



## Bachelor of Science in Biomedical Sciences

Director: Dr. Griffith Parks, BBS 101G  
Associate Director: Dr. William Self, HPA II 335C

### I. University Requirements

#### UCF General Education Program (36 hrs)

Communication Foundations (9 hrs); Historical & Cultural Foundations (9 hrs); Social Foundations (6 hrs);  
Mathematical Foundations and Science Foundations (12 hrs – satisfied by major requirements)

### II. Departmental Requirements (83 hrs)

#### A. Core Curriculum (60 hrs)

- |                                    |   |       |
|------------------------------------|---|-------|
| <input type="checkbox"/> SLS 2311C | Overview of Select Medical Careers                  | 2 hrs |
|                                    | <b>*Required for pre-professional concentration</b> |       |

#### Life Sciences

- |  |   |       |
|--|---|-------|
| <input type="checkbox"/> BSC 2010C                     | Biology I   | 4 hrs |
| <input type="checkbox"/> BSC 3403C                     | Quantitative Biological Methods                     | 4 hrs |
| <input type="checkbox"/> MCB 3020C                     | General Microbiology                                | 5 hrs |
| <input type="checkbox"/> MCB 4414 -OR- MCB 4410        | Microbial Metabolism or Cellular Metabolism         | 3 hrs |
| <input type="checkbox"/> PCB 3522, 4524                | Molecular Biology I, II                             | 6 hrs |
| <input type="checkbox"/> PCB 4280 -OR- PCB 3233, 3233L | Molecular Immunology or Immunology + Immunology Lab | 4 hrs |

#### Chemistry

- |   |  |       |
|---|--|-------|
| <input type="checkbox"/> BCH 4053 -OR- BCH 4024 | Biochemistry I or Medical Biochemistry | 3 hrs |
| <input type="checkbox"/> CHM 2045C, 2046, 2046L | Chemistry Fundamentals I, II + Lab     | 8 hrs |
| <input type="checkbox"/> CHM 2210, 2211, 2211L  | Organic Chemistry I, II + Lab          | 8 hrs |

#### Math

- |                                    |   |       |
|------------------------------------|---|-------|
| <input type="checkbox"/> MAC 2311C | Calculus with Analytic Geometry I                                     | 4 hrs |
|                                    | <b>*Prerequisites: MAT 1033C, MAC 1105C, MAC 1114C, and MAC 1140C</b> |       |
| <input type="checkbox"/> STA 2023  | Statistical Methods I   | 3 hrs |

#### Physics

- |   |                                      |       |
|---|--------------------------------------|-------|
| <input type="checkbox"/> PHY 2048C, 2049C | General Physics Using Calculus I, II | 8 hrs |
| -OR-                                      |                                      |       |
| <input type="checkbox"/> PHY 2053C, 2054C | College Physics I, II                | 8 hrs |

#### B. Upper Division Restricted Electives (23 hrs)

Students must take at least **7 restricted elective courses**. At least **2 courses must be laboratory courses**. No more than 2 courses may be MLS courses. No more than 2 courses may be outside of the Biomedical Sciences Department. See separate sheet for a full list of restricted electives. \* = **recommended for pre-professional students**

- |  |       |   |       |
|--|-------|---|-------|
| ❖ BOT 4434C General Mycology                             | 4 hrs | ❖ PCB 4028 Molecular and Cellular Pharmacology*   | 3 hrs |
| ❖ BSC 3424 Nanobiotechnology                             | 3 hrs | ❖ PCB 4135 Applied Molecular Cell Biology         | 3 hrs |
| ❖ BSC 4434 Biomedical Informatics: Sequence Analysis     | 3 hrs | ❖ PCB 4174 Foundation of Bio-Imaging Science      | 3 hrs |
| ❖ BSC 4439 Biomedical Informatics: Structure Analysis    | 3 hrs | ❖ PCB 4234 Cancer Biology*                        | 3 hrs |
| ❖ MCB 3202 Principles of Infectious Disease*             | 3 hrs | ❖ PCB 4264 Stem Cell Biology                      | 3 hrs |
| ❖ MCB 3203, 3203L Pathogenic Microbiology + Lab          | 4 hrs | ❖ PCB 4284 Immunobiology                          | 3 hrs |
| ❖ MCB 4201 Microbial Stress Response                     | 3 hrs | ❖ PCB 4521 Tissue Engineering                     | 3 hrs |
| ❖ MCB 4204 Cell Microbiology: Host-Pathogen Interactions | 3 hrs | ❖ PCB 4529C Experimental Molecular Cell Biology   | 3 hrs |
| ❖ MCB 4207 Infectious Processes*                         | 3 hrs | ❖ PCB 4663 Human Genetics                         | 3 hrs |
| ❖ MCB 4224 Molecular Biology of Diseases*                | 3 hrs | ❖ PCB 4708L Lab Virtual Simulations in Physiology | 3 hrs |
| ❖ MCB 4276 Epidemiology of Infectious Diseases*          | 3 hrs | ❖ PCB 4805 Endocrinology*                         | 3 hrs |
| ❖ MCB 4312 Molecular Biotechnology*                      | 3 hrs | ❖ PCB 4813 Molecular Aspects of Obesity           | 3 hrs |
| ❖ MCB 4404 Bacterial Genetics and Physiology             | 3 hrs | ❖ PCB 4832 Cellular and Molecular Brain Functions | 3 hrs |
| ❖ MCB 4503C Virology*                                    | 3 hrs | ❖ PCB 4833 Advanced Human Physiology              | 3 hrs |
| ❖ MCB 4603 Environmental Microbiology                    | 3 hrs | ❖ PCB 4843 Cellular and Molecular Neuroscience    | 3 hrs |
| ❖ MCB 4721C Methods in Biotechnology                     | 4 hrs | ❖ ZOO 3701C Gross Anatomy/Dissection Techniques*  | 3 hrs |
| ❖ MLS 3220C Techniques in Clinical Microscopy            | 3 hrs | ❖ ZOO 3733C Human Anatomy*                        | 4 hrs |
| ❖ MLS 3305 Hematology*                                   | 3 hrs | ❖ ZOO 3744 Neurobiology*                          | 3 hrs |
| ❖ MLS 4334 Hemostasis*                                   | 3 hrs | ❖ ZOO 3755C Introductory Histology                | 4 hrs |
| ❖ MLS 4430C Clinical Parasitology*                       | 2 hrs | ❖ ZOO 4605 Human Clinical Embryology*             | 3 hrs |
| ❖ MLS 4505C Immunodiagnostics*                           | 3 hrs | ❖ ZOO 4742 Advanced Neurobiology*                 | 3 hrs |
| ❖ MLS 4625 Advanced Clinical Chemistry I                 | 3 hrs | ❖ ZOO 4743C Clinical Neuroanatomy & Neuroscience* | 4 hrs |
| ❖ MLS 4630 Advanced Clinical Chemistry II                | 3 hrs | ❖ ZOO 4747C Clinical Neuroscience*                | 4 hrs |
| ❖ PCB 3703C Human Physiology*                            | 4 hrs | ❖ ZOO 4753C Vertebrate Histology*                 | 4 hrs |

**Note: Participating in GEAR, PURE, PILOT, or HIM will substitute for one restricted elective course.**

### III. Unrestricted Electives: 3000 level or above

See separate sheet for a list of unrestricted electives.



**Suggested Baccalaureate Degree Plan of Study**

Freshman Year				
Fall		Spring		Summer
CHM 2045C	4 hrs	BSC 2010C	4 hrs	Plan your 9 required summer hours into your course of study.
ENC 1101	3 hrs	CHM 2046	3 hrs	
MAC 1105C	3 hrs	CHM 2046L	1 hr	
PSY 2012	3 hrs	ENC 1102	3 hrs	
OR SYG 2000		MAC 1114C	3 hrs	
OR ANT 2000		SLS 2311C**	2 hrs	
<b>Total Hours</b>	<b>13</b>	<b>Total Hours</b>	<b>14-16</b>	

*\*\*Required for students in the pre-professional concentration pursuing any of the following fields:  
Chiropractic, Dental, Medical, Optometry, Pharmacy, Podiatry, Veterinary*

Sophomore Year				
Fall		Spring		Summer
CHM 2210	3 hrs	BSC 3403C	4 hrs	
MAC 1140C	3 hrs	CHM 2211	3 hrs	
MCB 3020C	5 hrs	CHM 2211L	2 hrs	
EUH 2000	3 hrs	MAC 2311C	4 hrs	
OR AMH 2010		EUH 2001	3 hrs	
OR HUM 2211		OR AMH 2020		
		OR HUM 2230		
<b>Total Hours</b>	<b>14</b>	<b>Total Hours</b>	<b>16</b>	

Junior Year				
Fall		Spring		Summer
BSC 2011C*	4 hrs	PCB 3233L	1 hr	
Restricted Elective	3/4 hrs	PCB 3522	3 hrs	
BCH 4053	3/4 hrs	Restricted Elective	3/4 hrs	
OR BCH 4024		PCB 4280	3 hrs	
ECO 2013	3 hrs	OR PCB 3233		
OR POS 2041		PHY 2054C	4 hrs	
PHY 2053C	4 hrs	OR PHY 2049C**		
OR PHY 2048C**				
<b>Total Hours</b>	<b>13-17</b>	<b>Total Hours</b>	<b>14-15</b>	

*\*Recommended for Vet School*

*\*\*Students electing to enroll in the PHY 2048C/2049C sequence must accommodate taking MAC 2311C/2312 as prerequisites*

Senior Year				
Fall		Spring		Summer
Historical & Cultural Foundations Course	3 hrs	Restricted Elective	3/4 hrs	
PCB 4524	3 hrs	Restricted Elective	3/4 hrs	
Restricted Elective	3/4 hrs	Restricted Elective	3/4 hrs	
Restricted Elective	3/4 hrs	STA 2023	3 hrs	
MCB 4414	3 hrs	SPC 1608	3 hrs	
OR MCB 4410		OR SPC 1603C**		
<b>Total Hours</b>	<b>15-17</b>	<b>Total Hours</b>	<b>15-17</b>	

*\*\*Recommended*

Alternative plans of study may be necessary as a result of transfers, course availability, or unsuccessful attempts at completing one or more courses. This should be discussed with a designated department academic advisor. Students should use unrestricted electives to meet the University requirement of 48 hours of courses at the 3000 level or above.

**\*Students should consult with their designated academic advisor prior to each registration period.\***

**For more information contact:  
Office of Student Services and Advisement  
HPA II 335 / (407) 823-5932 / [biomed.ucf.edu](mailto:biomed.ucf.edu)  
[BSBSAdvising@ucf.edu](mailto:BSBSAdvising@ucf.edu)**