

EXPLAINING THE COGNATE REQUIREMENTS FOR ENVIRONMENTAL SCIENCE & GEOLOGY

MATHEMATICS REQUIRMENTS

Students pursuing a degree in Environmental Science and/or the Bachelor of Science degree in Geology must successfully complete mathematics coursework through Calculus I (MAT 2010).

Students completing a Bachelor of Arts degree in Geology must complete through Elementary Functions (MAT 1800).

Initial Placement for Mathematics Sequence:

- **Freshmen:** are placed into the math sequence based on their most recent, validated ACT score (within 2 years)
- **Transfer students:** should take the Math Placement Exam to determine placement.

Students who have already completed coursework through Calculus, whether via transfer coursework, AP exam scores, CLEP exam scores, or IB credit potentially could be done with their mathematics coursework; see Advisor for verification.

Mathematics Sequence:

	MAT 0993 Beginning Algebra	MAT 1050 Algebra w/ Trig.	MAT 1800 Elementary Functions	MAT 2010 Calculus I
Course Prerequisites	No prerequisite. Students may elect to begin here if they do not wish to take the MPE ¹ or do not have a valid ACT score.	One of the following within previous year: 1. Grade of "C" or above in MAT 0993 taken @ WSU 2. Satisfactory score on MPE 3. Validated ACT math score of 21 or above	One of the following within previous year: 1. Grade of "C-" or better in MAT 1050 taken @ WSU 2. Satisfactory score on MPE 3. Validated ACT score of 26 or above	One of the following within previous year: 1. Grade of "C-" or better in MAT 1800 taken @ WSU 2. Satisfactory score on MPE 3. Validated ACT score of 29 or above
Course Options	Option 1: 3-credit, computer-based section (0 degree credits)	Option 1: Traditional 5-credit section (2 degree credits)	Option 1: Traditional 4-credit section (Full degree credit)	Option 1: Traditional 4-credit section (Full degree credit)
	Option 2: 5-credit, <i>Rising Scholars Program</i> ² option (0 degree credits)	Option 2: 7-credit <i>Pre-Emerging Scholars</i> ³ section (3 degree credits)	Option 2: 4-credit <i>Emerging Scholars Program</i> section Take concurrently with MAT 1990 (2 credits)	Option 2: 4-credit <i>Emerging Scholars Program</i> section Take concurrently with MAT 2110 (2 credits)

Additional Notes on Mathematics Requirements:

1. Mathematics Placement Exam; more information available at: testing.wayne.edu/register/math-placement-exam.php
2. Information about the Rising Scholars Program can be found here: <http://clas.wayne.edu/ceem/Rising-Scholars-Program>
3. Information about the Pre-Emerging Scholars Program and the Emerging Scholars Program can be found here: <http://clas.wayne.edu/ceem/Emerging-Scholars-Program-and-Pre-Emerging-Scholars-Program->

CHEMISTRY REQUIREMENTS

Environmental Science students:

Must complete Chemistry coursework through CHM 1240 (Organic Chemistry I) and CHM 1250 (Organic Chemistry I Lab), which are taken concurrently.

Geology students:

Students pursuing the Bachelor of Science degree must complete Chemistry coursework through CHM 1220 (General Chemistry I) and CHM 1230 (General Chemistry I Lab), which are taken concurrently.

Students pursuing a Bachelor of Arts degree possibly do not need to take Chemistry; see Advisor for more information.

Chemistry Sequence:

CHM 1040 Chemistry Skills and Reasoning	CHM 1220 + CHM 1230 General Chemistry I + Lab	CHM 1240 + CHM 1250 Organic Chemistry I + Lab
Prerequisites: <ul style="list-style-type: none">Math Department placement beyond MAT 0993; or,Grade of "C" or above in MAT 0993; or,Validated ACT Match score of 21 or above Other Notes: <ul style="list-style-type: none">CHM 1040 does not have an associated lab section but does have a discussion section	Prerequisites: <ul style="list-style-type: none">Passing score on Chemistry Placement Exam¹; or,Passing grade of "C-" or above in CHM 1040;Math Department placement in or beyond MAT 1800 Other Notes: <ul style="list-style-type: none">CHM 1220 and CHM 1230 must be taken concurrentlyOnly 2 degree credits if taken after CHM 1020; no credit if taken after CHM 1225	Prerequisites: <ul style="list-style-type: none">Passing grade of "C-" or above in CHM 1220, or CHM 1225, or CHM 1070, or other equivalent Other Notes: <ul style="list-style-type: none">CHM 1240 and CHM 1250 must be taken concurrently

Additional Notes on Chemistry Requirements:

- More information on the Chemistry Placement Exam is available here: <http://testing.wayne.edu/register/chemistry-placement-exam.php>

PHYSICS REQUIREMENTS

Students seeking a degree in Environmental Science and/or the Bachelor of Science in Geology must complete a minimum of two semesters of Physics.

Students seeking the Bachelor of Arts possibly do not need to take Physics; see Advisor for more information.

Physics Options and Sequencing

Students need to only complete one or the other of the following two Physics sequences, not both:

OPTION 1: ALGEBRA-BASED PHYSICS SEQUENCE	
PHY 2130 (General Physics) + PHY 2131 (General Physics Lab)	PHY 2140 (General Physics) + PHY 2141 (General Physics Lab)
Prerequisites: <ul style="list-style-type: none">High school algebra and trigonometry; recommended for students to be in or past MAT 1050 Other Notes: <ul style="list-style-type: none">PHY 2130 and PHY 2131 must be taken concurrentlyNo credit if taken after PHY 2170	Prerequisites: <ul style="list-style-type: none">Passing grade in PHY 2130 and PHY 2130; students declaring their major <u>after</u> Fall 2014 must have a minimum grade of "C-" or above Other Notes: <ul style="list-style-type: none">PHY 2140 and PHY 2141 must be taken concurrentlyNo credit if taken after PHY 2180
OPTION 2: CALCULUS-BASED PHYSICS SEQUENCE	
PHY 2170 (Physics for Scientists I) + PHY 2171 (Physics I Lab)	PHY 2180 (Physics for Scientists II) + PHY 2181 (Physics II Lab)
Prerequisites: <ul style="list-style-type: none">MAT 2010; must be grade of "C-" or above for students declared <u>after</u> Fall 2014 semesterMAT 2020 (Calculus II); may be completed concurrently Other Notes: <ul style="list-style-type: none">PHY 2170 and PHY 2171 must be taken concurrentlyNo credit if taken after PHY 2175	Prerequisites: <ul style="list-style-type: none">Passing grade in PHY 2170 and PHY 2171; students declaring their major <u>after</u> Fall 2014 must have a minimum grade of "C-" or aboveMAT 2020 (Calculus II) Other Notes: <ul style="list-style-type: none">PHY 2180 and PHY 2181 must be taken concurrentlyNo credit if taken after PHY 2185

There is no placement exam for Physics; students may begin their Physics sequence once their prerequisites are met