

SECONDARY CERTIFICATION TEACHING MAJOR/MINOR INTEGRATED SCIENCE

Major Requirements

A minimum of 36 semester hours is required spread over three of the four subject areas for Integrated Science. The remaining subject area will constitute your minor. You must minor in one of these four disciplines.

Biology

Code	Title	Credit Hours
Required Courses		
BIOL 130 & 130L	Intro Org and Environ Biology and Intro Org & Envir Biol Lab/Rec	4
BIOL 140 & 140L	Intro Molec & Cellular Biology and Intr Molec & Cell Biol Lab/Rec	4
Select one course from the following:		4
BIOL 301 & 301L	Cell Biology and Cell Biology Lab	
BIOL 304 & 304L	Ecology and Ecology Lab	
BIOL 306	General Genetics	
BIOL 320	Field Biology	
BIOL 360	Population Genetics & Evolutn	
BIOL 385 & 385L	Microbiology and Microbiology Lab	
Total Credit Hours		12

Chemistry

Code	Title	Credit Hours
Required Courses		
CHEM 134 & 134L	General Chemistry IA and General Chemistry IA Lab/Rec	4
CHEM 136 & 136L	General Chemistry IIA and General Chem IIA Lab/Rec	4
OR		
CHEM 146 & 146L	General Chemistry IIB and General Chem IIB Lab/Rec	
CHEM 225	Organic Chemistry I	3
Select one of the following:		3-4
CHEM 226	Organic Chemistry II	
CHEM 227	Organic Chemistry Laboratory	
CHEM 303	Inorganic Chemistry I	
CHEM 344 & 344L	Quantitative Analysis and Quantitative Analysis Lab	
Total Credit Hours		14-15

Earth Science

Code	Title	Credit Hours
Required Courses		
GEOL 118 & 118L	Physical Geology and Physical Geology Lab/Rec	4
GEOG 203	Weather and Climate	3
ASTR 130	Introduction to Astronomy	3
ASTR 131	Introductory Astronomy Lab	1
Select one course from the following:		1-4
GEOL 218 & 218L	Historical Geology and Historical Geology Lab	
GEOL 332	Hazardous Waste Management	
GEOL 340	Remote Sensing	
GEOL 342	Physical Oceanography	
GEOL 370	Environmental Geology	
GEOL 377	Field Methods	
Total Credit Hours		12-15

Physics

Code	Title	Credit Hours
Required Courses		
Select one of the following:		4
PHYS 125 & 125L	Introductory Physics I and Introductory Physics I Lab/Dis	
PHYS 150 & 150L	General Physics I and General Physics I Lab/Dis	
Select one of the following:		4
PHYS 126 & 126L	Introductory Physics II and Intro Physics II Lab/Dis	
PHYS 151 & 151L	General Physics II and General Physics II Lab/Dis	
Select one course from the following:		4
PHYS 305	Contemporary Physics	
PHYS 360	Instrumentation for Scientists	
PHYS 401	Mechanics	
PHYS 403	Electricity and Magnetism	
PHYS 405	Optics	
PHYS 406	Thermal and Statistical Physic	
Total Credit Hours		12

Major Notes:

1. A minimum GPA of 2.75 is required for a major.
2. At least 15 hours of UM-Dearborn courses are required for a major.

Program Notes:

1. Minimum GPA's are required for program completion: 2.75 cumulative, 2.75 in major, 2.75 in minor, and 2.75 in Professional Studies.
2. Advising Policy: The student is responsible for complying with requirements described in the Undergraduate Catalog as well as on the Four Phase Checklist. Students are expected to meet with their College of Education, Health, and Human Services advisor at least once per year and in the term prior to graduation.

3. *Courses taken on a PASS/FAIL basis will NOT be accepted toward program completion.*
4. *CEHHS recommends successful program completers for State of Michigan Certification, however, it is ultimately up to the State of Michigan to issue certificates. Certain offenses on a criminal record can keep individuals from obtaining teacher certification. Please refer to The Revised School Code, Act 451 of 1976, section 380.1539b.*
5. *Initial certification program students must have passing scores on the appropriate MTTC subject area test reported to the University of Michigan-Dearborn College of Education, Health, and Human Services by electronic delivery or direct mail from Pearson Evaluation Systems prior to student teaching.*
6. *Certified teachers pursuing an endorsement in a post-degree program must complete all program requirements and have passing scores on the appropriate MTTC subject area test reported to the University of Michigan-Dearborn College of Education, Health, and Human Services by electronic delivery or direct mail from Pearson Evaluation Systems prior to a recommendation being made to the State of Michigan Department of Education.*

Minor Requirements

A minimum of 20 additional hours is required in one of the subject areas: Biology, Chemistry, Earth Science, Physics. See information under Major-Integrated Science.

Additional Notes:

1. *An overall GPA of 2.75 or better is required for a major.*
2. *At least 15 hours of UM-Dearborn courses are required for a major.*