Biomedical Sciences - Molecular Microbiology

Track (B.S.)

College of Medicine
Burnett School of Biomedical Sciences
Health and Public Affairs II, Room: 335
http://www.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)
Required BSC 2010C Biology I 4 hrs
1 Required CHM 2045C Chemistry Fundamentals I 4 hrs
1 or CHM 2040 and CHM 2041

2. Common Program Prerequisites (CPP)
■ See “Common Prerequisites” in the Transfer 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

Select one of the following sequences of courses:

PHY 2053C College Physics I and
PHY 2054C College Physics II 4 hrs
or
PHY 2048C General Physics Using Calculus I and
PHY 2049C General Physics Using Calculus II 4 hrs
1 or CHM2040 and CHM2041

3. Core Requirements: Basic Level
Math and Statistics
STA 2023 Statistical Methods I GEP
MAC 2311 Calculus with Analytic Geometry I GEP

Chemistry
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
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 4414 Microbial Metabolism 3 hrs

Select 1:
BCH 4024 Medical Biochemistry or
BCH 4053 Biochemistry I 3 hrs

Track Core Requirements
MCB 4204 Cellular Microbiology: Host-Pathogen Interactions
MCB 4404 Bacterial Genetics and Physiology 3 hrs
MCB 4201 Microbial Stress Response 3 hrs

5. Restricted Electives
Students must choose 3 courses from the list below:
■ At least 2 must have a laboratory component
1 MCB 3203 Pathogenic Microbiology 4 hrs
1 MCB 4503C Virology 3 hrs
MCB 3202 Principles of Infectious Disease 3 hrs
MCB 4207 Infectious Processes 3 hrs
MCB 4276 Epidemiology of Infectious Diseases 3 hrs
MCB 4603 Environmental Microbiology 3 hrs
MCB 4721C Methods in Biotechnology 4 hrs
MCB 4653 Applied Industrial Microbiology 3 hrs
PCB 4028 Molecular and Cellular Pharmacology 3 hrs
PCB 4284 Immunobiology 3 hrs
1 Must also choose MCB 3203L Pathogenic Microbiology Lab

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 onyear 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 or similar independent study, directed research or similar credit may not be used as a restricted elective.

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 for all coursework 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.
■ 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 admissions 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 course with a grade of B or better

1 BSC 3403C Quantitative Biological Methods 4 hrs

1 Honors Section

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

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

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

- ENC 1102 Composition II 3 hrs
- BSC 2010C Biology I 4 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 15 hrs

- 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 2 hrs
- Elective 3 hrs

Junior Year - Fall 14 hrs

- PCB 3522 Molecular Biology I 3 hrs
- Restricted Elective 4 hrs

Select 1:

- PHY 2053C College Physics I or 4 hrs
- PHY 2048C General Physics Using Calculus I 4 hrs
- General Education Program Course 3 hrs

Junior Year - Spring 14 hrs

- PCB 4524 Molecular Biology II 3 hrs

Select 1:

- PHY 2054C College Physics II or 4 hrs
- PHY 2049C General Physics Using Calculus II 4 hrs

Select 1:

- MCB 4404 Bacterial Genetics and Physiology or 3 hrs
- MCB 4204 Cellular Microbiology: Host-Pathogen Interactions 3 hrs
- PCB 4280 Molecular Immunology 3 hrs
- PCB 3233L Immunology Laboratory 1 hr

Senior Year - Fall 12 hrs

Select 1:

- BCH 4053 Biochemistry I or 3 hrs
- MCB 4414 Microbial Metabolism 3 hrs
- MCB 4201 Microbial Stress Response 3 hrs
- Restricted Elective 4 hrs
- Elective 3 hrs

Senior Year - Spring 12 hrs

Select 1:

- BCH 4053 Biochemistry I or 3 hrs
- MCB 4414 Microbial Metabolism 3 hrs

Select 1:

- MCB 4404 Bacterial Genetics and Physiology or 3 hrs
- MCB 4204 Cellular Microbiology: Host-Pathogen Interactions 3 hrs
- Restricted Elective 4 hrs
- Elective 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