

**LIFE SCIENCE / CHEMISTRY LICENSURE Fall 2018**  
**REQUIRES A TOTAL OF 71 SEMESTER HOURS**

Pedagogy Requirements: (4 sem. hrs. req.)

|   |   |
|---|---|
| EDT 434 Science Methods For AYA .....                                 | 3 |
| EDT 434L Science Methods For AYA Lab .....                            | 1 |
| STANDER SYMPOSIUM Presentation & Participation in Science             |   |
| <a href="https://stander.udayton.edu">https://stander.udayton.edu</a> |   |

Biology Requirements: (27 sem. hrs. req.)

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|--|---|
| BIO 151 Concepts of Biology I.....                 | 3 |
| BIO 151L Biology Laboratory Investigation I .....  | 1 |
| BIO 152 Concepts of Biology II .....               | 3 |
| BIO 152L Biology Laboratory Investigations II..... | 1 |
| BIO 301 Evolution .....                            | 3 |
| BIO 309 Comparative Anatomy.....                   | 3 |
| BIO 309L Comparative Anatomy Laboratory .....      | 1 |
| BIO 310 Ecology.....                               | 3 |
| BIO 310L Ecology Laboratory .....                  | 1 |
| BIO 314 Plant Biology .....                        | 3 |
| BIO 314L Plant Biology Laboratory .....            | 1 |
| BIO 411 General Microbiology .....                 | 3 |
| BIO 411L General Microbiology Laboratory .....     | 1 |

Chemistry Requirements: (20 sem. hrs. req.)

|   |   |
|---|---|
| CHM 123 General Chemistry I .....               | 3 |
| CHM 123L General Chemistry I Laboratory .....   | 1 |
| CHM 124 General Chemistry II .....              | 3 |
| CHM 124L General Chemistry II Laboratory .....  | 1 |
| CHM 201 Quantitative Analysis .....             | 3 |
| CHM 201L Quantitative Analysis Laboratory ..... | 1 |
| CHM 313 Organic Chemistry I .....               | 3 |
| CHM 313L Organic Chemistry I Laboratory .....   | 1 |
| CHM 314 Organic Chemistry II .....              | 3 |
| CHM 314L Organic Chemistry II Laboratory .....  | 1 |

Earth Science & Physics Requirements: (12 sem. hrs. req.)

|  |   |
|--|---|
| GEO 115 Physical Geology .....               | 3 |
| GEO 115L Physical Geology Laboratory .....   | 1 |
| PHY 201 General Physics I.....               | 3 |
| PHY 201L General Physics I Laboratory .....  | 1 |
| PHY 202 General Physics II .....             | 3 |
| PHY 202L General Physics II Laboratory ..... | 1 |

Math Requirements: (8 sem. hrs. req.)

|   |   |
|---|---|
| MTH 168 Analytic Geometry and Calculus I .....  | 4 |
| MTH 169 Analytic Geometry and Calculus II ..... | 4 |

Computer Requirements: Use of computers is required in BIO 151L and BIO 152L. Students who do not possess needed skills should take CPS 111 or a higher level CPS course.

Integrated Science License: Requires a single and/or dual field concentration area, and the Integrated Science state of Ohio teaching license will be processed by the University of Dayton once ODE has issued the single and/or double field concentration license.

**LIFE SCIENCE / PHYSICS LICENSURE Fall 2018**  
**REQUIRES A TOTAL OF 80 SEMESTER HOURS**

Pedagogy Requirements: (4 sem. hrs. req.)

|   |   |
|---|---|
| EDT 434 Science Methods For AYA .....                                 | 3 |
| EDT 434L Science Methods For AYA Lab .....                            | 1 |
| STANDER SYMPOSIUM Presentation & Participation in Science             |   |
| <a href="https://stander.udayton.edu">https://stander.udayton.edu</a> |   |

Biology Requirements: (27 sem. hrs. req.)

|   |   |
|---|---|
| BIO 151 Concepts of Biology I .....                 | 3 |
| BIO 151L Biology Laboratory Investigation I .....   | 1 |
| BIO 152 Concepts of Biology II .....                | 3 |
| BIO 152L Biology Laboratory Investigations II ..... | 1 |
| BIO 301 Evolution.....                              | 3 |
| BIO 309 Comparative Anatomy .....                   | 3 |
| BIO 309L Comparative Anatomy Laboratory .....       | 1 |
| BIO 310 Ecology .....                               | 3 |
| BIO 310L Ecology Laboratory.....                    | 1 |
| BIO 314 Plant Biology .....                         | 3 |
| BIO 314L Plant Biology Laboratory .....             | 1 |
| BIO 411 General Microbiology .....                  | 3 |
| BIO 411L General Microbiology Laboratory .....      | 1 |

Physics Requirements: (20 sem. hrs. req.)

|  |   |
|--|---|
| PHY 206 General Physics I—Mechanics .....                      | 3 |
| PHY 207 General Physics II—Electricity and Magnetism .....     | 3 |
| PHY 208 General Physics III—Mechanics of Waves.....            | 3 |
| PHY 210L General Physics Laboratory I.....                     | 1 |
| PHY 211L General Physics Laboratory II .....                   | 1 |
| PHY 250 Descriptive Astronomy .....                            | 3 |
| PHY 321 Atomic and Nuclear Physics .....                       | 3 |
| PHY 395 Research Participation I .....                         | 1 |
| <u>Select additional courses to total 20 hours in Physics:</u> |   |
| PHY 303 Intermediate Mechanics I.....                          | 3 |
| PHY 333 Digital and Analog Electronics for Scientists .....    | 3 |

Chemistry & Earth Science Requirements: (16 sem. hrs. req.)

|  |   |
|--|---|
| CHM 123 General Chemistry I.....               | 3 |
| CHM 123L General Chemistry I Laboratory .....  | 1 |
| CHM 124 General Chemistry II.....              | 3 |
| CHM 124L General Chemistry II Laboratory ..... | 1 |
| CHM 313 Organic Chemistry I.....               | 3 |
| CHM 313L Organic Chemistry I Laboratory .....  | 1 |
| GEO 115 Physical Geology .....                 | 3 |
| GEO 115L Physical Geology Laboratory.....      | 1 |

Math Requirements: (12 sem. hrs. req.)

|  |   |
|--|---|
| MTH 168 Analytical Geometry and Calculus I.....    | 4 |
| MTH 169 Analytical Geometry and Calculus II.....   | 4 |
| MTH 218 Analytical Geometry and Calculus III ..... | 4 |