

FLORIDA GULF COAST UNIVERSITY
 College of Arts and Sciences
Environmental Science Program
Integrated Program Matrix
Synthesis & Revision – May 2008

University and Program Learning Goals and Outcomes	Program Assessment Plan and Criteria	Use of Assessment Results for Continuous Program Improvement 2004-05 (Due February 05)	Use of Assessment Results for Continuous Program Improvement 2005-06 (Due February 06)	Use of Assessment Results for Continuous Program Improvement 2006-07 (Due February 07)
	<p>The Master of Science in Environmental Science is assessed and measured in the following ways:</p> <ol style="list-style-type: none"> 1. Preparation and review of a research proposal. 2. Completion and defense of thesis. 3. Evaluation of the program curriculum by the academic coordinator, faculty, and external reviewers. 4. Post-graduate surveys of the program. 5. Student grades on core courses in the program of study. 6. Successful completion of the program as measured by graduation and attrition rates. <p><i>Details concerning assessment strategies found on last page.</i></p>			

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University and Program Learning Goals and Outcomes	Program Assessment Plan and Criteria	Use of Assessment Results for Continuous Program Improvement 2004-05 (Due February 05)	Use of Assessment Results for Continuous Program Improvement 2005-06 (Due February 06)	Use of Assessment Results for Continuous Program Improvement 2006-07 (Due February 07)
<p><u>Critical Thinking</u> (University Level) Graduates of advanced degree programs at Florida Gulf Coast University will:</p> <p>Demonstrate excellence in critical thinking, problem solving, analysis, and strategic planning.</p> <p><u>Critical Thinking</u> (Program Level) Graduates of the Master of Science in Environmental Science will develop skills and experience in:</p> <p>A) an understanding of, and the ability to apply, the scientific method, and the capacity to design and conduct a relevant research investigation using qualitative and quantitative techniques [EVR6022, EVS6970]</p> <p>B) the ability to understand and apply systems analysis and simulation modeling techniques to environmental education, management, or research [EVR6022, EVS6970, OCB6635, PCB6064C, URP6421, EVR5925]</p> <p>C) advanced ability to use appropriate technologies (statistical analyses, geographic information systems, field and laboratory techniques) [EVR6022, EVS6970, OCB6635, PCB6064C, EVR5145, OCB6931, OCG6053, GLY5658]</p> <p>J) an understanding of the concept of sustainability and its application to the formation and implementation of public policy, decision making, problem identification, ethical dilemmas, creative problem solving, and conflict resolution [EVR6322, URP6421, EVR5925, EVR6937]</p> <p>K) the ability to function in a professional setting [EVR6022, EVS6970, URP6421, EVR6937]</p>	<p><u>Plan</u>: Outcome A) assessed via strategies: 1. Preparation and review of a research proposal, using Proposal Review Rubric. 2. Completion and defense of thesis. 3. Evaluation of the program curriculum by the academic coordinator, graduate faculty, and external reviewers. <u>Criteria</u>: All students must score “good” to “excellent” on all survey questions within the Proposal Review Rubric. 75% or greater should score “very good” to “excellent.” All students must successfully defend and complete the writing of their thesis. The committee of evaluators must agree, based on majority rule, on proposed changes of the curriculum.</p> <p><u>Plan</u>: Outcome B, C, & J assessed via strategies: 3. Evaluation of the program curriculum by the academic coordinator, faculty, and external reviewers. 5. Student grades on core courses in the program of study. <u>Criteria</u>: The committee of evaluators must agree, based on majority rule, on proposed changes of the curriculum. Assessment strategy 5 will be developed in a subsequent assessment round.</p> <p><u>Plan</u>: Outcome K) assessed via strategies: 4. Post-graduate surveys of the program. 6. Successful completion of the program as measured by graduation and attrition rates. <u>Criteria</u>: These assessment tools will be developed in a subsequent assessment round.</p>	<p><u>Direct Assessment</u>: The rubric developed for assessment was a research proposal or prospectus that was reviewed and accepted by the graduate committee. The proposals reflect a graduate’s capability in all aspects of scientific practice and achievement in critical thinking, professional and technical expertise, communication, continuing learning (as practice of science is in essence life-long learning), and leadership potential as a self-reliant scientist. The program goal was to have students score a 3 or higher (of 5 points) in all areas of criteria. Student scores achieved this goal in 6 out of 9 rubric questions. Critical Thinking was among the areas in which students obtained mostly sufficient scores (ranging from 72% to 100%) but with a low score of 57% for field and laboratory design. This suggests that a portion of outcome A may be problematic. Note: Scores of 72% are considered successful since the small number of responses prohibits scores between 72% and 86%).</p> <p><u>Plans for Continuous Improvement</u>: Faculty has decided that drastic alteration to the curriculum or teaching methodology is not recommended at this time as the rubric is measuring achievement mid-way through a student’s graduate program. If similar shortcomings were noted later in the program (e.g. in the quality of a written thesis and defense) then remediation would be justified. Furthermore, low scores in the areas of policy management, education-based theses, and science-based investigations may reflect an omission of these techniques rather than a lack of understanding. Once the M.A. in Environmental Studies is approved, students conducting theses in policy, management and education will be fulfilling a different set of programmatic outcomes. Because foundations of statistical and modeling application are taught in EVR 6022, it is recommended that these portions of the curriculum be revised. Faculty members teaching this course will meet in Fall 2005 to discuss possible improvements.</p>	<p>In the previous assessment round, programmatic outcome B was identified as being problematic. Student performance related to this outcome will therefore continue to be monitored in the next round (2006–2007) and special attention will be directed to its assessment after the revised version of Environmental Research Methodology (EVR 6022) is offered in Spring 2007 (2007–2008 assessment round). We have revised this syllabus to focus more on experimental design and statistical analysis. It was piloted as an independent study in the Spring of 2006. Note: Conducting assessments every other year for areas that lead to curricular changes allows program faculty to determine if the changes were successful.</p>	<p><u>Direct Assessment</u>: Students were to submit a research proposal/prospectus as part of EVR 6022. The proposal assesses the following criteria: appropriate scientific terminology, rationale for the study, formulation of research question and hypotheses, methods and approach, analysis and summary/ conclusion. The goal was to have students score 3 or higher (of 5 points) in all areas of criteria. Students’ scores met this goal, with only one of four students’ scoring a 3 in the methods criteria. It should be noted that the student proposal is in revision and faculty anticipates the score in this category to increase. The other students scored a minimum of 4 across criteria.</p> <p>Additionally, graduates of the program must successfully write and defend a research thesis. This is assessed based on the following criteria: scientific format, research design and methodology, accuracy of interpretation, and style/ mechanics of presentation. The first successful thesis defense in the program was carried out in Fall 2005, with revisions currently in progress for final submission.</p> <p><u>Plans for Continuous Improvement</u>: EVR 6022 was offered in the past as a co-listed class with upper-level undergraduate class. Based on student comments that a graduate-only class should be offered, a separate course was developed and will be offered in the Spring of ’07. Student input and comments will determine whether modifications to course content, if any, will be made. The M.S. in Environmental Science program is new and based on experimental or field research that is time intensive. Given the nature of the program, only two students have graduated. Two other students have submitted their prospectus (research proposal) for analyses. For this reason, assessments were carried out on only four students this round.</p>

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<p><u>Effective Communication</u> (University Level) Graduates of advanced degree programs at Florida Gulf Coast University will:</p> <p>Demonstrate effective use of a variety of communication skills and modalities.</p> <p><u>Effective Communication</u> (Program Level) Graduates of the Master of Science in Environmental Science will develop skills and experience in:</p> <p>A) an understanding of, and the ability to apply, the scientific method, and the capacity to design and conduct a relevant research investigation using qualitative and quantitative techniques [EVR6022, EVS6970]</p> <p>K) the ability to function in a professional setting [EVR6022, EVS6970, URP6421, EVR6937]</p> <p>L) empathy and respect for the environment and all life within it, and recognition of the many ways of knowing the environment [EVS6920, EVR5414, EVR5925]</p>	<p>Demonstrate effective use of a variety of communication skills and modalities.</p> <p><u>Plan</u>: Outcome A) assessed via strategies: 1. Preparation and review of a research proposal, using Proposal Review Rubric. 2. Completion and defense of thesis. 3. Evaluation of the program curriculum by the academic coordinator, graduate faculty, and external reviewers. <u>Criteria</u>: All students must score “good” to “excellent” on all survey questions within the Proposal Review Rubric. 75% or greater should score “very good” to “excellent.” All students must successfully defend and complete the writing of their thesis. The committee of evaluators must agree, based on majority rule, on proposed changes of the curriculum.</p> <p><u>Plan</u>: Outcome K) assessed via strategies: 4. Post-graduate surveys of the program. 6. Successful completion of the program as measured by graduation and attrition rates. <u>Criteria</u>: These assessment tools will be developed in a subsequent assessment round.</p> <p><u>Plan</u>: Outcome L) assessed via strategy: 4. Post-graduate surveys of the program. <u>Criteria</u>: This assessment tool will be developed in a subsequent assessment round.</p>	<p><u>Direct Assessment</u>: The rubric developed for assessment was a research proposal or prospectus that was reviewed and accepted by the graduate committee. The proposals reflect a graduate’s capability in all aspects of scientific practice and achievement in critical thinking, professional and technical expertise, communication, continuing learning (as practice of science is in essence life-long learning), and leadership potential as a self-reliant scientist. The program goal was to have students score a 3 or higher (of 5 points) in all areas of criteria. Student scores achieved this goal in 6 out of 9 rubric questions. Effective Communication was among the areas in which students obtained good to excellent scores (ranging from 86% to 100%).</p> <p><u>Plans for Continuous Improvement</u>: Faculty has decided that drastic alteration to the curriculum or teaching methodology is not recommended at this time as the rubric is measuring achievement mid-way through a student’s graduate program. If similar shortcomings were noted later in the program (e.g. in the quality of a written thesis and defense) then remediation would be justified. Furthermore, low scores in the areas of policy management, education-based theses, and science-based investigations may reflect an omission of these techniques rather than a lack of understanding. Once the M.A. in Environmental Studies is approved, students conducting theses in policy, management and education will be fulfilling a different set of programmatic outcomes. Because foundations of statistical and modeling application are taught in EVR 6022, it is recommended that these portions of the curriculum be revised. Faculty members teaching this course will meet in Fall 2005 to discuss possible improvements.</p>	<p>In conjunction with the revision of EVR 6022, (see outcome B. above) we refined the format of the thesis proposal. This new format has been applied informally by individual graduate faculty, but will be formalized with the first offering of the stand-alone EVR 6022 in the Spring of 2007.</p>	<p><u>Direct Assessment</u>: Students were to submit a research proposal/prospectus as part of EVR 6022. The proposal assesses the following criteria: appropriate scientific terminology, rationale for the study, formulation of research question and hypotheses, methods and approach, analysis and summary/ conclusion. The goal was to have students score 3 or higher (of 5 points) in all areas of criteria. Students’ scores met this goal, with only one of four students’ scoring a 3 in the methods criteria. It should be noted that the student proposal is in revision and faculty anticipates the score in this category to increase. The other students scored a minimum of 4 across criteria.</p> <p>Additionally, graduates of the program must successfully write and defend a research thesis. This is assessed based on the following criteria: scientific format, research design and methodology, accuracy of interpretation, and style/ mechanics of presentation. The first successful thesis defense in the program was carried out in Fall 2005, with revisions currently in progress for final submission.</p> <p><u>Plans for Continuous Improvement</u>: EVR 6022 was offered in the past as a co-listed class with upper-level undergraduate class. Based on student comments that a graduate-only class should be offered, a separate course was developed and will be offered in the Spring of ’07. Student input and comments will determine whether modifications to course content, if any, will be made. The M.S. in Environmental Science program is new and based on experimental or field research that is time intensive. Given the nature of the program, only two students have graduated. Two other students have submitted their prospectus (research proposal) for analyses. For this reason, assessments were carried out on only four students this round.</p>

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<p><u>Professional and Technical Expertise</u> (University Level) Graduates of advanced degree programs at Florida Gulf Coast University will:</p> <p>Exhibit professional and technical expertise consistent with discipline and/or content area accrediting or licensing bodies.</p> <p><u>Professional and Technical Expertise</u> (Program Level)</p> <p>Graduates of the Master of Science in Environmental Science will develop skills and experience in:</p> <p>B) the ability to understand and apply systems analysis and simulation modeling techniques to environmental education, management, or research [EVR6022, EVS6970, OCB6635, PCB6064C, URP6421, EVR5925]</p> <p>C) advanced ability to use appropriate technologies (statistical analyses, geographic information systems, field and laboratory techniques) [EVR6022, EVS6970, OCB6635, PCB6064C, EVR5145, OCB6931, OCG6053, GLY5658]</p> <p>D) an understanding of geologic, biological, physical, and evolutionary processes and their impact on ecosystems [OCB6635, PCB6064C, EVR5145, GLY5658, OCB6646, OCG6053]</p> <p>E) a strong foundation in ecological principles and their application to the description and interpretation of environmental system [OCB6635, PCB6064C, EVR5414, OCB6646]</p> <p>F) an understanding of anthropogenic impacts on ecosystems [OCB6635, PCB6064C, EVR5145, EVR5925, OCG6053]</p> <p>G) knowledge of local plant and animal communities and ecosystem dynamics, and the ability to translate this understanding to regional and global levels [OCB6635, PCB6064C, EVR5414, OCB6931]</p> <p>H) knowledge and field skills in identifying and investigating a core cluster of life groups [OCB6635, PCB6064C, OCB6931]</p> <p>I) expertise in a limited group of organisms, or ecosystems [OCB6635, PCB6064C, OCB6646, OCB6931]</p>	<p>Exhibit professional and technical expertise consistent with discipline and/or content area accrediting or licensing bodies.</p> <p><u>Plan:</u> Outcome B, C, D, E, F, G, H, & I assessed via strategies: 3. Evaluation of the program curriculum by the academic coordinator, faculty, and external reviewers. 5. Student grades on core courses in the program of study.</p> <p><u>Criteria:</u> The committee of evaluators must agree, based on majority rule, on proposed changes of the curriculum. Assessment strategy 5 will be developed in a subsequent assessment round.</p>	<p><u>Direct Assessment:</u> The rubric developed for assessment was a research proposal or prospectus that was reviewed and accepted by the graduate committee. The proposals reflect a graduate's capability in all aspects of scientific practice and achievement in critical thinking, professional and technical expertise, communication, continuing learning (as practice of science is in essence life-long learning), and leadership potential as a self-reliant scientist. The program goal was to have students score a 3 or higher (of 5 points) in all areas of criteria. Student scores achieved this goal in 6 out of 9 rubric questions. Professional and Technical Expertise was among the areas in which students did not obtain sufficient scores, scoring a 29% and 43%. This suggests that programmatic outcomes A and B1 may be problematic, with students struggling with data analysis, application of statistical methods, and the use of simulation models. Although this outcome is the only one potentially unmet, it is noteworthy that there are many other content-based programmatic outcomes that map against Professional and Technical Expertise that are not being assessed in this round. Subsequent assessment rounds may be contraindicative.</p> <p><u>Plans for Continuous Improvement:</u> Faculty has decided that drastic alteration to the curriculum or teaching methodology is not recommended at this time as the rubric is measuring achievement mid-way through a student's graduate program. If similar shortcomings were noted later in the program (e.g. in the quality of a written thesis and defense) then remediation would be justified. Furthermore, low scores in the areas of policy management, education-based theses, and science-based investigations may reflect an omission of these techniques rather than a lack of understanding. Once the M.A. in Environmental Studies is approved, students conducting theses in policy, management and education will be fulfilling a different set of programmatic outcomes. Because foundations of statistical and modeling application are taught in EVR 6022, it is recommended that these portions of the curriculum be revised. Faculty members teaching this course will meet in Fall 2005 to discuss possible improvements.</p>		<p><u>Direct Assessment:</u> Students were to submit a research proposal/prospectus as part of EVR 6022. The proposal assesses the following criteria: appropriate scientific terminology, rationale for the study, formulation of research question and hypotheses, methods and approach, analysis and summary/ conclusion. The goal was to have students score 3 or higher (of 5 points) in all areas of criteria. Students' scores met this goal, with only one of four students' scoring a 3 in the methods criteria. It should be noted that the student proposal is in revision and faculty anticipates the score in this category to increase. The other students scored a minimum of 4 across criteria.</p> <p>Additionally, graduates of the program must successfully write and defend a research thesis. This is assessed based on the following criteria: scientific format, research design and methodology, accuracy of interpretation, and style/mechanics of presentation. The first successful thesis defense in the program was carried out in Fall 2005, with revisions currently in progress for final submission.</p> <p><u>Plans for Continuous Improvement:</u> EVR 6022 was offered in the past as a co-listed class with upper-level undergraduate class. Based on student comments that a graduate-only class should be offered, a separate course was developed and will be offered in the Spring of '07. Student input and comments will determine whether modifications to course content, if any, will be made. The M.S. in Environmental Science program is new and based on experimental or field research that is time intensive. Given the nature of the program, only two students have graduated. Two other students have submitted their prospectus (research proposal) for analyses. For this reason, assessments were carried out on only four students this round.</p>

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<p><u>Leadership Skills</u> (University Level) Graduates of advanced degree programs at Florida Gulf Coast University will:</p> <p>Be prepared for leadership roles in professional and occupational areas and in communities in which they live and work.</p> <p><u>Leadership Skills</u> (Program Level) Graduates of the Master of Science in Environmental Science will develop skills and experience in:</p> <p>A) an understanding of, and the ability to apply, the scientific method, and the capacity to design and conduct a relevant research investigation using qualitative and quantitative techniques [EVR6022, EVS6970]</p> <p>F) an understanding of anthropogenic impacts on ecosystems [OCB6635, PCB6064C, EVR5145, EVR5925, OCG6053]</p> <p>J) an understanding of the concept of sustainability and its application to the formation and implementation of public policy, decision making, problem identification, ethical dilemmas, creative problem solving, and conflict resolution [EVR6322, URP6421, EVR5925, EVR6937]</p> <p>K) the ability to function in a professional setting [EVR6022, EVS6970, URP6421, EVR6937]</p>	<p>Be prepared for leadership roles in professional and occupational areas and in communities in which they live and work.</p> <p><u>Plan:</u> Outcome A) assessed via strategies: 1. Preparation and review of a research proposal, using Proposal Review Rubric. 2. Completion and defense of thesis. 3. Evaluation of the program curriculum by the academic coordinator, graduate faculty, and external reviewers. <u>Criteria:</u> All students must score “good” to “excellent” on all survey questions within the Proposal Review Rubric. 75% or greater should score “very good” to “excellent.” All students must successfully defend and complete the writing of their thesis. The committee of evaluators must agree, based on majority rule, on proposed changes of the curriculum.</p> <p><u>Plan:</u> Outcome F & J assessed via strategies: 3. Evaluation of the program curriculum by the academic coordinator, faculty, and external reviewers. 5. Student grades on core courses in the program of study. <u>Criteria:</u> The committee of evaluators must agree, based on majority rule, on proposed changes of the curriculum. Assessment strategy 5 will be developed in a subsequent assessment round.</p> <p><u>Plan:</u> Outcome K) assessed via strategies: 4. Post-graduate surveys of the program. 6. Successful completion of the program as measured by graduation and attrition rates. <u>Criteria:</u> These assessment tools will be developed in a subsequent assessment round.</p>	<p><u>Direct Assessment:</u> The rubric developed for assessment was a research proposal or prospectus that was reviewed and accepted by the graduate committee. The proposals reflect a graduate’s capability in all aspects of scientific practice and achievement in critical thinking, professional and technical expertise, communication , continuing learning (as practice of science is in essence life-long learning), and leadership potential as a self-reliant scientist. The program goal was to have students score a 3 or higher (of 5 points) in all areas of criteria. Student scores achieved this goal in 6 out of 9 rubric questions. Leadership Skills was among the areas in which students obtained excellent scores (at 100%).</p> <p><u>Plans for Continuous Improvement:</u> Faculty has decided that drastic alteration to the curriculum or teaching methodology is not recommended at this time as the rubric is measuring achievement mid-way through a student’s graduate program. If similar shortcomings were noted later in the program (e.g. in the quality of a written thesis and defense) then remediation would be justified. Furthermore, low scores in the areas of policy management, education-based theses, and science-based investigations may reflect an omission of these techniques rather than a lack of understanding. Once the M.A. in Environmental Studies is approved, students conducting theses in policy, management and education will be fulfilling a different set of programmatic outcomes. Because foundations of statistical and modeling application are taught in EVR 6022, it is recommended that these portions of the curriculum be revised. Faculty members teaching this course will meet in Fall 2005 to discuss possible improvements.</p>	<p>A leadership role in environmental science requires that the recipient of a masters degree be both a skilled, self-reliant scientist and fully appreciative of the impact of environmental processes and decisions on society. Consequently, the program outcomes encompass these character sets. Poor performance in these areas requires that curriculum be revisited. Changes in the types of leadership skills required by the profession will be forecasted by the committee evaluation process.</p>	

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<p><u>Continuing Learning</u> (University Level) Graduates of advanced degree programs at Florida Gulf Coast University will:</p> <p>Demonstrate the capacity for continuing learning, growth, and scholarly activity in their respective disciplines and fields of study</p> <p><u>Continuing Learning</u> (Program Level) Graduates of the Master of Science in Environmental Science will develop skills and experience in:</p> <p>A) an understanding of, and the ability to apply, the scientific method, and the capacity to design and conduct a relevant research investigation using qualitative and quantitative techniques [EVR6022, EVS6970]</p>	<p>Demonstrate the capacity for continuing learning, growth, and scholarly activity in their respective disciplines and fields of study.</p> <p><u>Plan:</u> Outcome A) assessed via strategies:</p> <ol style="list-style-type: none"> 1. Preparation and review of a research proposal, using Proposal Review Rubric. 2. Completion and defense of thesis. 3. Evaluation of the program curriculum by the academic coordinator, graduate faculty, and external reviewers. <p><u>Criteria:</u> All students must score “good” to “excellent” on all survey questions within the Proposal Review Rubric. 75% or greater should score “very good” to “excellent.” All students must successfully defend and complete the writing of their thesis. The committee of evaluators must agree, based on majority rule, on proposed changes of the curriculum.</p>	<p><u>Direct Assessment:</u> The rubric developed for assessment was a research proposal or prospectus that was reviewed and accepted by the graduate committee. The proposals reflect a graduate’s capability in all aspects of scientific practice and achievement in critical thinking, professional and technical expertise, communication, continuing learning (as practice of science is in essence life-long learning), and leadership potential as a self-reliant scientist. The program goal was to have students score a 3 or higher (of 5 points) in all areas of criteria. Student scores achieved this goal in 6 out of 9 rubric questions. Continuing Learning was among the areas in which students obtained excellent scores (at 100%).</p> <p><u>Plans for Continuous Improvement:</u> Faculty has decided that drastic alteration to the curriculum or teaching methodology is not recommended at this time as the rubric is measuring achievement mid-way through a student’s graduate program. If similar shortcomings were noted later in the program (e.g. in the quality of a written thesis and defense) then remediation would be justified. Furthermore, low scores in the areas of policy management, education-based theses, and science-based investigations may reflect an omission of these techniques rather than a lack of understanding. Once the M.A. in Environmental Studies is approved, students conducting theses in policy, management and education will be fulfilling a different set of programmatic outcomes. Because foundations of statistical and modeling application are taught in EVR 6022, it is recommended that these portions of the curriculum be revised. Faculty members teaching this course will meet in Fall 2005 to discuss possible improvements.</p>	<p>The scientific process is, by design, one that provides for life-long learning. A well-trained scientist is one that remains current in his/her discipline. Consequently, if the scientific method is taught well, our graduates should experience continual growth as professionals. Therefore, a similar assessment and improvement strategy, as proposed for critical thinking and problem solving, will be employed: The foundations of these skills are introduced in EVR6022, revisited in most core and elective courses, and then honed through individualized mentorship through graduate advising. Accountability for these outcomes lies within the curriculum and with the graduate faculty.</p> <p>Instructors of EVR6022 will review the course curriculum to ensure the foundation is strong; the graduate faculty will assemble to make recommendations to improve the mentoring process; and periodic reviews of the curriculum will ensure rigor.</p>	<p><u>Direct Assessment:</u> Students were to submit a research proposal/prospectus as part of EVR 6022. The proposal assesses the following criteria: appropriate scientific terminology, rationale for the study, formulation of research question and hypotheses, methods and approach, analysis and summary/ conclusion. The goal was to have students score 3 or higher (of 5 points) in all areas of criteria. Students’ scores met this goal, with only one of four students’ scoring a 3 in the methods criteria. It should be noted that the student proposal is in revision and faculty anticipates the score in this category to increase. The other students scored a minimum of 4 across criteria.</p> <p>Additionally, graduates of the program must successfully write and defend a research thesis. This is assessed based on the following criteria: scientific format, research design and methodology, accuracy of interpretation, and style/mechanics of presentation. The first successful thesis defense in the program was carried out in Fall 2005, with revisions currently in progress for final submission.</p> <p><u>Plans for Continuous Improvement:</u> EVR 6022 was offered in the past as a co-listed class with upper-level undergraduate class. Based on student comments that a graduate-only class should be offered, a separate course was developed and will be offered in the Spring of ’07. Student input and comments will determine whether modifications to course content, if any, will be made. The M.S. in Environmental Science program is new and based on experimental or field research that is time intensive. Given the nature of the program, only two students have graduated. Two other students have submitted their prospectus (research proposal) for analyses. For this reason, assessments were carried out on only four students this round.</p>

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MS Environmental Science Assessment Strategies:

The Master of Science in Environmental Science is assessed and measured in the following ways:

1. *Preparation and review of a research proposal.* Each student in the program must prepare an NSF-style research proposal, and that proposal must be critiqued and accepted by the student's main advisor. During each assessment period, those proposals will be collected and distributed for review by a committee of internal (and occasionally external) graduate faculty and research scientists. The committee will evaluate the program's effectiveness at training students in the application of the scientific method. A "Proposal Review Rubric" has been developed and was administered for the first time in the Spring, 2005.
2. *Completion and defense of thesis.* Each graduate of the program must successfully write and defend a research thesis. Thesis committees consist of three graduate faculty members and commonly a committee contains scientists from outside the university with adjunct graduate faculty status. Theses are heavily scrutinized and critiqued for their scientific format, for the research design and methodology, for the accuracy of interpretation, and for the style and mechanics of presentation. This therefore is the most helpful metric of the program's effectiveness. To date no students have completed or defended their thesis. Consequently, this assessment measure has not been employed.
3. *Evaluation of the program curriculum by the academic coordinator, faculty, and external reviewers.* Periodically the graduate faculty within the Division of Ecological and Social Sciences, will review the structure and content of the curriculum. Environmental scientists and managers from the local community will be invited to participate in this review process. The program curriculum was reviewed and revised during the Fall, 2004. A subsequent review will be scheduled after 5 or more students successfully complete the program.
4. *Post-graduate surveys of the program.* Once the program has developed a reasonable pool of alumni, those graduates and their employers will be asked to evaluate the preparedness of our students through a written survey. Since no students have completed the program to date, the development of this measure will be postponed for a subsequent year.
5. *Student grades on core courses in the program of study.* The core curriculum of the program is intended to address many of the content-based outcomes of the program. Consequently, student performance in these courses reflects how well those outcomes are achieved. This assessment measure has been developed, but has not yet been applied.
6. *Successful completion of the program as measured by graduation and attrition rates.* Graduation and attrition rates reflect, in part, students' commitment to graduate studies. In effect, it provides a measure of the quality of our accepted applicants, an attribute of great concern to the graduate faculty. This measure, therefore, will be used to evaluate our admission's criteria. Since no students have completed the program to date, the development of this measure will be postponed for a subsequent year.