

GRADUATE CERTIFICATE IN GENETIC ENGINEERING

The Certificate in Genetic Engineering program is designed to allow students who have completed an undergraduate degree in basic science with a molecular biological emphasis to learn the techniques and principles of genetic engineering by both lecture and laboratory/project experience, balanced with an integrated presentation of both ethical concerns and safety considerations. This program will further prepare students to make transitions into careers in the area of biotechnology or to enter advanced degree programs. Graduate students intending to secure both a master's degree and the certificate may pursue these objectives concurrently with consultation and approval of the graduate degree faculty advisor. All coursework used to satisfy the requirements must be taken on an A-F graded basis and must be completed with a minimum grade point average of 3.0. Due to laboratory space limitations, total enrollment in the program will be restricted.

Before being considered for acceptance to the program, the student must first be eligible in accordance with all University requirements as outlined in the section Certificate Programs (<http://bulletin.sfsu.edu/about-sfsu/degrees-offered/certificates/>). This same section also includes university program guidelines and procedures to be followed in filing for the award of the certificate when it is completed.

Admission to the Program

To be admitted to the program an applicant must have completed a baccalaureate degree and must be admitted to classified graduate standing in accordance with University standard admissions requirements and procedures. In addition applicants must:

1. Submit to the certificate coordinator a copy of transcripts used for the baccalaureate degree, transcripts of other relevant study, and evidence of graduate standing in the university. The following courses from San Francisco State University, or their equivalents, are prerequisites and must be completed *before* the program is initiated.

Code	Title	Units
BIOL 350 & BIOL 351GW	Cell Biology and Experiments in Cell and Molecular Biology - GWAR	6-7
or BIOL 401 & BIOL 402GW	General Microbiology and General Microbiology Laboratory - GWAR	
BIOL 355	Genetics	3
BIOL 357	Molecular Genetics	3
CHEM 340 & CHEM 341 & CHEM 343	Biochemistry I and Biochemistry II and Biochemistry I Laboratory	9

2. Submit to the coordinator a letter of application for admission to the certificate program. This letter should include a description of any relevant experience not evident in the transcripts.
3. Make arrangements to have a minimum of two letters of recommendation sent to the coordinator.
4. Submit a letter of admission to classified status in the graduate program.
5. Applications should be addressed to:
Genetic Engineering Coordinator
Department of Biology

San Francisco State University
San Francisco, CA 94132.

The specific course requirements shall be determined by the student's committee and are based upon consideration of goals, interests, and undergraduate preparation. For additional details, contact the Graduate Program Coordinator.

Written English Proficiency Requirement

Demonstration of an appropriate level of writing competency shall be accomplished with the satisfactory preparation of written laboratory reports that demonstrate competency in scientific report writing and analysis of data. The instructor of this course shall determine whether reports have met those criteria and so specify on the Certificate Approved Program form. If the student's work is unsatisfactory, additional course work directed to achieving English competency may be specified after consultation with the coordinator.