

# GEOLOGY MAJOR FOR SECONDARY TEACHING CERTIFICATION IN EARTH SCIENCE MAJOR

*Updated April 2011*

The major in Geology for Secondary teachers consists of a minimum of 30 credits. Candidates for certification in this major must pass the Michigan Test for Teacher Certification (MTTC) in Geology/Earth Science (Test #20). You must demonstrate your knowledge in following categories:

| <b>Subarea</b>                         | <b>Approximate % of Questions on Test</b> |
|--|---|
| 1. Foundations of Scientific Inquiry   | 20%                                       |
| 2. Physical and Historical Geology     | 20%                                       |
| 3. Oceanography and Freshwater Systems | 20%                                       |
| 4. Meteorology                         | 20%                                       |
| 5. Astronomy                           | 20%                                       |

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

## ADVANCED COURSES (must select 16 credits)

| SUBJECT/<br>COURSE | TITLE                      | CREDIT<br>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               |          |       |

## A SCIENCE METHODS COURSE - REQUIRED (3 credits)

(The Science methods course is considered pedagogy and will be counted with your education courses for certification.)

| SUBJECT/<br>COURSE | TITLE   | CREDIT<br>HOURS | SEMESTER | GRADE |
|--------------------|---|-----------------|----------|-------|
| EDUC 331           | Teaching of Science in the Secondary School<br>(offered Fall Semester only)                 | 2               |          |       |
| EDUC 332           | Teaching of Science in the Secondary School<br>Field Placement (offered Fall Semester only) | 1               |          |       |

**This MUST be completed prior to the student teaching semester!**

