

Program Outcomes Assessment

MS in Earth

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General Information (Program Outcomes Assessment)

Standing Requirements

📖 Mission Statement

The Earth & Quaternary Sciences M.S. Program is designed to provide students with the strong background needed to pursue careers with government and private geoscience agencies or to continue graduate studies at the Ph.D. level.

📖 Outcomes Library

MS in Earth & Quaternary Sciences Outcome Set

Professional Communication

Acquire professional communication proficiencies

Outcome	Mapping
Professional Communication demonstrate professional communication proficiencies in core courses, thesis proposal defense, and public thesis defense, and presentations at professional meetings.	No Mapping

Professional Communities

Engage in and meaningfully contribute to diverse communities and professional environments

Outcome	Mapping
Professional Communities Engage in and contribute to diverse communities and professional environments including team oriented lab and field work and interaction with visiting scholars.	No Mapping

Professional Ethics

recognize and act on professional and ethical challenges that arise in the field or discipline

Outcome	Mapping
Ethics recognize ethical challenges by completing ENVI 588, on-line CITI Program ethics training, and faculty mentoring	No Mapping

Discipline Knowledge

Mastery of the knowledge required in their discipline or profession.

Outcome	Mapping
Discipline Knowledge Achieve mastery of discipline knowledge through MS core curriculum by completing papers, exams, and thesis/final paper projects.	No Mapping

Discipline Skills

Mastery of the skills and tools required in their discipline.

Outcome

Mapping

Discipline Skills

No Mapping

achieve mastery of skills/tools in statistical methods and data display of geoscience data sets.

 **Curriculum Map**

Active Curriculum Maps 

 **Earth & Quaternary Sciences** (See appendix)

Alignment Set: MS in Earth & Quaternary Sciences Outcome Set

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 **Communication of Outcomes**

Learning outcomes will be posted on the department of Earth and Environmental Systems web site as well as being posted on department bulletin boards in the Science building hallway.

Archive (This area is to be used for archiving pre-TaskStream assessment data and for current documents.)

 **Archive**

2011-2012 Assessment Cycle

Assessment Plan

Outcomes and Measures

MS in Earth & Quaternary Sciences Outcome Set

Professional Communication

Acquire professional communication proficiencies

Professional Communication

demonstrate professional communication proficiencies in core courses, thesis proposal defense, and public thesis defense, and presentations at professional meetings.

▼ Measure: Professional Presentations Direct - Student Artifact

Details/Description: professional presentations by MS students

Target: 60% of MS students make at least one presentation at either a national or regional meeting.

Implementation Plan (timeline): August 2012

Responsible Individual(s): C. R. Stafford

Assessment Findings

Finding per Measure

MS in Earth & Quaternary Sciences Outcome Set

Professional Communication

Acquire professional communication proficiencies

Professional Communication

demonstrate professional communication proficiencies in core courses, thesis proposal defense, and public thesis defense, and presentations at professional meetings.

▼ Measure: Professional Presentations Direct - Student Artifact

Details/Description: professional presentations by MS students

Target: 60% of MS students make at least one presentation at either a national or regional meeting.

Implementation Plan (timeline): August 2012

Responsible Individual(s): C. R. Stafford

Findings for Professional Presentations

Summary of Findings: eight of ten MS students presented at national professional meetings from 2010 to 2011. Nine presentations were given overall.

Results: Target Achievement: Exceeded

Recommendations : target exceeded but should encourage MS advisors to promote presentation of thesis data at regional or national meetings.

Reflections/Notes :

Substantiating Evidence:

 MS grad presentations (Adobe Acrobat Document) (See appendix)

These Findings are associated with the following Actions:

Professional Meetings

(Action Plan; 2011-2012 Assessment Cycle)

Overall Recommendations

Dept. should encourage MS advisors to continue to promote presentation of thesis research results at regional or national meetings. Continued travel support is a key to maintaining the current level of participation.

Overall Reflection

No text specified

 **Action Plan**

Actions

MS in Earth & Quaternary Sciences Outcome Set

Professional Communication

Acquire professional communication proficiencies

Professional Communication

demonstrate professional communication proficiencies in core courses, thesis proposal defense, and public thesis defense, and presentations at professional meetings.

▼ **Action: Professional Meetings**

This Action is associated with the following Findings

Findings for Professional Presentations

(Assessment Plan and Assessment Findings; 2011-2012 Assessment Cycle)

Summary of Findings: eight of ten MS students presented at national professional meetings from 2010 to 2011. Nine presentations were given overall.

Action Details: inform students and their advisors that presentations at national/regional meetings is an essential part of scholarly research and professional development

Implementation Plan (timeline): by Spring 2014

Key/Responsible Personnel: T. Rathburn

Measures: percent of students that present at national/regional meetings should be greater than 60%

Resource Allocations:

Priority: Medium

 **Status Report**

Action Statuses

MS in Earth & Quaternary Sciences Outcome Set

Professional Communication

Acquire professional communication proficiencies

Professional Communication

demonstrate professional communication proficiencies in core courses, thesis proposal defense, and public thesis defense, and presentations at professional meetings.

▼ Action: Professional Meetings

Action Details: inform students and their advisors that presentations at national/regional meetings is an essential part of scholarly research and professional development

Implementation Plan (timeline): by Spring 2014

Key/Responsible Personnel: T. Rathburn

Measures: percent of students that present at national/regional meetings should be greater than 60%

Resource Allocations:

Priority: Medium

Status for Professional Meetings

No Status Added

Status Summary

No new data are available at this time. We will collect data on presentations in Spring 2014

Summary of Next Steps

Outcome associated with Ethics will be evaluated in the 2012-13 assessment cycle.

2012-2013 Assessment Cycle

Assessment Plan

Outcomes and Measures

MS in Earth & Quaternary Sciences Outcome Set

Professional Communication

Acquire professional communication proficiencies

Professional Communication

No measures specified

demonstrate professional communication proficiencies in core courses, thesis proposal defense, and public thesis defense, and presentations at professional meetings.

Professional Ethics

recognize and act on professional and ethical challenges that arise in the field or discipline

Ethics

recognize ethical challenges by completing ENVI 588, on-line CITI Program ethics training, and faculty mentoring

▼ Measure: Professional Ethics Indirect - Survey

Details/Description: Successfully complete (grade of B or higher) ENVI 588 (Geosciences Research Methods).

Target: 100 percent completion of course

Implementation Plan (timeline): May 2013

Responsible Individual(s): T. Rathburn

Assessment Findings

Finding per Measure

MS in Earth & Quaternary Sciences Outcome Set

Professional Communication

Acquire professional communication proficiencies

Professional Communication

No measures specified

demonstrate professional communication proficiencies in core courses, thesis proposal defense, and public thesis defense, and presentations at professional meetings.

Professional Ethics

recognize and act on professional and ethical challenges that arise in the field or discipline

Ethics

recognize ethical challenges by completing ENVI 588, on-line CITI Program ethics training, and faculty mentoring

▼ **Measure:** Professional Ethics Indirect - Survey

Details/Description: Successfully complete (grade of B or higher) ENVI 588 (Geosciences Research Methods).

Target: 100 percent completion of course

Implementation Plan (timeline): May 2013

Responsible Individual(s): T. Rathburn

Findings for Professional Ethics

Summary of Findings: CITI on-line ethics training was completed by 8 of 8 students enrolled in ENVI 588 a required core course in the MS program. All students completed/passed course.

Results: Target Achievement: Met

Recommendations : Continue to require CITI training in ENVI 588.

Reflections/Notes :

These Findings are associated with the following Actions:

Professional Ethics

(Action Plan; 2012-2013 Assessment Cycle)

Overall Recommendations

No text specified

Overall Reflection

No text specified

Action Plan

Actions

MS in Earth & Quaternary Sciences Outcome Set

Professional Ethics

recognize and act on professional and ethical challenges that arise in the field or discipline

Ethics

recognize ethical challenges by completing ENVI 588, on-line CITI Program ethics training, and faculty mentoring

▼ **Action:** Professional Ethics

This Action is associated with the following Findings

Findings for Professional Ethics

(Assessment Plan and Assessment Findings; 2012-2013 Assessment Cycle)

Summary of Findings: CITI on-line ethics training was completed by 8 of 8 students enrolled in ENVI 588 a required core course in the MS program. All students completed/passed course.

Action Details: continue to use CITI ethics training in ENVI 588.

Implementation Plan (timeline): ENVI 588 will be offered again in spring 2014

Key/Responsible Personnel: T. Rathburn

Measures: continue to determine completion rate of CITI training in ENVI 588

Resource Allocations:

Priority: Medium

Status Report

Action Statuses

MS in Earth & Quaternary Sciences Outcome Set

Professional Ethics

recognize and act on professional and ethical challenges that arise in the field or discipline

Ethics

recognize ethical challenges by completing ENVI 588, on-line CITI Program ethics training, and faculty mentoring

▼ Action: Professional Ethics

Action Details: continue to use CITI ethics training in ENVI 588.

Implementation Plan (timeline): ENVI 588 will be offered again in spring 2014

Key/Responsible Personnel: T. Rathburn

Measures: continue to determine completion rate of CITI training in ENVI 588

Resource Allocations:

Priority: Medium

Status for Professional Ethics

Current Status: Completed

Resource Allocation(s) Status:

Next Steps/Additional Information:

Status Summary

new data available spring 2015.

Summary of Next Steps

next student learning outcome to be determined summer 2013

2013-2014 Assessment Cycle

Assessment Plan

Outcomes and Measures

MS in Earth & Quaternary Sciences Outcome Set

Discipline Knowledge

Mastery of the knowledge required in their discipline or profession.

Discipline Knowledge

Achieve mastery of discipline knowledge through MS core curriculum by completing papers, exams, and thesis/final paper projects.

▼ Measure: Graduate Survey Indirect - Survey


Details/Description: Survey of students that graduated from program (questions that targeted knowledge acquired).

Target: respondents indicate that discipline knowledge was mastered and prepared them for their career

Implementation Plan (timeline): Fall 2013

Responsible Individual(s): T. Rathburn, C. Stafford

Supporting Attachments:

 Fall 2013 Graduate Survey SkillsQuestions.pdf (Adobe Acrobat Document) (See appendix) survey results

Assessment Findings

Finding per Measure

MS in Earth & Quaternary Sciences Outcome Set

Discipline Knowledge

Mastery of the knowledge required in their discipline or profession.

Discipline Knowledge

Achieve mastery of discipline knowledge through MS core curriculum by completing papers, exams, and thesis/final paper projects.

▼ Measure: Graduate Survey Indirect - Survey


Details/Description: Survey of students that graduated from program (questions that targeted knowledge acquired).

Target: respondents indicate that discipline knowledge was mastered and prepared them for their career

Implementation Plan (timeline): Fall 2013

Responsible Individual(s): T. Rathburn, C. Stafford

Supporting Attachments:

 Fall 2013 Graduate Survey SkillsQuestions.pdf (Adobe Acrobat Document) (See appendix) survey results

Findings for Graduate Survey

Summary of Findings: survey found that student self-assessment indicated that they had attained mastery of discipline based knowledge.

Results: Target Achievement: Met

Recommendations : maintain core curriculum as is.

Reflections/Notes :

Overall Recommendations

Core MS courses provide mastery of discipline base knowledge and therefore should be maintained as is.

Overall Reflection

Survey provided some insight into adequacy of core curriculum.

Action Plan

Actions

MS in Earth & Quaternary Sciences Outcome Set

Discipline Skills

Mastery of the skills and tools required in their discipline.

Discipline Skills

acheive mastery of skills/tools in statistical methods and data display of geoscience data sets.

▼ Action: Skills

This Action is associated with the following Findings

No supporting Findings have been linked to this Action.

Action Details: assess discipline skill of students.

Implementation Plan (timeline): Fall 2014

Key/Responsible Personnel: T. Rathburn, C. Stafford

Measures: outcomes of statistics, GIS and other skill course taken by students.

Resource Allocations:

Priority: Medium

Status Report

Action Statuses

MS in Earth & Quaternary Sciences Outcome Set

Discipline Skills

Mastery of the skills and tools required in their discipline.

Discipline Skills

acheive mastery of

▼ Action: Skills

skills/tools in statistical methods and data display of geoscience data sets.

Action Details: assess discipline skill of students.

Implementation Plan (timeline): Fall 2014

Key/Responsible Personnel: T. Rathburn, C. Stafford

Measures: outcomes of statistics, GIS and other skill course taken by students.

Resource Allocations:

Priority: Medium

Status for Skills

Current Status: Not started

Resource Allocation(s) Status: None

Next Steps/Additional Information: collect data

Status Summary

not started

Summary of Next Steps

collect data



2014-2015 Assessment Cycle

Assessment Plan

Outcomes and Measures

MS in Earth & Quaternary Sciences Outcome Set

Professional Communication

Acquire professional communication proficiencies

Professional Communication

demonstrate professional communication proficiencies in core courses, thesis proposal defense, and public thesis defense, and presentations at professional meetings.

▼ **Measure:** Professional Presentations
Direct - Student Artifact

Details/Description: professional presentations by MS students

Target: 60% of MS students make at least one presentation at either a national or regional meeting.

Implementation Plan (timeline): August 2015

Responsible Individual(s): C. R. Stafford, T. Rathburn

Assessment Findings

Finding per Measure

MS in Earth & Quaternary Sciences Outcome Set

Professional Communication

Acquire professional communication proficiencies

Professional Communication

demonstrate professional communication proficiencies in core courses, thesis proposal defense, and public thesis defense, and presentations at professional meetings.

▼ **Measure:** Professional Presentations
Direct - Student Artifact

Details/Description: professional presentations by MS students

Target: 60% of MS students make at least one presentation at either a national or regional meeting.

Implementation Plan (timeline): August 2015

Responsible Individual(s): C. R. Stafford, T. Rathburn

Findings for Professional Presentations

Summary of Findings: 90% of MS graduate students gave presentations at either national or regional professional meetings (either Geological Society of American national meetings or GSA sectional meeting)

Results: Target Achievement: Exceeded

Recommendations : advisers should continue to encourage their students to present their research findings at professional meetings and the department should continue to provide support for travel to meetings.

Reflections/Notes :



Overall Recommendations

Dept. should encourage MS advisers to continue to promote presentation of thesis research results at regional or national meetings. Continued travel support is a key to maintaining the current level of participation.

Overall Reflection

No text specified

Action Plan

Status Report



2015-2016 Assessment Cycle

Assessment Plan

Outcomes and Measures

MS in Earth & Quaternary Sciences Outcome Set

Discipline Skills

Mastery of the skills and tools required in their discipline.

Discipline Skills

achieve mastery of skills/tools in statistical methods and data display of geoscience data sets.

▼ **Measure:** Quantitative Skills
Direct - Student Artifact

Details/Description: successful completion of ENVI 588.

Target: 90% of MS students is the target success rate for completion of this course.

Implementation Plan (timeline): collect and analyze data by May 2016

Responsible Individual(s): EES Graduate Affairs Committee Chair

Assessment Findings

Finding per Measure

MS in Earth & Quaternary Sciences Outcome Set

Discipline Skills

Mastery of the skills and tools required in their discipline.

Discipline Skills

achieve mastery of skills/tools in statistical methods and data display of geoscience data sets.

▼ **Measure:** Quantitative Skills
Direct - Student Artifact

Details/Description: successful completion of ENVI 588.

Target: 90% of MS students is the target success rate for completion of this course.

Implementation Plan (timeline): collect and analyze data by May 2016

Responsible Individual(s): EES Graduate Affairs Committee Chair

Findings for Quantitative Skills

No Findings Added

Overall Recommendations

No text specified

Overall Reflection

No text specified

 **Action Plan**


 **Status Report**

2016-2017 Assessment Cycle

 **Assessment Plan**

 **Assessment Findings**

 **Action Plan**


 **Status Report**

2017-2018 Assessment Cycle

 **Assessment Plan**

 **Assessment Findings**

 **Action Plan**


 **Status Report**

2018-2019 Assessment Cycle

 **Assessment Plan**

 **Assessment Findings**

 **Action Plan**

 **Status Report**

2019-2020 Assessment Cycle

 **Assessment Plan**

 **Assessment Findings**

 **Action Plan**

 **Status Report**

Appendix

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- A. **Earth & Quaternary Sciences** (Curriculum Map)
 - B. **MS grad presentations** (Adobe Acrobat Document)
 - C. **Fall 2013 Graduate Survey SkillsQuestions.pdf** (Adobe Acrobat Document)
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