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<th>Program Learning Outcomes</th>
<th>Curriculum Mapping</th>
<th>Assessment Methods</th>
<th>Use of Assessment Data</th>
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<td>What do you expect all students who complete the program to know, or be able to do?</td>
<td>Where is the outcome learned/assessed (courses, internships, student teaching, clinical, etc.)?</td>
<td>How do students demonstrate their performance of the program learning outcomes? How does the program measure student performance? Distinguish your direct measures from indirect measures.</td>
<td>How does the program use assessment results to recognize success and &quot;close the loop&quot; to inform additional program improvement? How/when is this data shared, and with whom?</td>
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Job skills: Students will have sufficient knowledge required in current operational and research environments and be familiar with current application tools in their field.

Special exams: This will be tested during the qualifying exam for Masters degree, and during the comprehensive exam, both oral and written, for the Ph.D degree.

By peer and faculty interaction: Students will demonstrate their knowledge in communication by drawing parallels and links between different research papers and by knowing the main questions driving research in their field.

Faculty in the sub-disciplines will meet to discuss the performance of the students and to further develop opportunities for the students to develop their skills.
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<th>Research capability: Students will be familiar with current research trends and literature in respective areas and be able to carry out research in their field using the appropriate method of their field. Students will be able to generate hypotheses, to think of new research questions, and to evaluate alternative lines of inquiry.</th>
<th>Thesis research: This will be demonstrated during their thesis research, specifically prospective presentation, technical writing, and final defense. By research quality: The students’ ability to carry out the research in their field will be evaluated based on their research output for their theses. Students will demonstrate this knowledge by taking ownership of their own research projects and by generating new ideas. They will further demonstrate their ability to engage in research by thinking speculatively on their feet – either during the examination or during presentations and seminars.</th>
<th>Faculty will evaluate the quality of the theses in the department. They will seek to identify patterns of strengths and weaknesses in order to improve the graduate program.</th>
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<td>Communication skills: Students will be able to present research efficiently in writing and verbal communication, including writing peer-reviewed journal papers. Presentation/publication: This will be demonstrated by the students’ presentations in class and at conferences, as well as with peer-reviewed publications depending on the case. By demonstrating their skills during examinations as well as during presentations and seminars. By post-graduation career development: We constantly contact our graduates and survey their career development.</td>
<td>Faculty will assess the ability of the students to work on their own research agenda. This will be monitored continuously to ensure progress over the students’ course of study.</td>
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1. **It is not recommended to try and assess (in depth) all of the program learning outcomes every semester. It is best practice to plan out when each outcome will be assessed and focus on 1 or 2 each semester/academic year. Describe the responsibilities, timeline, and the process for implementing this assessment plan.**

   Our department is in the first wave of program reviews, starting in spring 2016. We will be developing a detailed plan at this time. Faculty will meet at regular intervals (every 3 years) to review the program and the course offerings. Minor adjustments will be made on an ongoing basis. If, as a result of this consultation, the faculty find that major adjustments are needed, they will launch a more extensive process to revise the program.

   Undergraduate program directors will be responsible for collecting feedback from their advisees and from course evaluations to have ongoing evaluation of our program.

   We will appoint someone responsible for alumni relations in the department who will be able to collect feedback and carry out career outcomes assessment of our programs. These will feed into the periodic reviews held by the faculty.
The chair performs exit interviews with all graduating seniors to obtain overall feedback on the program.

2. Please explain how these assessment efforts are coordinated with Madrid (courses and/or program)?

SLU-Madrid only offers introductory classes in EAS subjects. We do not at this time coordinate with SLU-Madrid. We are planning to review this situation during the upcoming program review.

3. The program assessment plan should be developed and approved by all faculty in the department. In addition, the program assessment plan should be developed to include student input and external sources (e.g., national standards, advisory boards, employers, alumni, etc.). Describe the process through which your academic unit created this assessment plan. Include the following:

   a. Timeline regarding when or how often this plan will be reviewed and revised. (This could be aligned with program review.)
      Our department will be carrying out program reviews starting in spring 2016 – we will revise and expand the plan at that time.

   b. How students were included in the process and/or how student input was gathered and incorporated into the assessment plan.
      The chair has been carrying out exit interviews with all graduating seniors. Their suggestions have been taken into consideration in the elaboration of this plan.

   c. What external sources were consulted in the development of this assessment plan?
      We consulted other science departments (Chemistry, Biology). Within our department, the individual disciplines consult the guidelines from the governing professional bodies (e.g., American Meteorological Society for the Meteorology program).

   d. Assessment of the manageability of the plan in relation to departmental resources and personnel
      This plan will require extra work from department members. The department is working on implementing a new workload policy which will help to clarify different tasks and expected contributions from people in the department. Once the workload policy is in place next fall, we will be able to revise the implementation of this plan (this will also coincide with the completion of our department program reviews which are scheduled to start in spring 2016.)