

# CHEMISTRY – PRE-PROFESSIONAL (PRE-DENTAL, PRE-MEDICAL, PRE-OPTOMETRY, PRE-PHARMACY, PRE-PHYSICIAN'S ASSISTANT AND PRE-VETERINARY (B.S.))

## Student Learning Outcomes

- Students will demonstrate knowledge of Thermodynamics, Kinetics, Equilibrium, Structure of Materials, Quantum Mechanics, Synthesis, Reactivity of Substances and Green Chemistry.
- 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 in chemistry consistent with the American Chemical Society.
- Students will demonstrate discipline-specific core laboratory and calculation-based skills related to the synthesis and characterization of compounds and common methods of chemical analysis.
- Students will demonstrate readiness for post-baccalaureate entry into a workforce or advancement (entrance) into graduate or professional programs in Chemistry.
- Students will demonstrate global perspective in their understanding of how chemistry affects 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

| Chemistry          |                                |           |
|--------------------|--------------------------------|-----------|
| 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 305           | Inorganic Chemistry            | 3         |
| CHEM 310           | Found of Physical Chem         | 4         |
| CHEM 390           | DV:Chemistry Internship        | 3         |
| Mathematics        |                                |           |
| MATH 210A          | Calculus I                     | 3         |
| MATH 211           | Calculus II                    | 3         |
| MATH 310A          | Calculus III                   | 3         |
| Physics            |                                |           |
| PHYS 201           | Physics with Calculus I        | 3         |
| PHYS 101L          | Principles of Physics I: Lab   | 1         |
| PHYS 202           | Physics with Calculus II       | 3         |
| PHYS 102L          | Principles of Physics II: Lab  | 1         |
| <b>Total Hours</b> |                                | <b>67</b> |

*Math and Science requirements in major also fulfill core requirements. All courses required in the major must be completed with a "C-" or better in order to satisfy the major. Incoming students need to place into MATH 104 in order to enroll in BIO 101 and MATH 155 into enroll in CHEM 101.*

| Code     | Title                          | Hours |
|----------|--------------------------------|-------|
| Biology  |                                |       |
| 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 206  | Microbiology                   | 3     |
| BIO 206L | Microbiology: Lab              | 1     |
| BIO 209  | Anatomy/Physiology I           | 3     |
| BIO 209L | Anatomy/Physiology I: Lab      | 1     |
| BIO 210  | Anatomy/Physiology II          | 3     |
| BIO 210L | Anatomy/Physiology II: Lab     | 1     |