

# BIOCHEMISTRY (B.S.)

## Student Learning Outcomes

- Students will demonstrate knowledge of discipline- specific content related to macro- principles describing the 3 domains of biology and the molecular nature of life.
- Students will use critical thinking by demonstrating the ability to recognize the components of a problem, formulate a strategy to solve the problem, apply comprehensive scientific knowledge to execute a solution and then evaluate the effectiveness of the solution.
- Students will demonstrate communication skills reflective of professional standards consistent biology-related associations (i.e. FASEB).
- Students will demonstrate discipline- specific core laboratory and calculation- based skills related to the characterization and classification of life forms, their components and habitats and in the molecular analysis of living species.
- Students will demonstrate readiness for post-baccalaureate entry into a workforce or acceptance into graduate or professional programs in Biology and/or health professions.
- Students will demonstrate global perspective in their understanding of how biological factors affect economics, health, technology and the environment.

## Recommended

- A Global Learning (GL) experience (<http://catalog.walsh.edu/undergraduate/academic-services/#globallearning>)

## Required

- General Education Requirements (<http://catalog.walsh.edu/undergraduate/general-education-curriculum/>)
- Internship

Code	Title	Hours
<b>Biology</b>		
BIO 101	FD: T1:Principles of Biology I	3
BIO 101L	Principles of Biology I: Lab	1
BIO 102	Principles of Biology II	3
BIO 102L	Principles of Biology II: Lab	1
BIO 306	Cell Biology	3
BIO 390	Biology Internship	1-3
BIO 402	DV: Genetics	3
BIO 402L	Genetics: Lab	1
BIO 414	Cellular Molecular Tech	3
<b>Biochemistry</b>		
BIO/CHEM 307	Essential Biochemistry	3
CHEM 198	Chemistry Seminar	1
CHEM 398	Premier Skills/Professionalism	1
CHEM 403	Clinical Biochemistry	3
<b>Chemistry</b>		
CHEM 101	FD:T1:Princ of Chemistry I	3
CHEM 101L	Principles of Chemistry I: Lab	1
CHEM 102	Principles of Chemistry II	3
CHEM 102L	Principles of Chemistry II:Lab	1

CHEM 208	Organic Chemistry I	2
CHEM 201L	Organic Chemistry I: Lab	1
CHEM 209	Organic Chemistry II	2
CHEM 202L	Organic Chemistry II: Lab	1
CHEM 210	Organic Chemistry III	2
CHEM 303	Modern Analytical Chem	3
CHEM 303L	Modern Analytical Chem Lab	1
CHEM 310	Found of Physical Chem	4

### Physics

PHYS 101	Principles of Physics I	3
or PHYS 201	Physics with Calculus I	
PHYS 101L	Principles of Physics I: Lab	1
PHYS 102	Principles of Physics II	3
or PHYS 202	Physics with Calculus II	
PHYS 102L	Principles of Physics II: Lab	1

### Mathematics

MATH 221	Statistics	3
MATH 210A	Calculus I	3
MATH 211	Calculus II	3

**Total Hours** **68-70**

<sup>1</sup> Math and Science requirements in major also fulfill core requirements; MATH 155 and MATH 156 are prerequisites for MATH 207.

*Students must pass each course with a "C-" grade or higher for the major.*