

**GEOLOGY FOR SECONDARY TEACHING
CERTIFICATION IN EARTH SCIENCE MINOR**
(Approved by Michigan Department of Education, September 8, 2005)

The minor in Geology for Secondary teachers consists of a minimum of 22 credits. Candidates for certification in this minor must pass the Michigan Test for Teacher Certification (MTTC) in Geology/Earth Science (Test #20). You must demonstrate your knowledge in following categories:

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| 1. Construct/Reflect on Scientific Knowledge | 11-20 items |
| 2. The Geosphere | 11-20 items |
| 3. The Hydrosphere | 11-20 items |
| 4. The Atmosphere and Weather | 11-20 items |
| 5. The Solar System, Galaxy, and Universe | 11-20 items |

You may access a study guide at the MTTC testing site; the courses below have been selected so that you will be well prepared for the test.

The following chart is intended to provide you a guide for scheduling your semesters and for keeping track of your grade point average.

REQUIRED GEOLOGY COURSES (14 credits)

SUBJECT/ COURSE	TITLE	CREDIT HOURS	SEMESTER	GRADE
GEMS 152	The Atmosphere and Environmental Change	4		
GES 203	Historical Geology	4		
GEMS 206	The Night Sky	2		
May choose GES 100 or combination of GES 110 and 111				
GES 100	Planet Earth	4		
OR				
GES 110	Geology in the Field	2		
AND				
GES 111	How the Earth Works	2		

ADVANCED COURSES (must select 8 credits)

SUBJECT/ COURSE	TITLE	CREDIT HOURS	SEMESTER	GRADE
GEMS 201	Evolution of Dinosaurs	2		
GES 243	Mineralogy	4		
GES 244	Petrology	4		
GES 251	Surficial Geology	4		
GES 252	Structural Geology	4		
GES 341	Regional Field Geology	2		
GES 351	Invertebrate Paleontology	4		
GES 430	Environmental Geochemistry	4		
GES 450	Hydrogeology	4		
EDS 453	Sedimentology	4		

_____ **GPA in Geology courses (2.5 is required to qualify for student teaching)**