00am - 9:45am
D2 Wed 12:20pm - 2:05pm
D3 Wed 2:30pm - 4:15pm
D4 Wed 4:30pm - 6:15pm
E1 Thu 9:00am - 10:45am
E2 Thu 1:30pm - 3:15pm
E3 Thu 3:30pm - 5:15pm
F1 Fri 12:20pm - 2:05pm
F2 Fri 2:30pm - 4:15pm

Notes: Not for Biology major or minor credit

Text(s): TBA.

Grading: 3 midterm lecture exams; 1 cumulative lecture final, 2 laboratory practical exams

CAS BI 230: BEHAVIORAL ENDOCRINOLOGY

Prereq: (BI 108 or NE 102) and sophomore standing.

Hormonal control of reproductive and parental behaviors, social affiliation, aggression, fluid homeostasis, biological rhythms including seasonal reproduction, stress, learning and memory, affective disorders and steroid abuse. Three hours lecture, one hour discussion.

Lecture and Discussion
A1 DiBenedictis Mon, Wed, Fri 12:20pm - 1:10pm
Fri 1:25pm - 2:15pm

Notes: Meets with NE 230. This course will have a delayed posting on the Link. If not currently listed, please check back.


Grading: Two midterms and a final exam (20% each), discussion/presentation participation (20%), quizzes (20%).

CAS BI 315: SYSTEMS PHYSIOLOGY

Prereq: (CAS BI 108 or ENG BE 209) and CAS CH 102 or equivalent.

An introduction to physiological principles applied across all levels of organization (cell, tissue, organ system). Preparation for more advanced courses in physiology. Topics include homeostasis and neural, muscle, respiratory, cardiovascular, renal, endocrine, gastrointestinal, and metabolic physiology. Three hours lecture, three hours lab.

Lecture
A1 Widmaier Tue,Thu 11:00am - 12:15pm

Lab
B1 Mon 2:30pm - 5:15pm
B2 Mon 6:30pm - 9:15pm
B3 Tue 12:30pm - 3:15pm
C1 Tue 8:00am - 10:45am
C2 Tue 12:30pm - 3:15pm
C3 Tue 12:30pm - 3:15pm
C4 Tue 6:30pm - 9:15pm
C5 Tue 6:30pm - 9:15pm
D1 Wed 8:00am - 10:45am
D2 Wed 12:20pm - 2:05pm
D3 Wed 2:30pm - 4:15pm
D4 Wed 4:30pm - 6:15pm
E1 Thu 8:00am - 10:45am
E2 Thu 12:30pm - 3:15pm
E3 Thu 12:30pm - 3:15pm
E4 Thu 6:30pm - 9:15pm
E5 Thu 6:30pm - 9:15pm
F1 Fri 8:00am - 10:45am
F2 Fri 12:20pm - 2:05pm
F3 Fri 2:30pm - 4:15pm


Grading: Two hourly exams, final exam, lab quizzes and write ups, cumulative lab final.

CAS BI 325: PRINCIPLES OF NEUROSCIENCE

Prereq: CAS BI 203 or consent of instructor.

Fundamentals of the nervous system, emphasizing synaptic transmission; hierarchical organization; autonomic nervous system; mechanisms of sensory perception; reflexes and motor function; biorhythms; and neural mechanisms of feeding, mating, learning, and memory. Three hours lecture, one hour discussion.

Lecture
A1 Cruz-Martin Tue,Thu 2:00pm - 3:15pm

Discussion
B1 Mon 3:35pm - 4:25pm
B2 Wed 3:35pm - 4:25pm
B3 Thu 3:35pm - 4:25pm


Grading: Two midterms and a final exam.
CAS BI 525: BIOLOGY OF NEURODEGENERATIVE DISEASES
Prereq: CAS NE 102 or CAS BI 203, and CAS NE 203 or CAS BI 325

This course focuses on understanding the molecular mechanisms that are at the basis of neurodegenerative diseases and on their impact and relevance in clinical diagnosis and treatment. Neurodegenerative diseases like Alzheimer’s disease, Parkinson’s disease, Amyotrophic Lateral Sclerosis, Huntington Disease and Cruetzfeldt-Jacob disease are becoming more and more common since people are more exposed to pathogenic agents (as in Cruetzfeldt-Jacob disease and Mad Cow disease) or just encounter these diseases as a result of aging (like Alzheimer’s or Parkinson’s disease). Although very different from one another, these diseases share common mechanisms and features leading to neuronal death, including protein misfolding and aggregation, oxidative stress, impaired protein degradation, and apoptosis. This course will study how these molecular pathways define each disease, contributing to neurodegenerative phenomena. Relevance will be given to Alzheimer’s disease.

Independent
A: Pastorino Mon, Wed, Fri 9:05am - 9:55am
   Wed 10:10am - 11:00am

Notes: Meets with CAS NE 525.

Text(s): Detailed handouts, powerpoint presentation, PDF files on course website

Grading: 2 midterm exams 46%; final exams 24%; assignments 15%; paper presentation 15%

CAS BI 542: NEUROETHOLOGY
Prereq: CAS BI 325, CAS NE 203, or CAS BI 563 or consent from instructor.

The purpose of this course is to link neurobiology to behavioral ecology and the sensory stimulus properties of the natural environment. We use a textbook in the first half of the course; in the second half we use student-generated research topics and develop these into multi-disciplinary team essays. Past topics have included courtship in bowerbirds and music frogs, and hunting in rattlesnakes and sharks. The three hour lecture and one hour discussion periods are devoted to student presentations and class discussions.

Lecture and Discussion
A: Atema Tue, Thu 9:30am - 10:45am
   Wed 2:30pm - 3:20pm

Notes: Also offered as CAS NE 542.


Grading: Two midterm exams (20% each) and written and oral final essay (60%).

CAS BI 582: NEUROBIOLOGY OF BRAIN DISORDERS
Prereq: Suggested BI 203 and BI 325

[2 cr] Not for Biology major or minor credit unless two semesters of different topics are taken. This course reviews recent topics and readings in the field of neurodegeneration that span disorders affecting neurodevelopment, learning and memory and aging. Specifically, the course will probe cellular and molecular mechanisms underlying cell death. In addition, the class will probe commonalities of the diseases, genetic risk factors and the usefulness and limitations of animal models. Also, we will discuss different interdisciplinary approaches that include molecular genetics tools in mice, biochemistry, cell biology and electrophysiology in addressing biomedical-related problems in neuroscience.

Lecture
H: Ho Fri 10:10am - 11:55am

Text(s): Scientific papers will be posted to the blackboard website.

Grading: Participation 50%, Oral presentation 50%

CAS BI 599: PHYSIOLOGY OF THE SYNAPSE
Prereq: Junior standing; CAS BI 325 or CAS BI 445 or CAS BI 481 are recommended.

Neuron development and maturation, synapse formation, structure and molecular components of synapses, synaptic transmission, synaptic plasticity, neurotransmitter receptors, cellular basis for learning and memory, synaptic pathology in neurological diseases. Two hours lecture, two hours paper presentation and discussion.

Lecture and Paper Presentation/Discussion
A: Man Fri 10:10am - 11:55am
   Wed 10:10am - 11:55am

Notes: This course will have a delayed posting on the Link. If not currently listed, please check back.

Text(s): Synapses (2003) by W. Maxwell Cowan and Thomas C. Südhof

Grading: Midterm exam; final exam; class participation/participation
**MET BI 106: HUMAN ANATOMY**
*Prereq: MET BI 105*

Not for biology major or minor credit. Gross structure of the human body: skeletal, muscular, nervous, respiratory, circulatory, digestive, urinary, and reproductive systems. Laboratory course. Three hours lecture, two hours lab.

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<td>D1 Thu 6:00pm - 8:00pm</td>
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**Notes:** Not for Biology or BMB major credit

**MET BI 108: BIOLOGY II**
Assumes year of high school biology and chemistry. For premedical students and students who plan to concentrate in the natural sciences. Required of biology concentrators. It is recommended that MET CH 101 and CH 102 be taken prior to or concurrently with this sequence. Each course has three hours lecture and three hours lab. Course examines cells, genetics, development, physiology, and neurobiology.

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**MET BI 206: GENETICS**
*Prereq: MET BI 108 or equivalent*

MET CH 203 recommended. Principles of heredity as derived from genetic, biochemical, and cytological evidence in animals, plants, and microorganisms. Three hours lecture, one hour discussion.

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<td>Tue 7:30pm - 8:30pm</td>
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**MET BI 303: ECOLOGY**
*Prereq: MET BI 107*

Basic principles of ecology, population dynamics and behavior, interrelationships of plants and animals and their physical and chemical environment. Structure and function of ecosystems and community dynamics. Laboratory course. Three hours lecture, three hours lab.

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**MET BI 315: SYSTEMS PHYSIOLOGY**
*Prereq: MET BI 108 & MET BI 203*

An introduction to the basic physiological principles applied across all levels of organization (cell, tissue, organ system) and intended to prepare the student for more advanced courses in physiology. Topics include homeostasis, neural, muscle, cardiopulmonary, renal, endocrine, and reproductive physiology. Three hours lecture, three hours lab.

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<td>C1 Seliga Wed 6:00pm - 8:45pm</td>
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**Notes:** Permission required for non-MET students.

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Juniors and seniors can take one MET course per semester. All other students must request permission from Steve Jarvi, Associate Dean for Student Life, at sjarvi@bu.edu.
RESEARCH & READINGS

NOTE: Minimum of three hours per week per credit of lab or field work, not including preparation and evaluation. No more than 12 credits of undergraduate research may be counted toward the 128 credits required for graduation from CAS.

CAS BI 192: UNDERGRADUATE RESEARCH IN BIOLOGY I
Prereq: freshman standing, consent of instructor, and completed application.

[2 cr] Not for biology major or minor credit. Research in biological science for students at the freshman level. Students design and implement a research project with a faculty member.

CAS BI 292: UNDERGRADUATE RESEARCH IN BIOLOGY II
Prereq: sophomore standing, consent of instructor, and completed application.

[2 cr] Not for biology major or minor credit. Research in biological science for students at the sophomore level. Students design and implement a research project with a faculty member.

CAS BI 392: UNDERGRADUATE RESEARCH IN BIOLOGY III
Prereq: junior standing, consent of instructor, and completed application.

[2 or 4 cr] Two credit option not for biology major or minor credit. Research in biological science for students at the junior level. Students design and implement a research project with a faculty member. One 4 credit research course can count toward the 3-lab requirement and fulfill an upper level elective. A second 4 credit research course can fulfill an upper level elective.

CAS BI 492: UNDERGRADUATE RESEARCH IN BIOLOGY IV
Prereq: junior or senior standing, consent of instructor, and completed application.

Research in biological science for students at the senior level. Students design and implement a research project with a faculty member. Research topic must be defined at the time of registration. Course grade is to be determined by laboratory performance and written report. One 4 credit research course can count toward the 3-lab requirement and fulfill an upper level elective. A second 4 credit research course can fulfill an upper level elective.

CAS BI 402: HONORS RESEARCH IN BIOLOGY
Prereq: senior standing, cumulative GPA in biology of at least 3.5, and approval of the Department of Biology Honors Committee.

Mentored laboratory or field research with a faculty member of the Biology Department leading to graduation with Honors in Biology. One 4 credit research course can count toward the 3-lab requirement and fulfill an upper level elective. A second 4 credit research course can fulfill an upper level elective.

CAS BI 172: READINGS IN BIOLOGY I
Prereq: freshman standing, consent of instructor, and completed application.

[2 cr] Not for biology major or minor credit. Library research on a well-defined topic in biological sciences, chosen in conjunction with a faculty member. Individual conferences and discussion with the faculty member are required as well as a paper presentation.

CAS BI 272: READINGS IN BIOLOGY II
Prereq: sophomore standing, consent of instructor, and completed application.

[2 cr] Not for biology major or minor credit. Library research on a well-defined topic in biological sciences, chosen in conjunction with a faculty member. Individual conferences and discussion with the faculty member are required as well as a paper presentation.

CAS BI 372: READINGS IN BIOLOGY III
Prereq: junior standing, consent of instructor, and completed application.

[2 cr] Not for biology major or minor credit. Library research on a well-defined topic in biological sciences, chosen in conjunction with a faculty member. Individual conferences and discussion with the faculty member are required as well as a paper presentation.

CAS BI 472: READINGS IN BIOLOGY IV
Prereq: junior or senior standing, cumulative GPA in biology of at least 3.0, and consent of instructor.

[2 cr] Not for biology major or minor credit. Intensive library research on a well-defined subject, followed by individual conferences and discussion with a faculty member. May be taken as preparation for CAS BI 401, 402, 491, and 492.

CAS BI 498: HONORS RESEARCH IN BIOLOGY SEMINAR
Prereq: CAS BI 107 & CAS BI 108 and at least two additional biology courses. For students currently enrolled in or intending to apply to the Honors Biology Program

[2 cr] A 2-credit weekly research seminar for students in the Honors in Biology Program. A minimum grade of B+ and a written assignment based on a research topic in one of the seminars is required to graduate with honors. Juniors enrolled in BI 497 or 498 must have a current faculty research mentor (See the Biology website or contact the Undergraduate Program Coordinator in the Department of Biology).

Notes: A minimum grade of B+ is required to graduate with Honors in Biology.

Grading: TBA.

A1 Wasserman Arranged
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