

**THE HONORS PROGRAM in BIOLOGICAL SCIENCES**  
**DEPARTMENT OF BIOLOGICAL SCIENCES**  
**EAST TENNESSEE STATE UNIVERSITY**

**MISSION STATEMENT**

The Honors Program in Biological Sciences at ETSU is intended to provide an enhanced program of study for talented and motivated students desiring an in-depth analysis of biological sciences. The program is designed to identify those students who are eligible for this study and advise them early in their coursework to allow them to get the maximum benefit of opportunities within the Department. Our specific goals include:

1. To provide a special curriculum available to students who have already committed to a professional career in biological or biomedical sciences. This curriculum consists of honors-only courses and honors-enriched courses that provide exploration of biological principles, approaches and techniques beyond the level of our typical biology major.
2. To provide students with a learning environment that encourages dialogue with their peers, faculty and mentors, inspires curiosity, engages controversy, and that emphasizes oral and written presentation of current topics. This will be accomplished by providing students with opportunities to interact directly with the Department Honors Coordinator and the teaching and research faculty.
3. To involve students early in their career in the discussion, investigation, and application of the scientific method. Students will gain an understanding of the approach, process, and communication skills required to implement a scientific research project. This will be the purpose of the Honors Research Orientation course which will usually be taught by the Honors Coordinator.
4. To enable students to develop a mentoring relationship with a member of the faculty who is actively engaged in research. These relationships will be established in the Honors Research Orientation course and will provide students with the opportunity to plan, execute, and complete their own research investigation. This investigation will then be developed into a Senior Research Project, culminating in an Honor's Thesis.



## CURRICULUM

### **Majors Requirements** (see Undergraduate Catalog, 2004-2005, pp. 79-81)

Students will be required to complete a B.S. degree in biology, following the curriculum described for the Standard Biology Program, the Biology Concentration, the Biochemistry Concentration, or the Secondary Biology Education Program. About thirty of the hours will be taken to satisfy the Biology Core and Biology Area distribution requirements.

### **Biological Sciences:**

Core: BIOL 1110/1111 Biology for Science Majors I + Laboratory  
BIOL 1120/1121 Biology for Science Majors II + Laboratory  
BIOL 1130/1131 Biology for Science Majors III + Laboratory  
BIOL 3100 General Genetics =15h

Advanced Biology “menu” areas (Molecular, Organismal, Population, Biodiversity):  
Specific requirements depend on the program selected; “Standard” Biology Major, “Concentration” in Biology, Secondary Biology Education Program, or Biochemistry Concentration.

Electives: Courses needed to complete credit hour requirements, chosen from BIOL offerings.

Total: At least 36 h in Biological Sciences for the Standard Biology Program \*  
At least 50 h in Biological Sciences for the Biology Concentration  
At least 36 h in Biological Sciences for the Biochemistry Concentration  
At least 39 h in Biological Sciences for the Secondary Biology Education Program

\* A minor is required with the Standard Biology Major

**Other:** Chemistry, Math, and Physics (specific requirements depend on the program.)

### **Honors Requirements**

At least 15 hours of the total required hours for the major program will be taken from Departmental Honors Courses. The Honors courses will include enrollment in one or more of the Advanced Area Honors-Enriched Experience courses, Honors Thesis (BIOL 4018, 3-6 h), and Honors Seminar (BIOL 4308, 2 h). Additional courses include Honors Discussions (BIOL 1118, 1128, 1138, 1 h each, to be taken with the corresponding Biology for Science Majors courses) and Honors Teaching Experience (BIOL 4518, 2 h). Honors Research Methods (BISC 3998, 2 h) will be strongly recommended for all Honors Students.

An Honors Research Project, culminating in an Honors Thesis, is the capstone requirement of this program. A faculty mentor plus two additional faculty members (one from the Department of Biological Sciences; one from outside the department) will form a research committee that will advise and approve the research project. Students may be granted from 3 to 6 credit hours for the completion of an independent research project and the writing of a thesis. The thesis is to be defended publicly and bound copies or electronic versions will be provided to the department, library, and Honors Program. Honors Thesis and Honors Seminar should be taken in the student's last semester, to cover writing and presentation of the thesis, respectively.

Honors Courses are listed below. Any of these Honors Courses would be open to other students at the discretion of the instructor. It is felt that the courses would serve a valuable function to a few other students, but it is desirable to keep the class sizes small.

#### **Honors Courses for the Introductory Level:**

BIOL 1118 Honors Discussion, Biology for Science Majors I (1 h)

BIOL 1128 Honors Discussion, Biology for Science Majors II (1 h)

BIOL 1138 Honors Discussion, Biology for Science Majors III (1 h)

These courses are available as a weekly group meeting in conjunction with the concurrent Biology for Science Majors course. Class time will be spent discussing timely issues related to the material covered in the corresponding course. Students will participate in leading discussions and write opinion papers on the current issues. In addition, this is intended as an opportunity to introduce students into the Honors Program. It will also reward instructors by providing small-group contact with the most motivated biology students in their large lecture classes.

The student pool would be those qualifying for the Departmental Honors Program upon admission to ETSU. These students would need to satisfy the Honors Program retention requirements in order to stay associated with the Honors Program.

#### **Honors Course at the Intermediate Level:**

BIOL 4908 Honors Biological Research Methods (2 h)

This course is intended to assist students in defining a research project, selecting a mentor, and completing a research prospectus. Another benefit is that the students will be able to identify and meet with their peers, be informed about basic research skills, and become aware of research ongoing in the department.

The student pool would be Departmental Honors students and other students who are interested in research. Students will be scheduled to register for Honors Research Orientation in their Junior year.

#### **Honors-Enriched Sections, Area Requirements:**

Students will enroll in at least one honors-enriched experience among the menu of courses comprising the four major area requirements. Sections will be available by special admission for honors students; essentially, the honors experience section will provide an additional enrichment experience for the companion course and would convert it to an honors-enriched experience. Honors-enriched sections may be taken in each

menu area but only one course in each menu area may be taken for Honors Experience. These honors-enriched sections will meet with the regular class, but will require additional assignments for the honors students. The following assignments will qualify as honor-enriched experiences:

- (1) Term paper on a special topic.
- (2) Written report on a special research project.
- (3) Oral presentation to the class on special topic or research effort.

### **Advanced Honors Courses:**

#### **BIOL 4518 Honors Teaching Experience (2 h)**

This course would provide opportunity for the student who has already completed an Honors Experience in one of the area courses to gain additional experience in the particular area of interest. The objective is to work with the instructor to prepare and assist in the lab exercises. In addition the student will be available throughout the semester for tutoring students in class topics. The student may also prepare and instruct a class in a prepared lecture(s). The student will benefit from the experience by learning and presenting laboratory and lecture material on a subject and from the opportunity to explore an area in-depth and the experience of teaching the material.

**BIOL 4018 Honors Thesis in the Biological Sciences (one semester for 3 h or 2 semesters for a maximum of 6 h)**

A research project is the capstone experience of the Honors Program in Biological Sciences. A research project is initiated by the student and a faculty mentor, ideally during the student's junior year. A committee of the mentor and two additional faculty members will approve the research project, monitor the progress of the project and approve the thesis. Credit for the research will be given as an Independent Research Study. Honors Thesis should be taken in the student's last semester to cover writing of the thesis.

#### **BIOL 4308 Honors Seminar in the Biological Sciences (2 h)**

This course provides an opportunity for students to learn and practice oral presentation skills, culminating with the presentation of a formal seminar or participation in the ETSU Student Research Forum. The course will be designed to satisfy the ETSU oral communication intensive course requirement. Students will attend and critique our current seminar series and have a separate meeting time to cover the skills topics.

## REQUIREMENTS FOR RETENTION IN THE HONORS PROGRAM

1. Students must enroll for at least 12 h per semester.
2. Students must achieve at least the following minimum overall GPA:

<u>Quality Hours</u>	<u>Minimum GPA</u>
up to 30	2.75
31-45	3.00
46-60	3.15
After 60	3.25
3. Establishment of a curriculum by the Honors Coordinator and regular contact with the Coordinator and the professors in Honors Courses should keep students on track throughout their program.
4. Participation in some regular activities (e.g., Tri-Beta, Marine Biology Club, seminars, and journal clubs) are encouraged in order to give the student a sense of departmental involvement.
5. Students who fail to meet the minimum retention standards as outlined above may continue as Honors students for one semester on probation. Probationary students who do not achieve the retention standards during their probationary semester will be removed from the Honors program. Students who have been removed from the Honors program may reapply when they achieve the standards for Post-Freshman admission.
6. Special circumstances in a student's education program will be handled on an individual basis by the Honors Coordinator in consultation with the Director of the University Honors Program.

**Graduation Requirements.** To graduate with Honors-in-Discipline designation at ETSU, students must have a minimum 3.25 GPA, complete all required courses (Honors, General Education, Academic Proficiencies) and complete and orally present the senior Honors thesis. In addition, all thesis grades must be B or higher.

## DEPARTMENTAL COORDINATION

A Departmental Honors Coordinator will be designated by Biological Sciences to coordinate the Honors Program. The Coordinator will also act as the Honors Advisor and establish recruitment procedures for students with involvement of the University Honors Program. The Coordinator will meet with students and establish their program curriculum. Each student will have regular meetings throughout their study to monitor their progress and to identify specific problems.

A student may discuss any decision made by the Honors Coordinator with the departmental chair or the Director of the University Honors Program.

**HONORS BIOLOGY MAJOR: SUGGESTED PROGRAM OF STUDY**

A program to meet the minimum requirements for Honors distinction in Biology  
(Course schedule to be approved by Departmental Honors Coordinator)

**Freshman Year**

BIOL 1118 Honors Discussion for Biology for Science Majors I (1) (Concurrent with BIOL 1110/1111)

BIOL 1128 Honors Discussion for Biology for Science Majors II (1) (Concurrent with BIOL 1120/1121)

**Sophomore Year**

BIOL 1138 Honors Discussion for Biology for Science Majors III (1) (Concurrent with 1130/1131)

BIOL 3100 General Genetics (3)

BIOL 3141 Genetics Laboratory (2) W (recommended)

**Junior Year**

# BIOL 4XXX-088 Honors experience in Biology section from one of the  
four Advanced Biology Areas (Concurrent with regular course)

# BIOL 4XXX-088 Honors experience in Biology section from the second of the  
four Advanced Biology Areas (Concurrent with regular course)

BIOL 4908 Honors Biological Research Methods (2)

BIOL 4900 Independent Research Study leading to Honors Thesis  
(recommended, can also start in summer semester)

**Senior Year**

# BIOL 4XXX-088 Honors experience in Biology section from the third of the  
four Advanced Biology Areas (Concurrent with regular course)

# BIOL 4XXX-088 Honors experience in Biology section from fourth of the  
four Advanced Biology Areas (Concurrent with regular course)

BIOL 4900 Independent Research Study leading to Honors Thesis

(R) BIOL 4018 Honors Thesis in the Biological Sciences (3 - 6)

BIOL 4508 Honors Seminar in the Biological Sciences (2)

\*Other Honors Courses available\*

BIOL 4518 Honors Teaching Experiences (2) arranged with a core course

(R) Courses Required for Honors Program

# The honors section is not required in all of these courses. See Honors Coordinator.