BGE

Genetics

BGE 500: Introduction to News Media Concepts and Institutions
In any age when scientific, medical, and environmental issues often make news, this course is designed to familiarize students with how the U.S. news media work. Students will learn how the industry is organized, and why it is undergoing fundamental change; how decisions are made about which stories to cover and how prominently to cover them; how the press weighs such values as freedom, privacy and national security; how the press attempts to deal with issues of scientific uncertainty and conflicting information. In exploring the culture and practices of American journalism, the course will focus on recent coverage of science, health and environmental developments. This course is intended for graduate students in health and science who seek a better understanding of the media context in which they will work, as well as for journalism M.S. students who do not have a background in journalism.
Offered
Fall, Spring, and Summer, 3 credits, Letter graded (A, A-, B+, etc.)

BGE 501: Foundations of Science Communication I
In this team-taught, immersive science communication training, students will build skills to passionately communicate in a way that excites, engages, and encourages audiences to want to learn more about their work. Improvisational theater-based techniques are combined with message design strategies like distilling and storytelling, enabling healthcare professionals, scientists, and researchers to use strategy and spontaneity to execute powerful communication in any context.
1 credit, Letter graded (A, A-, B+, etc.)

BGE 502: Communicating Science: Writing to the Public
Students will practice writing about specific and health material clearly and vividly, in ways not-scientists can understand. They will learn to use analogies, examples and metaphors to illuminate unfamiliar concepts, practice using numbers clearly and translating statistics into conversational English, learn about scientific terms and concepts that are commonly misunderstood by the public. They will learn to introduce complexity gradually, to avoid overwhelming the reader while not “dumbing down” their material. Students will learn to write for different formats, including blogs, letters to the editor or to funders, and op-eds or commentary pieces. Pre-requisite: JRN501 or JRN 565. This is a 1-credit module that meets for 4 consecutive weeks.
1 credit, Letter graded (A, A-, B+, etc.)

BGE 503: Foundations of Science Communication II
In this immersive science communication training, participants who have completed JRN 501 will continue their foundations in science communication with explorations into engaging with key audiences and the media, as well as creating a presentation accompanied by compelling visuals.
1 credit, Letter graded (A, A-, B+, etc.)

BGE 504: Communicating Science: Using Digital Media
Science and health information increasingly travels by digital media, as new ways emerge for scientists to communicate directly with the public, without the intermediaries of press or public relations. Students will learn how to use blogs, podcasts, Twitter and other forms of social media for two-way communication with different segments of the public, including colleagues in other disciplines. The course will include hands-on instruction in working with digital media, tailored to students’ interests and levels of experience. Pre-requisite: JRN 501, JRN 503, or JRN 565.
1 credit, S/U grading
May be repeated 2 times FOR credit.

BGE 505: Communicating Science: Connecting with the Community
Students will learn how to use communication techniques, cultural competency, and health literacy concepts to reach and mobilize the community and key stakeholders on health- and science-related issues related to their research, outreach or community education objectives. The course will incorporate role-playing and community networking skills to help students make connections with key people and groups relevant to their current interests and work. This will require contact with the instructor before the start of the course to discuss students’ projects, plans or interests.
Offered
Fall and Spring, 1-8 credits, S/U grading
May be repeated 2 times FOR credit.

BGE 506: Communicating Science: Advanced Writing for the Public
This course is for graduate students in the sciences who have taken JRN 502, Communicating Science: Writing To Be Understood, and want to continue developing and practicing their ability to write about science clearly and vividly for non-expert readers.
Offered
Spring, 1 credit, S/U grading
May be repeated for credit.

BGE 510: Graduate Genetics
This course investigates fundamental aspects of the transmission and expression of genetic information in prokaryotic and eukaryotic systems. The course is organized in a way that allows the students to appreciate the breadth of genetics research, while also gaining an in-depth understanding of selected important topics. Students explore the use of both classical and molecular genetic approaches to understand biological processes in genetics model systems including yeast, flies, worms, mouse, and man.
Spring, 3 credits, Letter graded (A, A-, B+, etc.)

BGE 530: Laboratory Rotation
The student rotates through laboratories of four different genetics program faculty members during the first year. The selection of the laboratories is made by the student, in conjunction with individual faculty, and with the approval of the program director. By taking part in ongoing projects, the student will learn experimental procedures and techniques and become acquainted with research opportunities in the participating programs. Prerequisite: Permission of instructor
Fall and Spring, 1-8 credits, S/U grading
May be repeated 2 times FOR credit.

BGE 531: Graduate Student Seminar in Genetics
Students have the opportunity to present their research to other students and faculty on an annual basis. Students in the first or second year will present brief seminars as part of a one-day symposium with all of their classmates. Advanced students present research seminars as part of a weekly research seminar series that is attended by faculty and students. Although the first and second year students do not present in this weekly seminar series, they should attend these seminars as it provides an excellent mechanism for learning about current areas of research interest.
Fall and Spring, 0-1 credits, S/U grading
May be repeated for credit.

BGE 534: Introduction to Systems Biology
This course is geared towards teaching essential concepts and computational skills in Systems Biology. The course is centered upon two key programming languages: Matlab for modeling applications and the R language for statistical analysis and sequence manipulation.

Spring, 3 credits, Letter graded (A, A-, B+, etc.)

BGE 550: Genetics Outside Seminar
Outside seminars and special topics courses in areas relating to genetic studies.

1-6 credits, Letter graded (A, A-, B+, etc.)
May be repeated for credit.

BGE 599: Graduate Research
Original investigation undertaken with the supervision of a member of the program.

Fall and Spring, 1-9 credits, S/U grading
May be repeated for credit.

BGE 657: Principles of Development
This course deals with developing systems at all levels from the morphological to the molecular. Illustrative material from both animal and plant kingdoms is used. Special attention is given to gametogenesis, genetic control of early development, transcriptional and translational control of protein synthesis, the role of cell division and cell movements, and cell-to-cell interactions in defining developing systems.

Prerequisite: MCB 656, matriculation in graduate program or permission of instructor.
Fall, 3 credits, Letter graded (A, A-, B+, etc.)

BGE 691: Readings in Genetics
Journal Club on thematic topics in different areas of current genetics research

Prerequisite: Permission of instructor
Fall and Spring, 1 credit, Letter graded (A, A-, B+, etc.)
May be repeated for credit.

BGE 693: Research Proposal Preparation in Genetics
A course, based upon literature in the broad field of Genetics, to instruct in scientific writing and the preparation of research proposals. In the first section of the course, students will become familiar with the components of a research proposal and will read and evaluate proposals written by the training faculty. Discussions guided by the course co-directors will cover the basics of scientific writing, research proposal preparation, and the problems and concerns commonly voiced by reviewers of research proposals. In the second section, students will develop and write a research proposal for the student of a topic in genetics that is unrelated to their graduate research. The students# skills in proposal preparation will be enhanced by critiquing the draft proposals presented by other students in the course

1 credit, Letter graded (A, A-, B+, etc.)

BGE 699: Dissertation Research on Campus
Prerequisite: Advancement to candidacy (G5).
Major portion of research must take place on SBU campus.

1-9 credits, S/U grading
May be repeated for credit.

BGE 700: Dissertation Research off Campus - Domestic
Prerequisite: Must be advanced to candidacy (G5). Major portion of research will take place off-campus, but in the United States and/or U.S. provinces. All international students must enroll in one of the graduate student insurance plans and should be advised by an International Advisor.

Fall, Spring, 1-9 credits, S/U grading
May be repeated for credit.

BGE 701: Dissertation Research off Campus - International
Prerequisite: Must be advanced to candidacy (G5). Major portion of research will take place outside of the United States and/or U.S. provinces. Domestic students have the option of the health plan and may also enroll in MEDEX. International students who are in their home country are not covered by mandatory health insurance, but must contact the Insurance Office for the insurance charge to be removed. International students who are not in their home country are charged for the mandatory health insurance. If they are to be covered by another insurance plan they must file a waiver by second week of classes. The charge will only be removed if other plan is deemed comparable.

All international students must received clearance from an International Advisor.

Fall, Spring, 1-9 credits, S/U grading
May be repeated for credit.

BGE 800: Summer Research
May be repeated for credit.