

Half Courses

Spring 2020

Enrollment deadlines

Check-in	Jan 6-27
Enrollment	Jan 27-31
Add/drop no fee	Feb 10
Last day to add	Mar 9
Last day to drop, no WD	Mar 23



**GSAS Academic
Calendar 2019-20**



**16 credits for full-
time student status**



Contact
617-432-0605
dms_courses@hms.harvard.edu

BCMP 213 Behavioral Pharmacology

Jack Bergman, Brian Kangas

BCMP 234 Cellular Metabolism and Human Disease

Thomas Michel, Bruce Levy, David Cohen, D. Branch Moody, Joseph Loscalzo, Raul Mostoslavsky, Sudha Biddinger, Marcia Haigis, Paul Schmidt, Lisa Henske, Joseph Majzoub, Mark Puder, Lynn Bry, Erica Brynne McAuliffe Esrick

BCMP 250 Biophysical and Biochemical Mechanisms of Protein Function

Andrew Kruse, Stephen Blacklow, Phil Cole, Eric Fischer

CELLBIO 201 Principles of Cell Biology

Adrian Salic, Radhika Subramanian, Susan Shao, David Pellman, Danesh Moazed, Daniel Finley, David Van Vactor, Malcolm Whitman, Brendan Manning, Joan Brugge, Timothy Mitchison, Wade Harper, Senthil Muthaswamy, Alan Brown, Sanja Sever, John Hanna, Ed Chouchani, Pere Puigserver, Taru Muranen, Elaine Elion, Steve Gygi, Jennifer Waters, Marc Kirschner, Jack Szostak

CELLBIO 207 Development, Stem Cells, and Regeneration

Andrew Lassar, John G. Flanagan, Guillermo Garcia-Cardena, Vandana Gupta, Jordan Kreidberg, Jessica Lehoczky, Sean Megason, Olivier Pourquié

CELLBIO 211 Molecular and Systems Level Cancer Cell Biology

Peter Sicinski

GENETIC 216 Advanced Topics in Gene Expression

Fred Winston, Robert Kingston, Stephen Buratowski

GENETIC 349 Current Tools for Gene Analysis

Neena Haider

HBTM 200 Pathology of Human Disease

Scott Lovitch

IMMUN 202 Immune and Inflammatory Diseases

Filip Swirski, Mikael Pittet

IMMUN 203 Advances in Immunology

Daniel Lingwood, Stefani Spranger

IMMUN 204 Critical Readings for Immunology

Duane Wesemann

IMMUN 301 Immunology Seminar

Shiv Pillai, Galit Alter



MICROBI 201 Molecular Biology of the Bacterial Cell

David Rudner, Thomas Bernhardt, Simon Dove

MICROBI 210 Microbial Sciences: Chemistry, Ecology, and Evolution

Michael Gilmore

MICROBI 213 Social Issues in Biology

Jonathan Beckwith, Stephen Lory, Richard Born, David Glass, Nadine Vincenten, Emily Hamilton, Sarah Richardson, Nancy Hopkins, Kayla Davis

NEUROBIO 209 The Neurobiology of Disease

Ed Kravitz, Patricia Musolino, Beth Stevens

NEUROBIO 215B The Discipline of Neuroscience

Lisa Goodrich, John Assad, Taralyn Tan, Sandeep Robert Datta, Michael Do, David Corey, Rachel Wilson, Richard Born, Jan Drugowitsch, Christopher Harvey, Mark Andermann, Beth Stevens, Dan Polley

SHBT 202 Clinical Aspects of Speech and Hearing

Konstantina Stankovic

SHBT 205 Neural Coding and Perception of Sound

Joshua McDermott, Daniel Polley, Bertrand Delgutte, M. Christian Brown, Anne Takesian, Yoojin Chung, Evelina Fedorenko, John Gabrielli

VIROLOGY 201 Virology

Ben Gewurz, James Cunningham, Aaron Schmidt, Joe Sodroski, Dan Kuritzkes, Sun Hur



Biological Chemistry & Molecular Pharmacology

BCMP 213 Behavioral Pharmacology

Jack Bergman, Brian Kangas

4 units. Enrollment limited to 12.

Tue, 3:00p - 5:45p

Introduction to behavioral pharmacology of CNS drugs (e.g., psychomotor stimulants, antischizophrenics, opioid analgesics, antianxiety agents); seminar format with emphasis on behavioral methodology (i.e., model and assay development) and pharmacological analysis (i.e., receptor selectivity and efficacy); attention to tolerance, drug dependence/addiction/treatment, and basic behavioral processes.

Course Notes Offered jointly with the Medical School as BP 719.0. One year of biology or chemistry or one year of psychology recommended.

Meeting Dates Jan 28 - May 12

Location Sever 305, Cambridge campus

Course Heads Jack Bergman, jack_bergman@hms.harvard.edu, Brian Kangas, bkangas@mclean.harvard.edu

BCMP 234 Cellular Metabolism and Human Disease

Thomas Michel, Bruce Levy, David Cohen, D. Branch Moody, Joseph Loscalzo, Raul Mostoslavsky, Sudha Biddinger, Marcia Haigis, Paul Schmidt, Vijay Sankaran, Lisa Henske, Joseph Majzoub, Mark Puder, Lynn Bry

4 units.

MWF, 9:00a - 10:30a

Cellular and organismal metabolism, with focus on interrelationships between key metabolic pathways and human disease states. Genetic and acquired metabolic diseases and functional consequences interactive lectures and critical reading conferences are integrated with clinical encounters.

Course Notes Enrollment may be limited. Open to all HILS graduate students with adequate preparation in cell biology and biochemistry.

Recommended Prep For undergraduates only: Knowledge of introductory biochemistry, genetics, and cell biology required (MCB 63 or MCB 60 or LIFESCI50, and MCB 64 or equivalent) plus one year of organic chemistry (Chem 17/27 or 20/30).

Meeting Dates Jan 27 - May 8

Location Cannon Room, Building C

Course Head Thomas Michel, thomas_michel@hms.harvard.edu

Curriculum Fellow Brittany Michel, brittany_michel@hms.harvard.edu



BCMP 250 Biophysical and Biochemical Mechanisms of Protein Function

Andrew Kruse, Stephen Blacklow, Phil Cole, Eric Fischer

4 units. Enrollment limited to 45. Instructor consent required.

T/Th, 10:30a - 12:00p

Biophysical and Biochemical Mechanisms of Protein Function focuses on the molecular mechanisms that underlie essential biochemical processes such as signal transduction. Major topics include biochemical thermodynamics and conformational equilibria, protein structure and folding, receptor pharmacology, allostery, and enzymatic mechanisms of signaling. The course includes both content lectures and research frontiers seminars focused on current research in biochemistry with an emphasis on signal transduction in therapeutically relevant pathways.

Recommended Prep A foundational biochemistry course is recommended as a prerequisite (we expect students to have a solid understanding of the core concepts in biochemistry and molecular biology, including knowledge of the amino acids and their properties as well as the central dogma).

Meeting Dates Jan 28 - Apr 30

First Meeting TMEC 246 (Walter Amphitheater)

Course Head Andrew Kruse, andrew_kruse@hms.harvard.edu

Additional Instructors Stephen Blacklow, stephen_blacklow@hms.harvard.edu, Phil Cole, pacole@bwh.harvard.edu, Eric Fischer, eric_fischer@hms.harvard.edu

Curriculum Fellow Madhvi Venkatesh, madhvi_venkatesh@hms.harvard.edu

Cell Biology

CELLBIO 201 Principles of Cell Biology

Adrian Salic, Radhika Subramanian, Susan Shao, David Pellman, Danesh Moazed, Daniel Finley, David Van Vactor, Malcolm Whitman, Brendan Manning, Joan Brugge, Timothy Mitchison, Wade Harper, Senthil Muthaswamy, Alan Brown, Sanja Sever, John Hanna, Ed Chouchani, Pere Puigserver, Taru Muranen, Elaine Elion, Steve Gygi, Jennifer Waters, Marc Kirschner, Jack Szostak

4 units.

MWF, 10:30a - 12:00p

This is a graduate level course in which students examine both fundamental and novel concepts and methodologies in cell biology with expert faculty from the field. Through content lectures, methods lectures, and discussion sections, students will explore a broad range of topics including: the molecular basis of cellular organization, subcellular compartmentalization, protein trafficking, chromosome organization and epigenetics, regulated ubiquitin-proteasome pathways, cell cycle regulation, cell death, signal transduction, phase separation, and more. By the end of this course, students should be able to:

- Evaluate primary scientific literature from a broad range of topics in cell biology;
- Identify current questions in cell biology and the co-evolving methodologies used to address those questions;



- Design appropriate experimental approaches to address hypotheses related to cell biology.

Course Notes Methodological focus on current approaches in cell biology including quantitative tools. Emphasis on experimental design. Offered jointly with the Medical School as CB 713.0.

Recommended Prep Basic knowledge in biochemistry, genetics, and cell biology.

Meeting Dates Jan 27 - May 1

Location Cannon Room

Class Notes Please note that mandatory methods lectures will be held in addition to regular classes on 2/4, 2/18, 3/24, and 4/14, from 3:30p - 5:00p.

Course Head Adrian Salic, adrian_salic@hms.harvard.edu

Curriculum Fellow Saoirse McSharry, saoirse_mcsharry@hms.harvard.edu

CELLBIO 207 Development, Stem Cells, and Regeneration

Andrew Lassar (course director), John G. Flanagan, Guillermo Garcia-Cardena, Vandana Gupta, Jordan Kreidberg, Jessica Lehoczy, Sean Megason, Olivier Pourquié

4 units. Enrollment limited to 12. Instructor consent required.

Mon, 2:00p - 4:00p, Wed, 2:30p - 4:30p

CB207 is evenly divided between lectures and conference sessions which cover the principals that guide vertebrate development and stem cell maintenance in various renewing tissues; in addition, we discuss how these principals can be leveraged to generate cells/tissues for regenerative biology or disease modeling in vitro. Specific topics include a molecular dissection of the signaling pathways, gene regulatory networks, and epigenetic mechanisms that control primary axis formation and regional specification, establishment of cell fate, homeotic genes and patterning, cell migration and cell-cell signaling, organoid models of nervous system development and their application, axon development and regeneration, neuromuscular development and mechanistic insights for human birth defects, skeletal muscle stem cells in aging and disease, morphogenesis of branched tubular systems, vasculogenesis, biomechanical regulation of developmental processes, limb development and regeneration, stem cell maintenance in various renewing tissues, germ cells and pluripotency, and directed differentiation of ES and iPS cells for regeneration and disease modeling. We will discuss how state of the art technologies in iPS organoids, cell lineage labeling, genetic manipulation, and genome wide epigenomic/transcriptomic analyses can be employed to study organ development, stem cells and regeneration.

Students employ the knowledge gained by lectures and conference sessions to identify two interesting new research goals in either vertebrate development, stem cell, or regenerative biology and present research proposals to achieve these goals. Thus, a goal of this course is for students to learn how to synthesize the literature to come up with their own novel research ideas, and develop a strategy to investigate their hypotheses.

Course Notes Offered jointly with the Medical School as CB 710.0. Includes lectures and conference sessions in which original literature is discussed in depth. Short research proposals are required in lieu of exams.



Meeting Dates Jan 27 - May 13

First Meeting Location Warren Alpert 563

Course Heads Andrew Lassar, andrew_lassar@hms.harvard.edu, John Flanagan, flanagan@hms.harvard.edu

CELLBIO 211 Molecular and Systems Level Cancer Cell Biology

Peter Sicinski

4 units. Enrollment limited to 32. Instructor consent required.

Examines the molecular basis of cancer formation including topics such as cancer epigenetic, tumor heterogeneity, systems biology proteomic approaches to study cancer, immune therapies in cancer, and therapeutic development.

Course Notes Offered in alternate years with Cell Biology 212. Offered jointly with the Medical School as CB 704.0.

Recommended Prep General knowledge of biochemistry, molecular genetics, and cell biology.

Meeting Dates Jan 27 - Apr 29

Location TBA

Course Head Peter Sicinski

Curriculum Fellow Jelena Patrnogic, jelena_patrnogic@hms.harvard.edu

Genetics

GENETIC 216 Advanced Topics in Gene Expression

Fred Winston, Robert Kingston, Stephen Buratowski

4 units. Enrollment limited to 16. Instructor consent required.

Tue, 3:30p - 6:30p

This course covers different topics in gene regulation, covering genetic, genomic, biochemical, and molecular approaches. A small number of topics are discussed in depth, using the primary literature. Topics range from prokaryotic transcription to eukaryotic development.

Course Notes Offered jointly with the Medical School as GN 703.0.

Recommended Prep Genetics 201 and BCMP 200 or equivalent. All students taking Genetics 216 should read and be prepared to discuss the papers for the first meeting. The readings can be downloaded from the course website.

Dates Jan 28 - May 5

Location TMEC 130

Course Head Fred Winston, winston@genetics.med.harvard.edu

Course Instructors Robert Kingston, kingston@molbio.mgh.harvard.edu, Stephen Buratowski, steve_buratowski@hms.harvard.edu



GENETIC 349 Current Tools for Gene Analysis

Neena Haider

4 units. Enrollment limited to 15. Instructor consent required.

Tue/Thu, 10:00a – 12:00p

The goal of this course is to apply a number of genomic tools over the course of a semester-long guided research project, learn how to utilize the complimentary statistical tools for analysis, and to discuss the strategies and final data presentation from published papers. Using example sequence datasets, students will analyze differential gene expression and changes. The class will explore the featured tool, related statistical methods together in an interactive manner followed by a discussion of the tools/stats as seen in published work. After taking this class students will be able to apply each online tool to their own research and will be able to identify and use new genomic resources to address future research directions.

Course Notes Students will need to bring a laptop to class each day.

Recommended Prep Genetics 201 or with permission from the instructor.

Meeting Dates Feb 4 - Apr 9

Location TMEC 445

Course Head Neena Haider

Curriculum Fellow Kale Hartmann, kale_hartmann@hms.harvard.edu

Human Biology & Translational Medicine

HBTM 200 Pathology of Human Disease

Scott Lovitch

4 units.

Tue, 9:00a - 11:00a, Thu, 9:00a - 1:00p

This course provides a comprehensive overview of human pathology with emphasis on mechanisms of disease and modern diagnostic technologies. Topics include (1) general mechanisms of disease (inflammation, infection, immune injury, host response to foreign materials, transplantation, genetic disorders and neoplasia), (2) pathology of major organ systems, and (3) review of diagnostic tools from invasive surgical pathology to non-invasive techniques such as diagnostic imaging and molecular pathology. The objectives of this course are achieved through a set of integrated lectures and laboratories, as well as a student-driven term project leading to a formal presentation on a medical, socioeconomic, or technological issue in human pathology.

Course Notes Enrollment may be limited. Jointly offered with HMS as HT035.0.

Prerequisites General biology.

Meeting Dates Feb 4 - May 14

Location Cannon Room, Building C

Course Head Scott Lovitch, slovitch@bwh.harvard.edu



Immunology

IMMUN 202 Immune and Inflammatory Diseases

Filip Swirski, Mikael Pittet

4 units.

T/Th, 1:30p - 4:00p

IMMUN 202 builds on IMMUN 201 and explores fundamental principles of immunology in the context of immune and inflammatory diseases. Through a series of lectures and discussion, students will survey a broad range of diseases in which the immune system is essential. Topics will include not only diseases that mobilize classical immunity but also conditions to which we now know the immune systems contributes. Students will use oral and written exercises to learn how to evaluate and synthesize major concepts and tools germane to immunology's relationship to bioscience.

Course Notes Offered jointly with the Medical School as IM 712.0.

Prerequisite Immunology 201 or its equivalent.

Meeting Dates Jan 28 - May 7

Location Modell 100A

Course Heads Filip Swirski, fswirski@mgh.harvard.edu, Mikael Pittet, mpittet@mgh.harvard.edu

IMMUN 203 Advances in Immunology

Daniel Lingwood, Stefani Spranger, Shiv Pillai, Bruce Walker, Facundo Batista, Michael Birnbaum, Galit Alter, Brian Bryson, Alex Balazs, Sebastian Lourido, Doug Kwon, Ulrich von Andrian

4 units.

Tue, 2:30p – 3:30p lectures

Thu, 3:00p - 4:00p discussion sections

Semester long course, intended for graduate students at Harvard and MIT, jointly taught by Harvard and MIT faculty members at the Ragon Institute of MGH, MIT, and Harvard.

Class Notes Lectures will be held at the Ragon Institute on Tuesdays and are open to auditors. Discussion sections will be held on Thursdays with enrollment limited to 20.

Recommended Prep Students should have completed or be concurrently enrolled in a basic immunology course.

First Meeting Tue, Feb 4

Location Ragon Institute Auditorium

Course Heads Daniel Lingwood, dlingwood@mgh.harvard.edu, Stefani Spranger, spranger@mit.edu



IMMUN 204 Critical Readings for Immunology

Duane Wesemann

4 units.

Thu, 10:00a - 1:00p

Original research articles from fields including immunology, biochemistry, genetics, and cell and developmental biology will be critically analyzed in an intensive small group format. Grading will be based on class participation and oral presentations.

Course Notes Required for first-year immunology students, open to second-year immunology students. No auditors. Offered jointly with the Medical School as IM 703.0.

Meeting Dates Jan 30 - Apr 30

Location Modell 100A

Course Head Duane Wesemann, dwesemann@bwh.harvard.edu

IMMUN 301 Immunology Seminar

Shiv Pillai, Galit Alter

4 units. Enrollment limited to 20. Instructor consent required.

Wed, 12:00p - 1:00p, 2:30p - 4:00p

Gives students exposure to research topics in Immunology. Students prepare for the weekly seminar through readings, discussions, and preparing brief write-ups. These discussions are facilitated by members of the Committee on Immunology.

Course Note Required for, and limited to, first-year Immunology graduate students. All others will be evaluated for enrollment on a case by case basis.

Meeting Dates Jan 29 - Apr 22

Location Modell 100A

Course Head Shiv Pillai, pillai@helix.mgh.harvard.edu

Microbiology

MICROBI 201 Molecular Biology of the Bacterial Cell

David Rudner, Thomas Bernhardt, Simon Dove

4 units.

Tue, Th 10:00a - 12:00p

This course is devoted to bacterial structure, physiology, genetics, and regulatory mechanisms. The class consists of lectures and group discussions emphasizing methods, results, and interpretations of classic and contemporary literature.

Meeting Dates Jan 28 - Apr 28

Location NRB 1031



Course Heads David Rudner, rudner@hms.harvard.edu, Thomas Bernhardt, thomas_bernhardt@hms.harvard.edu

Course Instructor Simon Dove, simon.dove@childrens.harvard.edu

Curriculum Fellow Deepali Ravel, deepali_ravel@hms.harvard.edu

MICROBI 210 Microbial Sciences: Chemistry, Ecology, and Evolution

Michael Gilmore

4 units. Enrollment limited to 20.

Fri, 8:45a - 12:00p

This is an interdisciplinary graduate-level and advanced undergraduate-level course in which students explore topics in molecular microbiology, microbial diversity, and microbially-mediated geochemistry in depth. This course will be taught by faculty from the Microbial Sciences Initiative. Topics include the origins of life, biogeochemical cycles, microbial diversity, and ecology.

Course Notes Also offered as Organismic and Evolutionary Biology 290. Check **course site** for meeting dates and location.

Prerequisite For graduate and advanced undergraduate students, Life Sciences 1a and 1b or their equivalent are required, or permission of instructor. MCB 52 or equivalent is recommended.

Course Head Michael Gilmore, michael_gilmore@meei.harvard.edu

MICROBI 213 Social Issues in Biology

Jonathan Beckwith, Stephen Lory, Richard Born, David Glass, Nadine Vincenten, Emily Hamilton, Sarah Richardson, Nancy Hopkins, Kayla Davis

4 units. Enrollment limited to 18. Instructor consent required.

Thu, 2:00p - 5:00p

This discussion course covers historical and contemporary readings about controversial issues related to biology and social responsibility of scientists. The topics are selected from amongst the following: Eugenics: past, present and future; Reproducibility, probability and truth in science; Pros and cons of DNA use in forensics; Social activism in science; Women and minorities in science; Biology of sex and gender; History and public perception of vaccinations; Animals in research; Science communication to the public(s); Controversies in biology and medicine re: issues of race, ethnicity and gender; How science is taught. The course can provide future scientists with a background in anticipating and considering present and future ethical and social implications of biology.

Course Notes Offered jointly with the Medical School as MG 722.0

Recommended Prep Some background in genetics

Meeting Dates Jan 30 - Apr 23

Location TBD

Course Head Jonathan Beckwith, jon_beckwith@hms.harvard.edu

Teaching Assistant Kayla Davis, kayladavis@g.harvard.edu



Neurobiology

NEUROBIO 209 The Neurobiology of Disease

Ed Kravitz, Patricia Musolino, Beth Stevens

4 units. Enrollment limited to 25. Instructor consent required.

Mon, 6:00p - 8:30p, Wed, 7:00p - 9:30p

This highly rated course covers a major disease or disorder of the nervous system each week, including Alzheimer's, Huntington's and Parkinson's Diseases, Mood and Autism Spectrum disorder and others. Monday sessions involve patient presentations and "core" lectures describing clinical progression, pathology, and basic science underlying a major disease or disorder. On Wednesdays, students present material from original literature sources, and there is general discussion.

Course Notes Given in alternate years. Offered jointly with the Medical School as NB 713.0. For advanced undergraduate, graduate students, MD and MD/PhD students.

Recommended Prep Introductory neurobiology, biochemistry, and genetics/molecular biology recommended.

First Meeting Mon, Jan 27

Location TMEC 250

Course Heads Edward Kravitz, edward_kravitz@hms.harvard.edu, Patricia Musolino, pmusolino@partners.org, Beth Stevens, beth.stevens@childrens.harvard.edu

NEUROBIO 215B The Discipline of Neuroscience

Lisa Goodrich, John Assad, Taralyn Tan, Sandeep Robert Datta, Michael Do, David Corey, Rachel Wilson, Richard Born, Jan Drugowitsch, Christopher Harvey, Mark Andermann, Beth Stevens, Dan Polley

4 units. Enrollment limited to 25. Instructor consent required.

T/Th, 9:00a - 12:00p

This course will endow students with the broad conceptual fluency in the discipline of neuroscience required to relate genes to circuit function, metabolism to neurological disease, and cell biology to neural computations. Through a combination of lectures and in-class activities, students will learn to design, quantitatively analyze, and interpret experiments that address a variety of questions spanning molecular to systems neuroscience. During the first semester, students will think critically about the fundamental units of the nervous system within the context of cellular function, electrical conduction, and chemical signaling. The second half of the course builds upon this foundation to focus on broadly defined "networks of neural function" as related to coordinated neural activity, the concerted execution of genetic programs, and anatomically defined structural networks. The course culminates with students writing a grant proposal in the style of the NIH NRSA.

Course Notes Full year course. Students may not enroll for the second semester unless they have completed the first semester; however, students may elect to take just the first semester.



Recommended Prep Students must successfully complete 1st semester of course (NEUROBIO 215A).

Meeting Dates Jan 28 - May 7

Location Warren Alpert 236

Course Heads Lisa Goodrich, lisa_goodrich@hms.harvard.edu, John Assad, john_assad@hms.harvard.edu, Taralyn Tan, taralyn_tan@hms.harvard.edu

Speech & Hearing Sciences

SHBT 202 Clinical Aspects of Speech and Hearing

Konstantina Stankovic

4 units.

MW, 5:00p - 7:00p

Clinical approach to speech and hearing disorders as practiced by physicians, audiologists, speech clinicians, and rehabilitation specialists. Includes observation of patient care in clinic and operating rooms, as well as lectures, discussion groups, and laboratory experience in audiological and vestibular testing.

Course Notes Offered jointly with HST 724 at MIT. Classes to be held at Massachusetts Eye and Ear (MEE). Class meeting times may change according to physician OR and clinic schedules.

Recommended Prep Anatomy of Speech and Hearing, Acoustics of Speech and Hearing, or permission of the course director.

Meeting Dates Jan 31 - Apr 27

Location Eaton-Peabody Laboratories, Massachusetts Eye and Ear, 4th floor

Course Head Konstantina Stankovic, konstantina_stankovic@meei.harvard.edu

Teaching Assistant Janani Iyer, jiyer@g.harvard.edu

SHBT 205 Neural Coding and Perception of Sound

Joshua McDermott, Daniel Polley, Bertrand Delgutte, M. Christian Brown, Anne Takesian, Yoojin Chung, Evelina Fedorenko, John Gabrielli

4 units. Enrollment limited to 20. Instructor consent required.

MWF, 9:30a - 11:30a

Neural structures and mechanisms mediating the detection, localization and recognition of sounds. General principles are conveyed by theme discussions of auditory masking, sound localization, musical pitch, cochlear implants, cortical plasticity and auditory scene analysis.

Course Notes: Offered jointly with MIT HST.723J.

Prerequisite NEUROBIO 200 or permission of the instructor.

Meeting Dates Jan 27 - May 4

First Meeting Massachusetts Eye & Ear, 4th floor Conference Room

Course Heads Joshua McDermott, jhm@mit.edu, Daniel Polley, daniel_polley@meei.harvard.edu



Course Instructors Bertrand Delgutte, bertrand_delgutte@meei.harvard.edu, M. Christian Brown, chris_brown@meei.harvard.edu

Virology

VIROLOGY 201 Virology

Ben Gewurz, James Cunningham, Aaron Schmidt, Joe Sodroski, Dan Kuritzkes, Sun Hur

4 units. Enrollment limited to 20.

MW, 2:30p - 4:00p

The course focuses on the following areas of virology: (i) epigenetic regulation, (ii) RNA virus replication mechanisms, (iii) innate responses to viral infection, and (iv) inhibition of viral infection. The course will comprise lectures as well as reviewing literature that describes fundamental breakthroughs relevant to these areas. Within those areas, the class will read and discuss papers dealing with virus structure, replication, pathogenesis, evolution, emerging viruses, chronic infection, innate and adaptive immunity, anti-viral drugs/vaccines. Special emphasis will be placed on preparing students to critically evaluate the literature, formulate hypotheses and design experiments.

Course Notes Course format will be lectures, literature-based critical reading and discussion. Prepare and defend a written research proposal. Offered jointly with the Medical School as MG 723.0.

Prerequisite Virology 200, graduate standing and permission required.

Meeting Dates Jan 27 - May 6

Location TMEC 321

Course Head Ben Gewurz, bgewurz@partners.org

Course Instructor James Cunningham, jcunningham@rics.bwh.harvard.edu

