The interdisciplinary minor in Genetic Engineering and Society (GES) examines the technological, societal and ecological issues surrounding the development and potential use of genetically engineered organisms. Participants in the minor will learn the basic concepts and principles underlying genetic engineering and the methods used for evaluating the technology’s social, cultural and environmental dimensions. The graduate minor is available to students pursuing either an MS or a Ph.D. degree.

Requirements

In order to complete the minor, coursework must be taken in relevant areas of natural sciences and the humanities and social sciences. 9 credit hours from a list of approved courses (see below) are required, 6 of which must be two of the core GES courses. The remaining 3 credit hours must be fulfilled by a course from the list of approved courses that are outside the students’ home discipline. A grade of B or higher must be achieved in each course counted towards the minor. In addition, a student must have a GES faculty member on his or her committee (see GES program homepage [https://research.ncsu.edu/ges/] for a list of the GES faculty), and this faculty member should be from a discipline other than the student’s major, ensuring that there is representation from both humanities/social science and natural science.

The choice of courses must be consistent with the interdisciplinary outlook of this minor, namely that students will learn the basic concepts and principles underlying genetic engineering and the methods used for evaluating the technology’s social, cultural and environmental dimensions. The minor representative will be responsible for ensuring that the courses taken are appropriate and balance the student’s major. Students in the biological sciences will be encouraged to take hands-on courses, such as those offered by the BIT program.

Plan Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GES/COM/HI</td>
<td>Emerging Technologies and Society</td>
<td>9</td>
</tr>
<tr>
<td>GES 591</td>
<td>Special Topics in Genetic Engineering and Society (Governance, Systems &amp; Modeling)</td>
<td></td>
</tr>
<tr>
<td>GES 591</td>
<td>Special Topics in Genetic Engineering and Society (Genetic Engineering for Sustainable Crop Development)</td>
<td></td>
</tr>
<tr>
<td>Select one additional course below:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>GES 506</td>
<td>Principles of Genetic Pest Management</td>
<td></td>
</tr>
<tr>
<td>ANT 550</td>
<td>Culture, Ecology, and Sustainable Living</td>
<td></td>
</tr>
<tr>
<td>BIT 410/510</td>
<td>Manipulation of Recombinant DNA</td>
<td></td>
</tr>
<tr>
<td>COM 536</td>
<td>Seminar in Environmental Communication</td>
<td></td>
</tr>
<tr>
<td>ECG 540</td>
<td>Economic Development</td>
<td></td>
</tr>
<tr>
<td>ENG 515</td>
<td>Rhetoric Of Science and Technology</td>
<td></td>
</tr>
<tr>
<td>FW 411/511</td>
<td>Human Dimensions of Wildlife and Fisheries</td>
<td></td>
</tr>
<tr>
<td>GN 735</td>
<td>Functional Genomics</td>
<td></td>
</tr>
<tr>
<td>HI 540</td>
<td>American Environmental History</td>
<td></td>
</tr>
<tr>
<td>HI 581</td>
<td>History of the Life Sciences</td>
<td></td>
</tr>
</tbody>
</table>

Total Hours: 12

Faculty

Full Professors
Rick Lynn Brandenburg
David Buchwalter
Wayne G. Buhler
Hannah J. Burrell
Robert R. Dunn
Steven D. Frank
Fred L. Gould
Rebecca Elizabeth Irwin
George G. Kennedy
Dominic Duane Reisig
Richard M. Roe
Coby J. Schal
Jules Silverman
Clyde E. Sorenson
David R. Tarpy
James F. Walgenbach
David W. Watson
Anna Elizabeth Whitfield
Brian M. Wiegmann

Associate professors
Marce D. Lorenzen
David B. Orr
Michael Hay Reiskind
Dorith Rotenberg

Assistant Professors
Zachary Steven Brown
Sydney E. Crawley
Anders Schmidt Huseth
Aram Arshak Mikaelyan
Elsa Youngsteadt

Emeritus Faculty
Charles Smith Apperson
Jack S. Bacheler
James R. Baker
Julius R. Bradley Jr
Wayne Maurice Brooks
William V. Campbell
Lewis L. Deltz
Maurice H. Farrier
Fred P. Hain
James D. Harper
Ruediger C. Hillmann
John R. Meyer
Harry B. Moore Jr.
Herbert H. Neunzig
John F. Roberts
Robert L. Robertson
Kenneth A. Sorensen
Phillip S. Southern
Ronald Edwin Stinner
John W. VanDuyn
Charles Gerald Wright

Adjunct Professors
Nicholas M. Haddad
Christopher M. Ranger