

**EARTH / CHEMISTRY LICENSURE Fall 2019**  
**REQUIRES A TOTAL OF 68 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 and Participation in Science	
<a href="https://stander.udayton.edu">https://stander.udayton.edu</a>	

**Earth Science Requirements: (24 sem. hrs. req.)**

GEO 115 Physical Geology .....	3
GEO 115L Physical Geology Laboratory.....	1
GEO 116 Geological History of the Earth .....	3
GEO 116L Geological History of the Earth Laboratory.....	1
GEO 201 Mineralogy.....	3
GEO 201L Mineralogy Laboratory .....	1
GEO 208 Environmental Geology .....	3
GEO 208L Environmental Geology Laboratory .....	1
GEO 301 Structural Geology.....	3
GEO 301L Structural Geology Laboratory .....	1

**Select additional courses to total 24 hours in Geology:**

GEO 307 Geomorphology .....	3
GEO 307L Geomorphology Laboratory.....	1
GEO 309 Surface and Groundwater Hydrology .....	3
GEO 309L Surface and Groundwater Hydrology Laboratory...	1
GEO 303 Field Geology .....	6
GEO 401 Paleontology .....	3
GEO 401L Paleontology Laboratory.....	1
GEO 403 Sedimentary .....	3
GEO 403L Sedimentary 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
<b><u>Select additional courses to total 20 hours in Chemistry:</u></b>	
CHM 302 Physical Chemistry .....	3
CHM 314 Organic Chemistry II .....	3
CHM 314L Organic Chemistry II Laboratory.....	1
CHM 341 Environmental Chemistry .....	3
CHM 341L Environmental Chemistry Laboratory .....	1
CHM 420 Biochemistry.....	3

**Biology & Physics Science Requirements: (8 sem. hrs. req.)**

BIO 151 Concepts of Biology I.....	3
BIO 151L Biology Laboratory Investigation I.....	1
PHY 201 General Physics I .....	3
PHY 201L General Physics I 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

**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.

✓ Updated 09/05/2018

**LIFE SCIENCE / EARTH LICENSURE Fall 2019**  
**REQUIRES A TOTAL OF 77 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 and Participation in Science	
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**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

**Earth Science Requirements: (24 sem. hrs. req.)**

GEO 115 Physical Geology .....	3
GEO 115L Physical Geology Laboratory .....	1
GEO 116 Geological History of the Earth .....	3
GEO 116L Geological History of the Earth Laboratory .....	1
GEO 201 Mineralogy.....	3
GEO 201L Mineralogy Laboratory .....	1
GEO 208 Environmental Geology .....	3
GEO 208L Environmental Geology Laboratory .....	1
GEO 301 Structural Geology.....	3
GEO 301L Structural Geology Laboratory .....	1

**Select additional courses to total 24 hours in Geology:**

GEO 303 Field Geology .....	6
GEO 307 Geomorphology.....	3
GEO 307L Geomorphology Laboratory .....	1
GEO 308 Problems and Decisions in Environmental Geology.....	3
GEO 308L Problems and Decisions in Environmental Geology Lab ...	1
GEO 309 Surface and Groundwater Hydrology .....	3
GEO 309L Surface and Groundwater Hydrology Laboratory.....	1
GEO 401 Paleontology .....	3
GEO 401L Paleontology Laboratory .....	1
GEO 403 Sedimentology .....	3
GEO 403L Sedimentology Laboratory .....	1
PHY 250 Descriptive Astronomy .....	3

**Chemistry & Physics 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
PHY 201 General Physics I.....	3
PHY 201L General Physics I Laboratory.....	1

**Math Requirements: (6 sem. hrs. req.)**

MTH 148 Introductory Calculus I .....	3
MTH 149 Introductory Calculus II.....	3

**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.