JANUARY 2022

HARVARD
DIVISION OF MEDICAL SCIENCES

J-Term:
Intensive Courses

January 10 – January 21, 2022

ENROLLMENT DEADLINES	GSAS ACADEMIC CALENDAR
J-Term Semester: **Jan. 10 – Jan. 21** **Spring Semester Begins:** **Jan. 24**	https://registrar.fas.harvard.edu/gsas-academic-calendar

REMINDERS

* J-Term courses are considered Spring term courses. Credits will be counted towards your Spring term credits.

* Register by going to **https://my.harvard.edu/**

* For questions, contact: **dms_courses@hms.harvard.edu**

Revised 11/2/2021

BCMP 301QC Translational Pharmacology: The Science of Therapeutic Discovery and Development
David E. Golan, Catherine I. Dubreuil, Mark N. Namchuk
Jan 3 - Jan 21

DRB 330QC Experimental Approaches to Stem Cell, Developmental & Regenerative Biology
Trista North, Ya-Chieh Hsu, Olivier Pourquie, Eric Greer, Jeffrey Macklis, Wolfram Goessling, April Craft, Jenna Galloway, Davie Van Vactor, Xi He
Jan 10 – Jan 21

GENETIC 390QC Bootcamp: Experimental Approaches in Genetics
Scott Kennedy
Jan 10 – Jan 22

HBTM 301QC Case Studies in Human Biology & Translational Medicine
Thomas Michel, Marc Bonaca
Jan 10 – Jan 21

MICROBI 302QC Introduction to Infectious Disease Research: Infectious Diseases Consortium Boot Camp
Dyann Wirth, Deepali Ravel
Jan 18 – Jan 21

NEUROBIO 323QC Quantitative Methods for Biologists (Python)
Eleanor Batty, Rick Born
Jan 10 – Jan 20

SHBT 203 Anatomy of Speech & Hearing
Barbara Fullerton, James Heaton
Jan 4 – Jan 28

VIROLOGY 301QC Advanced Topics in Virology: Viral Oncology
James DeCaprio
Jan 4 – Jan 20

Biological Chemistry & Molecular Pharmacology

BCMP 301QC Translational Pharmacology: The Science of Therapeutic Discovery and Development

David E. Golan, Catherine I. Dubreuil, Mark N. Namchuk

2 units. Enrollment limited to 56. Instructor consent required.

Meeting Dates: Jan 3 – Jan 21
Mon - Fri, 10:00am – 12:00pm, live in person content with some synchronous zoom sessions
Course Note: Schedule runs outside the J-Term semester dates. Class sessions will begin on **January 3** and will run through **January 21**.
Location: This course will be held in-person. Reach out to Catherine Dubreuil, catherine_dubreuil@hms.harvard.edu, for location specifics

This intensive course, held during three weeks in January (14 class days), covers principles of pharmacology and their translation into new drug discovery and development. Students participate in project groups, composed primarily of graduate students, to propose a drug development strategy from target choice through clinical trials. Most sessions include lectures, panel discussions, and/or case studies presented by Harvard faculty and faculty experts from the pharmaceutical and biotechnology industries; most afternoons are either unscheduled or provide scheduled time to work on the group project. Evaluation is based on written and oral presentations of the group project and on class participation. Enrollment may be limited.

Course Co-Directors: David E. Golan, david_golan@hms.harvard.edu , Catherine I. Dubreuil, catherine_dubreuil@hms.harvard.edu, and Mark Namchuk, Mark_Namchuk@hms.harvard.edu

Developmental & Regenerative Biology

DRB 330QC Experimental Approaches to Stem Cell, Developmental & Regenerative Biology

Trista North, Ya-Chieh Hsu, Olivier Pourquie, Eric Greer, Jeffrey Macklis, Wolfram Goessling, April Craft, Jenna Galloway, Davie Van Vactor, Xi He

2 units. Limited enrollment to 15. Consent of instructor required for undergraduates.

Meeting Dates: Jan 10 – Jan 21

Mon - Fri, 10:00am-4:00pm. Please reach out to mara_laslo@hms.harvard.edu with any questions.
Location: Various; see syllabus for details

This laboratory and lecture-based course is designed to provide a survey of model systems and technical approaches utilized in developmental, stem cell, and regenerative biology. Students will complete a series of mini-rotations with laboratories of DRB faculty across the Harvard campuses and affiliated hospitals. Students engage with faculty and trainees to gain experience with a variety of models, experimental techniques, and research areas. Each day of the course will consist of an overview lecture followed by hands-on laboratory activities and interactive discussions, designed to facilitate student, lab member, and PI interactions. The course will culminate in a social event with the larger DRB community and short, informal student-led (five minutes, five slides) brainstorming sessions inspired by a lab session of their choosing.

Course Note: Open to first-year and second-year BBS students (HDRB undergraduates with approval of the course director). Not repeatable for credit.
Class Notes: Course meeting only on Jan 10; presentations only on Jan 21; optional DRB welcome party on Jan 20.

Course Director: Trista North, trista.north@childrens.harvard.edu
Curriculum Fellow: Mara Laslo, mara_laslo@hms.harvard.edu
Other Instructors: Ya-Chieh Hsu, Olivier Pourquie, Eric Greer, Jeffrey Macklis, Wolfram Goessling, April Craft, Jenna Galloway, Davie Van Vactor, Xi He

Genetics

GENETIC 390QC Bootcamp: Experimental Approaches in Genetics

Scott Kennedy

2 Units. Enrollment limited to 8. Instructor Consent Required.

Meeting dates: January 10th - 22nd
Times: 9:00am – 5:00pm*
Location: HMS Quad *
***PLEASE NOTE:** This course will run the length of the J-Term. Specific dates and days are still to-be-determined. Upon enrollment, course fellow will reach out with updated information.

The goals of this course are to provide learners with a hand-on survey of major topics and themes in genetic and genomic analysis and exposure to numerous experimental techniques and model organisms. Over the course of six days, students will spend each day in a new lab and gain experience in using genetic approaches to address biologically relevant questions in a variety of experimental systems, including bacteria, *C. elegans*, mouse and humans. The

course will combine lectures, group-activities and hands-on laboratory exercises that emphasize experimental methods, hypothesis generation and testing, and data analysis.

Students will be graded on a pass/fail basis. To receive credit for this course, students are expected to attend and arrive prepared for every course session. Students should aim to complete daily evaluations of course activities and a final overall course evaluation.

Sinclair Lab	Mouse genetics and aging
Kennedy Lab	Introduction to *C. elegans*
Morton Lab	Human Cytogenetics
Warman Lab	Mouse and Human genetics
Jost Lab	Bacterial Genetics
Talkowski Lab	Analysis of Human genetics data (Computational)

Course Note: Priority will be given to first-year graduate students.
Prerequisite: Genetics 201 or permission from the Course Director/Curriculum Fellow

Course Director: Scott Kennedy (scott_kennedy@hms.harvard.edu)
Curriculum Fellow: Ognenka Avramovska (ognenka_avramovska@hms.harvard.edu)

Human Biology & Translational Medicine

HBTM 301QC Case Studies in Human Biology & Translational Medicine

Thomas Michel, Marc Bonaca

2 units. Restricted to Leder students only. Enrollment limited to 20. Instructor consent required.

Meeting Dates: Jan 10 – Jan 21
Mon - Fri, 9:00am-10:30am
Location: This course will be held in-person. The instructor will reach out with specific classroom information.

Two-week course that is required of and restricted to first-year LHB students. This course will review models of therapeutic development from epidemiologic observations through clinical development with a focus on lipid lowering therapies and diabetes. Students will be engaged in interactive workshops and will attend lectures led by leading clinical researchers.

Class Notes: This is an intensive January term course. Restricted to Leder students only.

Course Instructor: Thomas Michel
Other Instructors: Marc Bonaca, mbonaca@partners.org

Microbiology & Immunobiology

MICROBI 302QC Introduction to Infectious Disease Research: Infectious Diseases Consortium Boot Camp

Dyann Wirth, Deepali Ravel

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

Meeting Dates: Jan 18 – Jan 21
Tues – Fri, 9:00am – 5:00pm
Location: This course will be held in-person. The instructor will reach out with specific classroom information.

This January boot camp course provides a fun, informative introduction to the breadth of infectious disease research carried out at Harvard and beyond. Our goals are to introduce life science graduate students to potential thesis research areas while also giving you exposure to other topics and tools you'll encounter in the broader infectious disease research community. Students will also have the chance to meet faculty, students, and fellows in infectious disease roles across the university. The course will focus on several aspects of infectious diseases:

1. Underlying biology of infectious diseases and the diverse pathogens that cause them
2. Modern approaches to studying infectious diseases, including experimental biology, epidemiology, outbreak investigation, bioinformatics, and clinical microbiology
3. Modern approaches to developing new interventions, including drugs, vaccines, diagnostics, and public health measures
4. Societal impacts of infectious disease and historical perspectives on infectious disease research and injustice in infectious disease research

Course Notes: This course is designed for life sciences graduate students but is open for cross-registration from other students. The Winter 2022 version of this course will be taught primarily through synchronous in-person lectures, discussions, and workshops. Interested students with questions about accessibility or prerequisites should contact the course directors as soon as possible.
Course Instructors: Deepali Ravel, deepali_ravel@hms.harvard.edu (primary course contact), Dyann Wirth

NEUROBIOLOGY

NEUROBIO 323QC Quantitative Methods for Biologists (Python)

Eleanor Batty, Rick Born

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

Meeting Dates: Jan 10 – Jan 20
Mon – Fri, 9:00am – 4:30pm (with one hour lunch break)
Location: This course will be held in-person. The instructor will reach out with specific classroom information.
Course Note: Bootcamp will occur on M 1/10, W 1/12, F 1/14, T 1/18, and Th 1/20. Office hours and homework help on alternate days.

The goal of this bootcamp is to introduce you to programming in Python and to show you the power this provides for analyzing data and for gaining intuition about the behavior of complex systems through the use of numerical simulations. Some of you, upon encountering in the previous sentence words like "programming" and "numerical simulations," will feel the cold hand of fear grip your stomach, because you have never done any programming and, in fact, have tried to avoid math as much as possible. If so, YOU ARE PRECISELY THE PERSON WE HAD IN MIND as we were planning the course. We are aiming to help you break through this barrier of darkness and fear into the radiant sunshine of quantitative enlightenment. The true beauty of Python, as we will personally demonstrate, is that it allows people who are not mathematically adept (e.g. some of the instructors of this course) to use powerful numerical methods and visualization tools to gain an understanding of concepts that are very difficult to grasp analytically.

Course Instructor: Eleanor Batty, Eleanor_Batty@hms.harvard.edu
Course Co-Instructor: Rick Born, richard_born@hms.harvard.edu

Speech & Hearing Bioscience & Technology

SHBT 203 Anatomy of Speech & Hearing

Barbara Fullerton, James Heaton

4 units. Enrollment limited to 14. Instructor consent required.

Meeting Dates: Jan 4 – Jan 28
Mon-Fri, 9:00am – 1:00pm (class will start on a Tuesday, 1/4)
Breakdown: Lecture: 9:00am-10:15am, Anatomy Lab: 10:15am-1:00pm

Please Note: Schedule runs outside the J-Term semester dates. Class sessions will begin on **January 4** and will run until **January 28**.
Location: This course will be held in-person, in the TMEC. The instructor will reach out with specific classroom information.

This course covers anatomy of the head and neck with videos of some of the detailed anatomy. We will stress structures important in speech and hearing. Lecture topics include basic neuroanatomy, imaging, surgery and cancer of the head and neck.

Course Note: This an intensive January course, offered jointly with MIT as HST 718. Students should be comfortable with basic biology. Students not enrolled in the SHBT program must get permission from the course director to register for the course.
Course Instructors: Barbara Fullerton, bfullerton@mgh.harvard.edu, James Heaton, james.heaton@mgh.harvard.edu

Virology

VIROLOGY 301QC Advanced Topics in Virology: Viral Oncology

James DeCaprio

2 units. Enrollment limited to 10. Instructor consent required.

Meeting Dates: Jan 4 – Jan 20
Tue/Thurs, 4:30pm - 6:00pm
Please Note: Schedule runs outside the J-Term semester dates. Classes will be held on: **1/4, 1/6, 1/11, 1/13, 1/18, 1/20**
Location: To be provided on course page

Introduction to viral oncology and critical evaluation of key papers in viral oncology. Requirements include presentations, written critiques, and class participation.

Course Notes: This is an intensive January course, limited to Virology students only
Course Instructor: James DeCaprio, james_decaprio@dfci.harvard.edu