

UCF Degree Programs

Biomedical Sciences - Molecular and Cellular

Biology Track (B.S.)

College of Medicine

Burnett School of Biomedical Sciences

Health and Public Affairs II, Room: 335

<http://biomed.ucf.edu>

Email: bsbsadvising@ucf.edu

Dr. Griffith Parks, Director, 407-823-5932

Admission Requirements

- None

Degree Requirements

- Students who change degree programs and select this major must adopt the most current catalog.
- Students should complete the General Education Program before transferring within the Florida College System or State University System.
- Grades below a C in Common Program Prerequisites, Core Requirements and Restricted Electives will not be accepted.
- Students in this track must maintain a minimum science GPA of 3.2. Students who are unable to maintain such GPA, the student will have to revert back into the non-track Biomedical Sciences B.S.
- Students should consult with a BSBS academic advisor at least once per semester.

1. UCF General Education Program (GEP)

A: Communication Foundations (9 hrs)

Required	ENC 1101	Composition I	3 hrs
Required	ENC 1102	Composition II	3 hrs
Prefer	SPC 1603C	Fundamentals of Technical Presentations	3 hrs

B: Cultural & Historical Foundations (9 hrs)

C: Mathematical Foundations (7 hrs)

Required	MAC 2311	Calculus with Analytic Geometry I	4 hrs
Required	STA 2023	Statistical Methods I	3 hrs

D: Social Foundations (6 hrs)

E: Science Foundations (8 hrs)

¹ Required	CHM 2045C	Chemistry Fundamentals I	4 hrs
Required	BSC 2010C	Biology I	4 hrs

¹ or CHM2040 and CHM 2041

2. Common Program Prerequisites (CPP) (12 hrs)

- See "Common Prerequisites" in the Transfer and Transitions Services section for more information.

BSC 2010C	Biology I	GEP
¹ CHM 2045C	Chemistry Fundamentals I	GEP
CHM 2046	Chemistry Fundamentals II	3 hrs
CHM 2046L	Chemistry Fundamentals Laboratory	1 hr
MAC 2311	Calculus with Analytic Geometry I	GEP

¹ or CHM2040 and CHM2041

Physics

PHY 2053C	College Physics I and	4 hrs
PHY 2054C	College Physics II	4 hrs

or

PHY 2048C	General Physics Using Calculus I and	4 hrs
PHY 2049C	General Physics Using Calculus II	4 hrs

3. Core Requirements: Basic Level

Math and Statistics (6 hrs)

STA 2023	Statistical Methods I	GEP
MAC 2311	Calculus with Analytic Geometry I	GEP

Chemistry (8 hrs)

CHM 2210	Organic Chemistry I	3 hrs
CHM 2211	Organic Chemistry II	3 hrs
CHM 2211L	Organic Laboratory Techniques I	2 hrs

4. Core Requirements: Advanced Level (35 hrs)

BSC 3403C	Quantitative Biological Methods	4 hrs
MCB 3020C	General Microbiology	5 hrs
PCB 3522	Molecular Biology I	3 hrs
PCB 3233L	Immunology Laboratory	1 hr
PCB 4280	Molecular Immunology	3 hrs
PCB 4524	Molecular Biology II	3 hrs
MCB 4410	Cellular Metabolism	3 hrs

Select 1:

BCH 4024	Medical Biochemistry or	4 hrs
BCH 4053	Biochemistry I	3 hrs

Track Core Requirements

PCB 4529C	Experimental Molecular Cell Biology	4 hrs
PCB 4028	Molecular and Cellular Pharmacology	3 hrs
PCB 4234	Cancer Biology	3 hrs

5. Restricted Electives

Students must choose three electives from the list below.

- At least one must have a laboratory component.

BSC 4434	Biomedical Informatics: Sequence Analysis	3 hrs
MCB 4224	Molecular Biology of Diseases	3 hrs
MCB 4721C	Methods in Biotechnology	4 hrs
PCB 4663	Human Genetics	3 hrs
PCB 4174	Foundation of Bio-Imaging Science	3 hrs
PCB 3703C	Human Physiology	4 hrs
PCB 4521	Tissue Engineering	3 hrs
PCB 4264	Stem Cell Biology	3 hrs
PCB 4284	Immunobiology	3 hrs
PCB 4813	Molecular Aspects of Obesity, Diabetes & Metabolism	3 hrs
PCB 5275	Signal Transduction Mechanics	3 hrs
ZOO 3744	Neurobiology	3 hrs

As an alternative to one of these listed electives, students can take part in a GEAR course, the PURE program, the PILOT course, or carry out an HIM thesis. Any one of these courses or programs will substitute for a restricted elective course, including elective laboratory courses.

6. Capstone Requirements

- None

7. Foreign Language Requirements

Admissions

- Two years of one foreign language in high school or one year of one foreign language in college (or equivalent proficiency exam) prior to graduation.

Graduation

- None

8. Electives

- Variable. Students are encouraged to participate in undergraduate research if interested in pursuing graduate or professional education.

9. Additional Requirements

- None

10. Required Minors

- None

11. Departmental Exit Requirements

- Students must complete all coursework in the baccalaureate curriculum as shown and earn a GPA of at least 3.2 in the sciences.
- Independent study, directed research or similar credit may not be used as a restricted elective.
- A minimum of 20 hours must be taken at UCF in the department of the major.
- Students will be required to take a comprehensive test during their last semester.

12. University Minimum Exit Requirements

- A 2.0 UCF GPA
- 60 semester hours earned after CLEP awarded
- 48 semester hours of upper division credit completed
- 30 of the last 39 hours of course work must be completed in residency at UCF.

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- A maximum of 45 hours of extension, correspondence, CLEP, Credit by Exam, and Armed Forces credits permitted.
- Complete the General Education Program, the Gordon Rule, and nine hours of Summer credit.

Total Semester Hours Required

- 120

Honors In Major

- Application and admission through the Department and the Burnett Honors College.
- Fulfill University requirements for Honors in the Major and maintain a 3.2 UCF GPA; 3.5 in the major; 3.2 cumulative average for graded upper division courses regardless of institution.
- Complete the following course with a grade of B or better

¹BSC 3403C Quantitative Biological Methods 4 hrs

¹ Honors section

Complete the following with a grade of B or better and successfully complete the oral defense of the Honors Thesis 3 hrs

MCB 4970H Honors Undergraduate Thesis II 1 hr

Related Programs

- Biology
- Biotechnology
- Medical Laboratory Sciences
- Chemistry - Biochemistry Track

Certificates

- None

Related Minors

- Biology
- Chemistry

Advising Notes

- None

Transfer Notes

- Students who begin a two semester sequence course (e.g. General Chemistry) at a Florida College System institution are strongly encouraged to complete the sequence before transferring. If it will not be possible to complete the sequence before transferring, the student should postpone beginning the course until enrolling at UCF.
- Lower division courses do not substitute for upper division courses.

Acceptable Substitutes for Transfer Courses

- The combination of CHM 2040 and CHM 2041 substitutes CHM 2045C.

Plan of Study (120 hrs)

Freshman Year - Fall 14 hrs

ENC 1101 Composition I 3 hrs
 CHM 2045C Chemistry Fundamentals I 4 hrs
 MAC 2311 Calculus with Analytic Geometry I 4 hrs
 General Education Program Course 3 hrs

Freshman Year - Spring 14 hrs

BSC 2010C Biology I 4 hrs
 ENC 1102 Composition II 3 hrs
 CHM 2046 Chemistry Fundamentals II 3 hrs
 CHM 2046L Chemistry Fundamentals Laboratory 1 hr
 General Education Program Course 3 hrs

Sophomore Year - Fall 14 hrs

CHM 2210 Organic Chemistry I 3 hrs
 MCB 3020C General Microbiology 5 hrs
 STA 2023 Statistical Methods I 3 hrs
 General Education Program Course 3 hrs

Sophomore Year - Spring

CHM 2211 Organic Chemistry II 3 hrs
 BSC 3403C Quantitative Biological Methods 4 hrs
 Restricted Elective 3 hrs
 General Education Program Course 3 hrs

Select 1:

CHM 2211L Organic Laboratory Techniques I or Elective 2 hrs
 Elective 3 hrs

Sophomore Year - Summer 9 hrs

Select 1:
 CHM 2211L Organic Laboratory Techniques I or Elective 2 hrs
 Elective 3 hrs

Select 1:
 Restricted Elective or Elective 3 hrs
 Elective 3 hrs

Junior Year - Fall 14 hrs

PCB 3522 Molecular Biology I 3 hrs

Select 1:
 PHY 2053C College Physics I or
 PHY 2048C General Physics Using Calculus I 4 hrs
 Restricted Elective 4 hrs
 General Education Program Course 3 hrs

Junior Year - Spring 14 hrs

PCB 4524 Molecular Biology II 3 hrs
 PCB 4280 Molecular Immunology 3 hrs
 PCB 4028 Molecular and Cellular Pharmacology 3 hrs
 PCB 3233L Immunology Laboratory 1 hr

Select 1:
 PHY 2054C College Physics II or
 PHY 2049C General Physics Using Calculus II 4 hrs
 4 hrs

Senior Year - Fall 12 hrs

Select 1:
 MCB 4410 Cellular Metabolism or
 BCH 4053 Biochemistry I 3 hrs
 PCB 4234 Cancer Biology 3 hrs

Select 1:
 Restricted Elective or
 Elective 4 hrs
 Elective 3 hrs
 Elective 3 hrs

Senior Year - Spring 13 hrs

Select 1:
 MCB 4410 Cellular Metabolism or
 BCH 4053 Biochemistry I 3 hrs
 PCB 4529C Experimental Molecular Cell Biology 4 hrs

Select 1:
 Restricted Elective or
 Elective 4 hrs
 Elective 3 hrs
 Elective 3 hrs

Program Academic Learning Compacts

- Program Academic Learning Compacts (student learning outcomes) for undergraduate programs are located at:
http://www.oas.ucf.edu/alc/academic_learning_compacts.htm