Program Outcomes Assessment

PHD in Spatial and Earth Sciences

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General Information (Program Outcomes Assessment)

Standing Requirements

Mission Statement

The doctoral program in Spatial and Earth Sciences is designed to provide advanced study in geography and earth sciences.

Outcomes Library

PHD in Spatial and Earth Sciences Outcome Set

Professional Communication
Aquire professional communication proficiencies.

Outcome	Mapping
Professional Communication demonstrate professional communication proficiencies in cores courses, thesis proposal defense, 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 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 and act on professional and ethical challenges by completing either IRB or CITI training and ENVI 611.	No Mapping

Discipline Knowlege
Mastery of the knowledge required in their concentration.

Outcome	Mapping
Discipline Knowledge Achieve mastery of knowledge required in their concentration or profession through program core and electives by completing papers, exams, and a dissertation project.	No Mapping

Discipline Skills

Mastery of skills/tools required in discipline/concentration.

Outcome	Mapping
Discipline Skills Achieve mastery of skills/tools required in discipline/concentration in quantitative methods or hands-on lab and field work.	No Mapping

Curriculum Map

Active Curriculum Maps

PhD Mapping (See appendix)
Alignment Set: PHD in Spatial and Earth Sciences Outcome Set
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Communication of Outcomes

Learning outcomes for doctoral program will be posted on EES web site.

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

PHD in Spatial and Earth Sciences Outcome Set

Professional Communication
Aquire professional communication proficiencies.

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

Measure: Professional presentation
Direct - Other

Details/Description: presentation at regional or national professional meeting.
Target: 60 % of doctoral students present at professional meeting
Implementation Plan (timeline): August 2012
Responsible Individual(s): C. R. Stafford

Assessment Findings

Finding per Measure

PHD in Spatial and Earth Sciences Outcome Set

Professional Communication
Aquire professional communication proficiencies.

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

Measure: Professional presentation
Direct - Other

Details/Description: presentation at regional or national professional meeting.
Target: 60 % of doctoral students present at professional meeting
Implementation Plan (timeline): August 2012
Responsible Individual(s): C. R. Stafford

Findings for Professional presentation

Summary of Findings: four of eight doctoral students presented at professional meetings from 2010 - 2012. Five total presentations were made.
Results: Target Achievement: Not Met
Recommendations : advisors should encourage students to make at least one presentation at a professional meeting.
Reflections/Notes :
Substantiating Evidence:
PhD presentations (Adobe Acrobat Document) (See appendix)

These Findings are associated with the following Actions:

Professional Presentations
(Action Plan; 2011-2012 Assessment Cycle)

Overall Recommendations

percentage of doctoral students presenting at professional meetings falsl short of 60% goal set for this measure. A concerted effort needs to be made by advisors to encourage more doctoral students to make presentations of their research at meeting .

Overall Reflection

Advisors and students need to be made aware of funding opportunities in the department and graduate college for travel to give presentations at professional meetings.

Action Plan

Actions

PHD in Spatial and Earth Sciences Outcome Set

Professional Communication
Aquire professional communication proficiencies.

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

Action: Professional Presentations

This Action is associated with the following Findings

Findings for Professional presentation
(Assessment Plan and Assessment Findings; 2011-2012 Assessment Cycle)

Summary of Findings: four of eight doctoral students presented at professional meetings from 2010 - 2012. Five total presentations were made.

Action Details: inform doctoral 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: High

Status Report

Action Statuses

PHD in Spatial and Earth Sciences Outcome Set

Professional Communication

Aquire professional communication proficiencies.

Professional Communication

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

Action: Professional Presentations

Action Details: inform doctoral 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: High

Status for Professional Presentations

Current Status: Completed

Resource Allocation(s) Status:

Next Steps/Additional Information:

Status Summary

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

Summary of Next Steps

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

2012-2013 Assessment Cycle

Assessment Plan

Outcomes and Measures

PHD in Spatial and Earth Sciences Outcome Set

Professional Communication

Aquire professional communication proficiencies.

Professional Communication

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

No measures specified

Professional Ethics

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

Ethics

recognize and act on professional and ethical challenges by completing either IRB or CITI training and ENVI 611.

Measure: Professional Ethics
Indirect - Survey

Details/Description: Complete CITI program in ethics for either laboratory research or human subject research.

Target: 90 percent of doctoral students should complete this ethics training.

Implementation Plan (timeline): by May 2013

Responsible Individual(s): T. Rathburn

Assessment Findings

Finding per Measure

PHD in Spatial and Earth Sciences Outcome Set

Professional Communication

Aquire professional communication proficiencies.

Professional Communication

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

No measures specified

Professional Ethics

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

Ethics
recognize and act on professional and ethical challenges by completing either IRB or CITI training and ENVI 611.

Measure: Professional Ethics
Indirect - Survey

Details/Description: Complete CITI program in ethics for either laboratory research or human subject research.

Target: 90 percent of doctoral students should complete this ethics training.

Implementation Plan (timeline): by May 2013

Responsible Individual(s): T. Rathburn

Findings for Professional Ethics

Summary of Findings: CITI ethics training completed by 4 of 4 doctoral students enrolled in ENVI 733 seminar spring 2013. ENVI 733 is a required core class in the new PhD program. CITI completion reports on file in department. Climate and Environmental ethics were also a topic in ENVI 733. Students completed paper assignment.

Results: Target Achievement: Exceeded

Recommendations : On-line CITI training is an effective way to insure that doctoral students are exposed to ethical issues in the conduct of research or human subject research.

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

PHD in Spatial and Earth Sciences Outcome Set

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

Ethics
recognize and act on professional and ethical challenges by completing either IRB or CITI training and ENVI 611.

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 ethics training completed by 4 of 4 doctoral students enrolled in ENVI 733 seminar spring 2013. ENVI 733 is a required core class in the new PhD program. CITI completion reports on file in department. Climate and Environmental ethics were also a topic in ENVI 733. Students completed paper assignment.

Action Details: continue to have doctoral students take CITI on-line training as a part of ENVI 733.

Implementation Plan (timeline): ENVI 733 will be offered again spring 2015.

Key/Responsible Personnel: T. Rathburn

Measures: continue to collect CITI completion reports and place on file in dept.

Resource Allocations:

Priority: Medium

Status Report

Action Statuses

PHD in Spatial and Earth Sciences Outcome Set

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

Ethics
recognize and act on professional and ethical challenges by completing either IRB or CITI training and ENVI 611.

Action: Professional Ethics

Action Details: continue to have doctoral students take CITI on-line training as a part of ENVI 733.

Implementation Plan (timeline): ENVI 733 will be offered again spring 2015.

Key/Responsible Personnel: T. Rathburn

Measures: continue to collect CITI completion reports and place on file in dept.

Resource Allocations:

Priority: Medium

Status for Professional Ethics

Current Status: Completed

Resource Allocation(s) Status:

Next Steps/Additional Information:

Status Summary

No text specified

Summary of Next Steps

No text specified

2013-2014 Assessment Cycle

Assessment Plan

Outcomes and Measures

PHD in Spatial and Earth Sciences Outcome Set

Discipline Knowlege

Mastery of the knowledge required in their concentration.

Discipline Knowlege

Achieve mastery of knowledge required in their concentration or profession through program core and electives by completing papers, exams, and a dissertation project.

Measure: Graduate Survey
Indirect - Survey

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

Target: respondents indicate that discipline knowlege 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)

Assessment Findings

Finding per Measure

PHD in Spatial and Earth Sciences Outcome Set

Discipline Knowlege

Mastery of the knowledge required in their concentration.

Discipline Knowlege

Achieve mastery of knowledge required in their concentration or profession through program core and electives by completing papers, exams, and a dissertation project.

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

Target: respondents indicate that discipline knowlege 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)

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 currently configured.

Reflections/Notes :

Substantiating Evidence:

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

Overall Recommendations

Core PhD courses provide mastery of discipline base knowledge and therefore should be maintained as currently configured.

Overall Reflection

Survey provided some insight into adequacy of core curriculum.

Action Plan

Actions

PHD in Spatial and Earth Sciences Outcome Set

Discipline Skills
Mastery of skills/tools required in discipline/concentration.

Discipline Skills
Achieve mastery of skills/tools required in discipline/concentration in quantitative methods or hands-on lab and field work.

Action: Skills

This Action is associated with the following Findings
No supporting Findings have been linked to this Action.

Action Details: assess quantitative based skills of students

Implementation Plan (timeline): beginning Fall 2014

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

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

Resource Allocations:

Priority: Medium

Status Report

Action Statuses

PHD in Spatial and Earth Sciences Outcome Set

Discipline Skills

Mastery of skills/tools required in discipline/concentration.

Discipline Skills

Achieve mastery of skills/tools required in discipline/concentration in quantitative methods or hands-on lab and field work.

Action: Skills

Action Details: assess quantitative based skills of students

Implementation Plan (timeline): beginning Fall 2014

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

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

Resource Allocations:

Priority: Medium

Status for Skills

Current Status: Not started

Resource Allocation(s) Status:

Next Steps/Additional Information: collect data

Status Summary

collect data in fall 2014

Summary of Next Steps

collect data

2014-2015 Assessment Cycle

Assessment Plan

Outcomes and Measures

PHD in Spatial and Earth Sciences Outcome Set

Professional Communication

Aquire professional communication proficiencies.

Professional Communication

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

Measure: Professional presentation
Direct - Other

Details/Description: presentation at regional or national professional meeting.

Target: 60 % of doctoral students present at professional meeting

Implementation Plan (timeline): August 2015

Responsible Individual(s): T. Rathburn

Assessment Findings

Finding per Measure

PHD in Spatial and Earth Sciences Outcome Set

Professional Communication

Aquire professional communication proficiencies.

Professional Communication

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

Measure: Professional presentation
Direct - Other

Details/Description: presentation at regional or national professional meeting.

Target: 60 % of doctoral students present at professional meeting

Implementation Plan (timeline): August 2015

Responsible Individual(s): T. Rathburn

Findings for Professional presentation

Summary of Findings: 66% of doctoral students over the past two years have made presentations at national or regional meetings (GSA, AAG)

Results: Target Achievement: Met

Recommendations : advisers should continue to encourage doctoral students to present their research findings at national and/or regional professional meetings.

Reflections/Notes :

Overall Recommendations

advisers should continue to encourage doctoral students to present their research findings at national and/or regional professional meetings. And the department should continue to provide travel funding to doctoral students so that they can present their research findings and enhance their professional communication skills.

Overall Reflection

No text specified

Action Plan

Actions

PHD in Spatial and Earth Sciences Outcome Set

Discipline Skills
Mastery of skills/tools required in discipline/concentration.

Discipline Skills
Achieve mastery of skills/tools required in discipline/concentration in quantitative methods or hands-on lab and field work.

Action: Skills

This Action is associated with the following Findings
No supporting Findings have been linked to this Action.

Action Details: assess discipline based skills of students

Implementation Plan (timeline): beginning Fall 2014

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

Measures: to be determined

Resource Allocations:

Priority: Medium

Status Report

Action Statuses

PHD in Spatial and Earth Sciences Outcome Set

Discipline Skills
Mastery of skills/tools required in discipline/concentration.

Discipline Skills
Achieve mastery of skills/tools required in discipline/concentration in quantitative methods or hands-on lab and field work.

Action: Skills

Action Details: assess discipline based skills of students

Implementation Plan (timeline): beginning Fall 2014

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

Measures: to be determined

Resource Allocations:

Priority: Medium

Status for Skills

No Status Added

Status Summary

No text specified

Summary of Next Steps

No text specified

2015-2016 Assessment Cycle

Assessment Plan

Outcomes and Measures

PHD in Spatial and Earth Sciences Outcome Set

Discipline Skills
Mastery of skills/tools required in discipline/concentration.

Discipline Skills
Achieve mastery of skills/tools required in discipline/concentration in quantitative methods or hands-on lab and field work.

Measure: Field/Lab Skills
Direct - Portfolio

Details/Description: Acquire field and lab experience as a part of doctoral research project or through a field course.

Target: 100% of doctoral students should acquire skills associated with their discipline specialization.

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

Responsible Individual(s): EES Graduate Affairs Committee Chair

Measure: Quantitative Skills
Direct - Student Artifact

Details/Description: Successful completion of quantitative course work (e.g., ENVI 645) and/or GIS and Remote Sensing graduate courses

Target: satisfactory completion of courses by 90% of doctoral students.

Implementation Plan (timeline): collect data by May 2016

Responsible Individual(s): EES Graduate Affairs Committee Chair

Assessment Findings

Finding per Measure

PHD in Spatial and Earth Sciences Outcome Set

Discipline Skills
Mastery of skills/tools required in discipline/concentration.

Discipline Skills
Achieve mastery of skills/tools required in discipline/concentration in quantitative methods or hands-on lab and field work.

Measure: Field/Lab Skills
Direct - Portfolio

Details/Description: Acquire field and lab experience as a part of doctoral research project or through a field course.

Target: 100% of doctoral students should acquire skills associated with their discipline specialization.

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

Responsible Individual(s): EES Graduate Affairs Committee Chair

Findings for Field/Lab Skills

No Findings Added

Measure: Quantitative Skills
Direct - Student Artifact

Details/Description: Successful completion of quantitative course work (e.g., ENVI 645) and/or GIS and Remote Sensing graduate courses

Target: satisfactory completion of courses by 90% of doctoral students.

Implementation Plan (timeline): collect 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

A. **PhD Mapping** (Curriculum Map)
B. **PhD presentations** (Adobe Acrobat Document)
C. **Fall 2013 Graduate Survey SkillsQuestions.pdf** (Adobe Acrobat Document)
D. **Fall 2013 Graduate Survey SkillsQuestions.pdf** (Adobe Acrobat Document)