

UCF Degree Programs

Biomedical Sciences - Preprofessional Concentration (B.S.)

College of Medicine

Burnett School of Biomedical Sciences

Health and Public Affairs II, Room: 335

<https://med.ucf.edu/biomed/>

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Students seeking admission to professional schools (medical, dental, optometry, veterinary, podiatry, and pharmacy) will meet all the admission requirements for those programs while obtaining a Biomedical Sciences degree.

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 "C" in Common Program Prerequisites, Core Requirements and Restricted Electives will not be accepted.

- Students should consult with a BSBS academic advisor and the Office of Pre-Health and Pre-Law Advising at least once per semester.

1. UCF General Education Program (GEP) (37 hrs)

- Note: Certain courses must be selected in GEP for this major, bringing the total GEP hours to more than 36.

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

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

2. Common Program Prerequisites (CPP) (16 hrs)

- See "Common Prerequisites" in the Transfer and

Transitions Services section for more information.

BSC 2010C	Biology I	GEP
¹ BSC 2011C	Biology II	4 hrs
¹ CHM 2045C	Chemistry Fundamentals I	GEP
CHM 2046	Chemistry Fundamentals II	3 hrs
CHM 2046L	Chemistry Fundamentals Laboratory	1 hr
MAC 2311C	Calculus with Analytic Geometry I	GEP

Select one of the following sequences of courses:

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

¹ See Transfer Notes for possible substitutions

3. Core Requirements: Basic Level (10 hrs)

Life Sciences: Basic

SLC 2311C	Overview of Select Medical Careers	2 hrs
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Math and Statistics

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

Chemistry

Take all of the following: 8 hrs

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

4. Core Requirements: Advanced Level (25 hrs)

Life Sciences: Advanced

MCB 3020C	General Microbiology	5 hrs
PCB 3522	Molecular Biology I	3 hrs
PCB 4524	Molecular Biology II	3 hrs
BSC 3403C	Quantitative Biological Methods	4 hrs

Select one of the following sequences of courses:

PCB 4280	Molecular Immunology and	3 hrs
PCB 3233L	Immunology Laboratory	1 hr

or

PCB 3233	Immunology and	3 hrs
PCB 3233L	Immunology Laboratory	1 hr

Select 1: 3 hrs

MCB 4414	Microbial Metabolism or	3 hrs
MCB 4410	Cellular Metabolism	3 hrs

Biochemistry - Select 1

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

5. Restricted Electives

7 courses minimum

- Seven (7) courses from below, from which at least two must be a laboratory course. No more than two may be MLS courses. Enrollment in some MLS courses is restricted. Check with advisor before enrolling. Only three hours of Honors thesis will count towards restricted elective requirement.

- Students cannot choose more than two (2) of the following restricted electives: BCH 4054, BCH 4103L, BOT 4850, PCB 3063, PCB 4402, PCB 4514, PCB 4678, PCB 4683, ZOO 4513, ZOO 4603C.

- 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.

BCH 4054	Biochemistry II	3 hrs
BOT 4850	Medicinal Botany	3 hrs
MCB 3202	Principles of Infectious Disease	3 hrs
¹ MCB 3203	Pathogenic Microbiology	3 hrs
MCB 4207	Infectious Processes	3 hrs
MCB 4276	Epidemiology of Infectious Diseases	3 hrs
MCB 4312	Molecular Biotechnology	3 hrs
MCB 4404	Bacterial Genetics and Physiology	3 hrs
MCB 4503C	Virology	3 hrs
MCB 4653	Applied Industrial Microbiology	3 hrs
MCB 4970H	Honors Undergraduate Thesis II	3 hrs
MLS 3305	Hematology	3 hrs
MLS 4334	Hemostasis	3 hrs
MLS 4430C	Clinical Parasitology	3 hrs
MLS 4505C	Immunodiagnostics	3 hrs
PCB 3063	Genetics	3 hrs
PCB 3703C	Human Physiology	4 hrs
PCB 4028	Molecular and Cellular Pharmacology	3 hrs
PCB 4234	Cancer Biology	3 hrs
PCB 4284	Immunobiology	3 hrs
PCB 4402	Disease Ecology & Ecoimmunology	3 hrs
PCB 4514	Genetics II	3 hrs
PCB 4663	Human Genetics	3 hrs
PCB 4678	Evolution and Medicine	3 hrs
² PCB 4683	Evolutionary Biology	4 hrs
PCB 4708L	Laboratory Virtual Simulations in Physiology	3 hrs

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PCB 4805	Endocrinology	3 hrs
PCB 4832	Cellular and Molecular Basis of Brain Functions	3 hrs
PCB 4833	Advanced Human Physiology	3 hrs
ZOO 3701C	Human Gross Anatomy & Dissection Techniques	3 hrs
ZOO 3733C	Human Anatomy	4 hrs
ZOO 3744	Neurobiology	3 hrs
ZOO 3755C	Introductory Histology	4 hrs
ZOO 4513	Animal Behavior	3 hrs
ZOO 4603C	Embryology/Development	5 hrs
ZOO 4605	Human Clinical Embryology and Congenital Malformation	3 hrs
ZOO 4742	Advanced Neurobiology	3 hrs
ZOO 4743C	Clinical Neuroanatomy and Neuroscience	4 hrs
ZOO 4753C	Vertebrate Histology	4 hrs
ZOO 4747C	Clinical Neuroscience	4 hrs

¹ Students must also select MCB 3203L Pathogenic Microbiology Lab in order for this combination to count as 1 restricted elective.

² Students must also take lab component, PCB 4683L

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

9. Additional Requirements

- None

10. Required Minors

- None

11. Departmental Exit Requirements

- Student must complete all coursework in the baccalaureate curriculum as shown, and, earn a GPA of at least 2.0 for all coursework in the Prerequisites, Core and Restricted Electives.

- Independent study, directed research, or similar credit may not be used as a Restricted Elective.

- 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.
- 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 the institution.
- Complete the following with a grade of B or better (4 credits)

BSC 3403C	Honors Quantitative Biological Methods	4 hrs
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- Complete the following with a grade of B or better and successfully complete the oral defense of the Honors Thesis (3 credits).

MCB 4970H	Honors Undergraduate Thesis II	1 hr
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- Biology
- Biotechnology
- Chemistry
- Medical Laboratory Sciences

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

BSC 2011C	Biology II	4 hrs
may be substituted with: BSC 3403C		
CHM 2045C	Chemistry Fundamentals I	4 hrs
may be substituted with: CHM 2040		
CHM 2045C	Chemistry Fundamentals I	4 hrs
may be substituted with: CHM 2041		

Plan of Study

Freshman Year - Fall		16 hrs
ENC 1101	Composition I	3 hrs
CHM 2045C	Chemistry Fundamentals I	4 hrs
¹ MAC 2311C	Calculus with Analytic Geometry I	4 hrs
SLS 2311C	Overview of Select Medical Careers	2 hrs
GEP		3 hrs

¹ or follow math sequence determined by Math Placement Exam

Freshman Year - Spring

Freshman Year - Spring		14 hrs
ENC 1102	Composition II	3 hrs
CHM 2046	Chemistry Fundamentals II	3 hrs
CHM 2046L	Chemistry Fundamentals Laboratory	1 hr
BSC 2010C	Biology I	4 hrs
GEP		3 hrs

Sophomore Year - Fall

Sophomore Year - Fall		14 hrs
CHM 2210	Organic Chemistry I	3 hrs
MCB 3020C	General Microbiology	5 hrs
GEP		3 hrs
STA 2023	Statistical Methods I	3 hrs

Sophomore Year - Spring

Sophomore Year - Spring		16 hrs
CHM 2211	Organic Chemistry II	3 hrs
BSC 3403C	Quantitative Biological Methods	4 hrs
GEP		3 hrs
Restricted Elective or Elective		3 hrs

Select 1:

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

Sophomore Year - Summer

Sophomore Year - Summer		9 hrs
Restricted Elective or Elective		3 hrs
Elective		3 hrs

Select 1:

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

Junior Year - Fall

Junior Year - Fall		13 hrs
PCB 3522	Molecular Biology I	3 hrs
GEP		3 hrs
Restricted Elective		3 hrs

Select 1:

Select 1:		4 hrs
PHY 2053C	College Physics I or	4 hrs
¹ PHY 2048C	General Physics Using Calculus I	4 hrs

¹ Students electing to enroll in the PHY2048/2049 sequence must plan to accommodate MAC 2311/2312 as prerequisites.

Related Programs

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Junior Year - Spring **13 hrs**
PCB 4524 Molecular Biology II 3 hrs
Restricted Elective 3 hrs

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

Select 1: **3 hrs**
PCB 3233L and PCB 4280 Molecular Immunology or 4 hrs
PCB 3233 or Restricted Elective 3 hrs

¹ Students electing to enroll in the PHY2048/2049 sequence must plan to accommodate MAC 2311/2312 as prerequisites.

Senior Year - Fall **12 hrs**
GEP 3 hrs
Restricted Elective 3 hrs

Select 1: **3 hrs**
MCB 4414 Microbial Metabolism or 3 hrs
BCH 4053 Biochemistry I 3 hrs

Select 1: **3 hrs**
PCB 3233L and PCB 4280 Molecular Immunology or 3 hrs
PCB 3233 or Restricted Elective 3 hrs

Senior Year - Spring **16 hrs**
GEP 3 hrs
Restricted Elective 3 hrs
Restricted Elective 3 hrs

Select 1: **3 hrs**
MCB 4414 Microbial Metabolism or 3 hrs
BCH 4053 Biochemistry I 3 hrs

Program Academic Learning Compacts

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

Equipment Fees

- Part-Time Student: \$39 per term
- Full-Time Student: \$78 per term