BGE

Genetics

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 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 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 plan and 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

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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.*