

**EARTH / CHEMISTRY DUAL LICENSURE Fall 2020**  
**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 Research		
<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 Laboratory1	
<b>Select additional courses to total 24 hours in Geology:</b>		
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>Select additional courses to total 20 hours in Chemistry:</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

**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 / EARTH DUAL LICENSURE Fall 2020**  
**REQUIRES A TOTAL OF 73 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 Research		
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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 310	Ecology .....	3
BIO 310L	Ecology Laboratory .....	1
BIO 312	General Genetics.....	3
BIO 312L	General Genetics Laboratory .....	1
HSS 305	Human Anatomy.....	3
HSS 307	Human Physiology.....	3
<b>Select additional courses to total 27 hours in Biology and HSS:</b>		
BIO 309	Comparative Anatomy .....	3
BIO 309L	Comparative Anatomy Laboratories .....	1
BIO 395	Global Environmental Biology .....	3
BIO 411	General Microbiology .....	3
BIO 411L	General Microbiology Laboratory.....	1
BIO 466	Biology of Infectious Disease.....	3
HSS 305L	Human Anatomy Laboratory .....	1
HSS 307L	Human Physiology 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
<b>Select additional courses to total 24 hours in Geology:</b>		
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

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

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:** (12 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
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