Cell and Molecular Biology, Ph.D.

<table>
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<tr>
<th>Major Code: 9025</th>
<th>Degree Awarded: Doctor of Philosophy</th>
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<tr>
<td>Delivery Mode(s): Classroom</td>
<td>Admission Status: Graduate</td>
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<td>Admission Materials: letter of recommendation, résumé, objectives, transcript, GRE</td>
<td>Locations(s): Main Campus - Melbourne</td>
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The doctor of philosophy degree is offered for students who want to carry out advanced research in the biological sciences. A student's research can encompass any area represented by a faculty member. The objective is to prepare the student at the highest academic level for a productive career in research, teaching and/or administration.

Admission Requirements

All prospective students must have a bachelor's degree from an accredited university and a minimum GPA of 3.0 in all undergraduate coursework. An applicant with a graduate degree must have a minimum GPA of 3.2 for all graduate coursework. Entering students should have competitive GRE (analytical and verbal) scores. Exceptions can be made in cases with strong justification (e.g., high GPA or extensive research experience). Applicants whose native language is not English must score at least 550 on the TOEFL and 230 on the TSE exam.

General admission requirements and the process for applying are presented under Graduate Academic Information. Admission decisions for fall semester enrollment are made by March 1, and for spring semester enrollment by October 1.

Degree Requirements

The doctoral degree requires a minimum of 73 semester hours beyond the bachelor's degree.

Curriculum

The curriculum consists of a minimum of 42 semester credit hours of coursework and a maximum of 30 semester credit hours of BIO 6999 Dissertation, BIO 5990 Biological Sciences Seminar is required each semester, BIO 5991 Biological Research Seminar is required during the semester of graduation. The 42 credit hours must include at least 18 semester credit hours of formal classroom courses and, with approval, may include up to six semester credit hours of 4000-level undergraduate courses. The balance of the 42 credit hours may be from BIO 5995 Biological Research or BIO 5998 Biological Research Rotation. Courses considered deficiencies in a student's education cannot be used in fulfilling the requirements for a graduate degree, and should be identified on the program plan as deficiencies and taken above and beyond the requirements.
At least 12 semester credit hours of coursework and all of the research/dissertation credit hours must be taken at Florida Tech. At least 15 semester credit hours of the dissertation must be taken beginning with the term in which the student is admitted to candidacy. Students matriculating with a master's degree may transfer up to 30 credit hours provided the courses are comparable to the core and elective courses. A grade lower than B in any transferred graduate course will not be counted toward the 73 hours. The thesis and research courses cannot be transferred toward the Ph.D. degree.

### Summary of Program Requirements

- Format Course Work Beyond Bachelor's Degree Credit Hours: 18-42
- Biological Research or Biological Research Rotation Credit Hours: 0-24
- Doctoral Dissertation Credit Hours: 15-30
- Biological Research Seminar (semester of graduation) Credit Hours: 1
- Biological Sciences Seminar (each semester of attendance) Credit Hours: 0

A minimum of 73 credit hours beyond the bachelor's degree is required.

### Core Courses

Students may satisfy part or the entire core course requirement by transfer of equivalent graduate courses taken in fulfillment of a master of science or similar degree.

- **BIO 5501 Cell and Molecular Biology**
- **BIO 5576 Molecular Genetics**

### Seminars

- **BIO 5990 Biological Sciences Seminar**
- **BIO 5991 Biological Research Seminar**

### Electives

Electives are subject to change. Consult with the major advisor for a current list.

- **BIO 5012 Protein Biotechnology**
- **BIO 5502 Molecular Biology of Signal Transduction**
- **BIO 5522 Bioinformatics, Genomics and Proteomics**
- **BIO 5545 Growth and Division of Cells 1: Prokaryotes**
- **BIO 5573 Scientific Analysis, Writing and Presentation**
- **BIO 5575 Biology of Cancer**
- **BIO 5585 Protein Structure and Function**
Research and Dissertation

- BIO 5995 Biological Research
- BIO 5998 Biological Research Rotation
- BIO 6999 Dissertation

Total Credits Required Beyond the Bachelor's Degree: 73