

Assessment Plan

Western Michigan University

Geosciences

Mission Statement: The Department of Geosciences strives to provide a curriculum broadly based in the fundamentals of geology, earth science, hydrogeology, geochemistry and geophysics. The department seeks to provide majors with the technical expertise and skills needed to gather and interpret geologic data, and the tools to communicate results of geologic investigations.

Vision Statement: The various majors in the department will be successful in graduate school and/or professional employment in private or public sectors.

Outcome: Fundamental knowledge (All undergraduate majors)

Obtain a broad knowledge of the fundamentals of the Earth Sciences and develop knowledge of its application and relationship to other fields of science.

- Track:** BS Earth Science
 BS Earth Science Education
 BS Geochemistry
 BS Geology
 BS Geophysics
 BS Hydrogeology

Start Date: 09/05/2006

Outcome Status: Active

Means of Assessment			
Assessment Method	Criterion	Schedule	Active
Pre and post test for courses GEOS 1000, GEOS 1300, GEOS 2320. Assessment Method Category: Exam-Standardized	Should exceed 75% proficiency	Annually	Yes
Use various methods(audio visual), pop up quizzes, field work to assess knowledge of course content. Test questions will be chosen from the detailed course objectives described in each undergraduate course syllabus and repeated in a final examination to evaluate the retention of principle objectives. Assessment Method Category: Course-Embedded Measure	Exceed 75% proficiency	Annually	Yes
A student survey of all the seniors will be carried out. The survey will have a standardized test covering areas the students have taken until then and also a questionnaire that may help in curriculum development Assessment Method Category: Survey-Student	All the students who take the survey test must exceed 75% proficiency. Exceptions will be allowed if the questions not answered were from courses they had not taken.	Annually subject to the number of students graduating	Yes

Related Courses

- * GEOS 1000 - Earth Studies
- * GEOS 1300 - Physical Geology
- * GEOS 2320 - Integrated Earth System Stds
- * GEOS 3010 - Minerals and Rocks
- * GEOS 3350 - Mineralogy
- * GEOS 3360 - Optical Mineralogy
- * GEOS 4340 - Probs in Geology
- * GEOS 4350 - Sedimentation & Stratigraphy
- * GEOS 5020 - Slope Stability
- * GEOS 5020 - Probs Geol/Earth Sci
- * GEOS 5090 - Surface Water Hydrology

- * GEOS 5120 - Principles of Hydrogeology
- * GEOS 5210 - Geolog & Env Remote Sensing
- * GEOS 5600 - Intro to Applied Geophysics
- * GEOS 5630 - Electrical Methods
- * GEOS 6000 - Hydrogeochemistry
- * GEOS 6300 - Structural Analysis
- * GEOS 6340 - Research Geology/Earth Sci
- * GEOS 6460 - Carbonate/Evaporite Dep Syst
- * GEOS 6500 - Slope Stabil

Related Tasks

* All faculty teaching respective courses, faculty in charge of senior survey

Description: Do assessment

Outcome: Scientific methodolgy (ALL Undergrduate majors)

Obtain the ability to understand, conduct, and communicate the scientific method

Track: BS Earth Science
 BS Earth Science Education
 BS Geochemistry
 BS Geology
 BS Geophysics
 BS Hydrogeology
 Earth Science Education--Major and Minor

Start Date: 05/05/2006

Outcome Status: Active

Means of Assessment			
Assessment Method	Criterion	Schedule	Active
Pre and post test for courses GEOS 1000, GEOS 1300, GEOS 2320 to all students entering any major in Geosciences. Assessment Method Category: Exam-Standardized	Exceed 75% proficiency	Annually (following initial program completion lag time)	Yes
Course embedded tests that may include video based questions, filed trips, pop-up quizzes and mid term tests focussed on the materials learnt.Use various methods (audio visual), pop up quizzes, field work to assess knowledge of course content.Test questions will be chosen from the detailed course objectives described in each undergraduate course syllabus and repeated in a final examination to evaluate the retention of principle objectives. Assessment Method Category: Course-Embedded Measure	75% of the students must exceed 75% proficiency		Yes
Use two specific writing intensive courses (GEOS 4320 or GEOS 4350) to strengthen writing skills. Use GEOS 4600 (except BS Earth Sciences and Earth Science Education majors) to develop communications skills. Faculty in charge of the above will report to the assessment committee their observation in the form of a short summary narrative for each student. Assessment Method Category: Course-Embedded Measure	At leats 75% of the students taking the above courses must exceed the proficiency established by the instructors of those courses.		Yes
A student survey of all the seniors will be carried out. The survey will have a standardized test covering areas the students have taken until then and also a questionnaire that may help in curriculum development Assessment Method Category:	All the students who take the survey test must exceed 75% proficiency. Exceptions will be allowed if the questions not answered were from courses they had not taken.	Annual	Yes

Means of Assessment			
Assessment Method	Criterion	Schedule	Active
Survey-Student			

Related Courses

- * GEOS 1000 - Earth Studies
- * GEOS 1300 - Physical Geology
- * GEOS 2320 - Integrated Earth System Stds
- * GEOS 4350 - Sedimentation & Stratigraphy

Related Tasks

- * Do assessment

Description: All faculty teaching respective courses, faculty in charge of senior survey

Outcome: Know fundamental of geophysics (BS Geophysics)

Obtain a broad knowledge of the fundamentals of Geophysics and develop knowledge of its application and relationship to other fields of science

Track: BS Geophysics

Start Date: 05/15/2008

Outcome Status: Active

Means of Assessment			
Assessment Method	Criterion	Schedule	Active
A student survey of all the seniors will be carried out. The survey will have a standardized test covering areas the students have taken until then and also a questionnaire that may help in curriculum development Assessment Method Category: Survey-Student	All the students who take the survey test must exceed 75% proficiency. Exceptions will be allowed if the questions not answered were from courses they had not taken.	Annual	Yes
Pre and post test for courses GEOS 1000, GEOS 1300, GEOS 2320 as well as specialized courses offered in Geophysics Assessment Method Category: Exam-Standardized	At least 70% of the students must exceed 75% proficiency	Annual	Yes
Use various methods(audio visual), pop up quizzes, field work to assess knowledge of course content. Use various methods(audio visual), pop up quizzes, field work to assess knowledge of course content. Test questions will be chosen from the detailed course objectives described in each undergraduate course syllabus and repeated in a final examination to evaluate the retention of principle objectives Assessment Method Category: Course-Embedded Measure	At least 70% of the students must exceed 75% proficiency	Bi annually	Yes

Related Courses

- * GEOS 1000 - Earth Studies
- * GEOS 1300 - Physical Geology
- * GEOS 2320 - Integrated Earth System Stds
- * GEOS 3010 - Minerals and Rocks
- * GEOS 3350 - Mineralogy
- * GEOS 3360 - Optical Mineralogy
- * GEOS 5600 - Intro to Applied Geophysics
- * GEOS 5630 - Electrical Methods

Related Tasks

- * Do assessment

Description: All faculty teaching respective courses, faculty in charge of senior survey

Outcome: Know fundamentals of hydrogeology (BS Hydrogeology)

Obtain a broad knowledge of the fundamentals of Hydrogeology and develop knowledge of its application and relationship to other fields of science

Track: BS Hydrogeology

Start Date: 05/15/2008

Outcome Status: Active

Means of Assessment			
Assessment Method	Criterion	Schedule	Active
Pre and post test for courses GEOS 1000, GEOS 1300, GEOS 2320 and specialized courses in hydrogeology Assessment Method Category: Exam-Standardized	Should exceed 75% proficiency		Yes
Use various methods(audio visual), pop up quizzes, field work to assess knowledge of course content. Use various methods(audio visual), pop up quizzes, field work to assess knowledge of course content. Test questions will be chosen from the detailed course objectives described in each undergraduate course syllabus and repeated in a final examination to evaluate the retention of principle objectives. Assessment Method Category: Course-Embedded Measure	At least 70% of the students must exceed 75% proficiency		Yes

Related Courses

- * GEOS 1000 - Earth Studies
- * GEOS 1300 - Physical Geology
- * GEOS 2320 - Integrated Earth System Stds
- * GEOS 3010 - Minerals and Rocks
- * GEOS 3350 - Mineralogy
- * GEOS 3360 - Optical Mineralogy
- * GEOS 4340 - Probs in Geology
- * GEOS 5090 - Surface Water Hydrology
- * GEOS 5120 - Principles of Hydrogeology
- * GEOS 6000 - Hydrogeochemistry
- * GEOS 7120 - Prof Field Exper

Related Tasks

- * Do assessment

Description: All faculty teaching respective courses, faculty in charge of senior survey

Outcome: Prepare for graduate studies and entry level positions (BS Geochemistry)

Obtain adequate preparation for further graduate study or for entry level positions in the public or private sector

Track: BS Geochemistry

Start Date: 05/15/2008

Outcome Status: Active

Means of Assessment			
Assessment Method	Criterion	Schedule	Active
Pre and post test for courses GEOS 1000, GEOS 1300, GEOS 2320 and specialized courses in geochemistry Assessment Method Category: Exam-Standardized	Should exceed 75% proficiency		Yes

Means of Assessment			
Assessment Method	Criterion	Schedule	Active
Use various methods(audio visual), pop up quizzes, field work to assess knowledge of course content. Use various methods(audio visual), pop up quizzes, field work to assess knowledge of course content. Test questions will be chosen from the detailed course objectives described in each undergraduate course syllabus and repeated in a final examination to evaluate the retention of principle objectives. Assessment Method Category: Course-Embedded Measure	At least 70% of the students must exceed 75% proficiency		Yes
A student survey of all the seniors will be carried out. The survey will have a standardized test covering areas the students have taken until then and also a questionnaire that may help in curriculum development Assessment Method Category: Survey-Student	All the students who take the survey test must exceed 75% proficiency. Exceptions will be allowed if the questions not answered were from courses they had not taken.		Yes

Related Courses

- * GEOS 1000 - Earth Studies
- * GEOS 1300 - Physical Geology
- * GEOS 2320 - Integrated Earth System Stds
- * GEOS 3010 - Minerals and Rocks
- * GEOS 3350 - Mineralogy
- * GEOS 3360 - Optical Mineralogy

Related Tasks

- * Do assessment

Description: All faculty teaching respective courses, faculty in charge of senior survey

Outcome: Know fundamental of geology (BS Geology)

Obtain a broad knowledge of the fundamentals of Geology and develop knowledge of its application and relationship to other fields of science

Track: BS Geology

Start Date: 05/05/2006

Outcome Status: Active

Means of Assessment			
Assessment Method	Criterion	Schedule	Active
Pre and post test for courses GEOS 1000, GEOS 1300, GEOS 2320 and specialized courses. Assessment Method Category: Exam-Standardized	Should exceed 75% proficiency		Yes
Use various methods(audio visual), pop up quizzes, field work to assess knowledge of course content. Use various methods(audio visual), pop up quizzes, field work to assess knowledge of course content. Test questions will be chosen from the detailed course objectives described in each undergraduate course syllabus and repeated in a final examination to evaluate the retention of principle objectives. Assessment Method Category: Course-Embedded Measure	At least 70% of the students must exceed 75% proficiency		Yes
A student survey of all the seniors will be carried out. The survey will have a standardized test covering areas the students have taken until then and also a questionnaire that may help in curriculum development	All the students who take the survey test must exceed 75% proficiency. Exceptions will be allowed if the questions not answered were from courses		Yes

Means of Assessment			
Assessment Method	Criterion	Schedule	Active

they had not taken.

Assessment Method Category:

Survey-Student

Related Courses

- * GEOS 1000 - Earth Studies
- * GEOS 1300 - Physical Geology
- * GEOS 2320 - Integrated Earth System Stds
- * GEOS 3010 - Minerals and Rocks
- * GEOS 3350 - Mineralogy
- * GEOS 3360 - Optical Mineralogy
- * GEOS 4350 - Sedimentation & Stratigraphy

Related Tasks

- * Do assessment

Description: All faculty teaching respective courses, faculty in charge of senior survey

Outcome: Prepare for teaching secondary education (BS Earth Science Education)

Obtain a broad knowledge of the fundamentals of the Earth Sciences and develop knowledge of its application and relationship to other fields of science in the context of secondary education

Track: BS Earth Science Education

Start Date: 05/15/2008

Outcome Status: Active

Means of Assessment			
Assessment Method	Criterion	Schedule	Active
Pre and post test for courses GEOS 1000, GEOS 1300, GEOS 2320 and specialized courses. Assessment Method Category: Exam-Standardized	Should exceed 75% proficiency		Yes
Use various methods(audio visual), pop up quizzes, field work to assess knowledge of course content. Use various methods(audio visual), pop up quizzes, field work to assess knowledge of course content. Test questions will be chosen from the detailed course objectives described in each undergraduate course syllabus and repeated in a final examination to evaluate the retention of principle objectives. Assessment Method Category: Course-Embedded Measure	At least 70% of the students must exceed 75% proficiency		Yes

Related Tasks

- * Do assessment

Description: All faculty teaching respective courses, faculty in charge of senior survey

Outcome: In depth knowledge of chosen sub set of earth sciences (MS Earth Science and MS Geology))

Obtain an in-depth knowledge of a sub discipline or a subset of disciplines within the earth sciences and related fields

Track: MS Earth Science

Start Date: 05/15/2008

Outcome Status: Active

Means of Assessment

Means of Assessment			
Assessment Method	Criterion	Schedule	Active
Use various methods(audio visual), pop up quizzes, field work to assess knowledge of course content. Use various methods(audio visual), pop up quizzes, field work to assess knowledge of course content. Test questions will be chosen from the detailed course objectives described in each undergraduate course syllabus and repeated in a final examination to evaluate the retention of principle objectives. Assessment Method Category: Course-Embedded Measure	At least 70% of the students must exceed 75% proficiency		Yes
Graduate portfolio will be reviewed annually by the committees set up and the Graduate Advisor. The results will be sent to the student and the data will be used to suggest curriculum development. Assessment Method Category: Departmental Committee Review	All the evaluated students must get a satisfactory evaluation in terms of fulfilling graduate requirements.		Yes

Related Tasks

* Do assessment

Description: All faculty teaching respective courses, faculty in charge of senior survey and individual adviser. Also portfolio review committee.

Outcome: Prepare for higher studies and entry level positions (MS Geology)

Obtain adequate preparation for further graduate study (Ph.D) or for entry level positions in the public or private sector

Track: MS Geology

Start Date: 05/15/2008

Outcome Status: Active

Means of Assessment			
Assessment Method	Criterion	Schedule	Active
Review of progress of each graduate student towards culmination of degree. Assessment Method Category: Departmental Committee Review	All students must meet stipulated progress chart and the results of the review will be shared with the student and the advisor.	Annually.	Yes
Use various methods(audio visual), pop up quizzes, field work to assess knowledge of course content. Use various methods(audio visual), pop up quizzes, field work to assess knowledge of course content. Test questions will be chosen from the detailed course objectives described in each undergraduate course syllabus and repeated in a final examination to evaluate the retention of principle objectives. Assessment Method Category: Course-Embedded Measure	At least 70% of the students must exceed 75% proficiency		Yes

Related Tasks

* Do assessment

Description: All faculty teaching respective courses, faculty in charge of senior survey and individual adviser. Also portfolio review committee.

Outcome: Develop independent research skills (Ph,D Geology with Hydrogeology emphasis)

Show evidence of innovative research and/or include suggestions for further research directions beyond their own work

Track: PhD Geology (Hydrogeology Emphasis)

Start Date: 05/15/2008

Outcome Status: Active

Means of Assessment			
Assessment Method	Criterion	Schedule	Active
Graduate portfolio will be reviewed annually by the committees set up and the Graduate Advisor. The results will be sent to the student and the data will be used to suggest curriculum development.	All the evaluated students must get a satisfactory evaluation in terms of fulfilling graduate requirements.		Yes
Assessment Method Category: Departmental Committee Review			
Use various methods(audio visual), pop up quizzes, field work to assess knowledge of course content. Use various methods(audio visual), pop up quizzes, field work to assess knowledge of course content. Test questions will be chosen from the detailed course objectives described in each undergraduate course syllabus and repeated in a final examination to evaluate the retention of principle objectives.	At least 70% of the students must exceed 75% proficiency		Yes
Assessment Method Category: Course-Embedded Measure			

Related Courses

- * GEOS 7300 - Doctoral Dissertation
- * GEOS 7350 - Graduate Research

Related Tasks

- * Do assessment

Description: All faculty teaching respective courses, faculty in charge of senior survey and individual adviser. Also portfolio review committee.

Outcome: Communication skills (ALL Undergraduate majors)

All undergraduate majors are expected to develop skills to communicate their knowledge of the specialization both orally and in written format.

Track: BS Earth Science
 BS Earth Science Education
 BS Geochemistry
 BS Geology
 BS Geophysics
 BS Hydrogeology
 Earth Science Education--Major and Minor

Start Date: 05/15/2008

Outcome Status: Active

Means of Assessment			
Assessment Method	Criterion	Schedule	Active
Skills of communication of geological knowledge will be imparted using either or the following courses. GEOS 4320, GEOS 4350, GEOS 4600 (except BS Earth Science and Earth Science Education). GEOS 4320 and 4350 are already incorporated as our writing intensive courses and either one of them is a required course.	Must meet 75% proficiency.		Yes
Assessment Method Category: Course-Embedded Measure			

Related Courses

- * GEOS 4350 - Sedimentation & Stratigraphy

Related Tasks

- * Do assessment

Description: All faculty teaching respective courses, faculty in charge of senior survey .

Outcome: Know fundamentals of BS Earth Science

Obtain a broad knowledge of the fundamentals of the Earth Sciences and develop knowledge of its application and relationship to other fields of science

Track: BS Earth Science

Outcome Status: Active

Means of Assessment			
Assessment Method	Criterion	Schedule	Active
Use various methods(audio visual), pop up quizzes, field work to assess knowledge of course content. Use various methods(audio visual), pop up quizzes, field work to assess knowledge of course content. Test questions will be chosen from the detailed course objectives described in each undergraduate course syllabus and repeated in a final examination to evaluate the retention of principle objectives Assessment Method Category: Course-Embedded Measure	At least 70% of the students must exceed 75% proficiency	Bi annually	Yes
Pre and post test for courses GEOS 1000, GEOS 1300, GEOS 2320 and specialized courses. Assessment Method Category: Exam-Standardized	At least 70% of the students must exceed 75% proficiency	Bi annually	Yes

Related Courses

- * GEOS 1000 - Earth Studies
- * GEOS 1300 - Physical Geology
- * GEOS 2320 - Integrated Earth System Stds
- * GEOS 3010 - Minerals and Rocks
- * GEOS 3350 - Mineralogy
- * GEOS 3360 - Optical Mineralogy
- * GEOS 4340 - Probs in Geology
- * GEOS 4350 - Sedimentation & Stratigraphy

Related Tasks

- * Do assessment

Description: All faculty teaching respective courses, faculty in charge of senior survey.