Bachelor of Science in Sustainable Management

Assessment Plan 2014

Introduction
The Bachelor of Science in Sustainable Management program is unique in that it is an entirely online program offered collaboratively among four University of Wisconsin comprehensive institutions, UW-River Falls, UW-Parkside, UW-Stout, UW-Superior, and UW-Extension Continuing Education, Outreach and E-Learning. The BSSMGT was the first collaborative degree program in the UW-System.

BSSMGT began enrolling students in Fall 2009. The degree was designed to provide students with a comprehensive understanding of the ways in which natural processes, business structures, and social needs intersect (people, planet, profit). An advisory board consisting of representatives from the Ford Motor Company, 3M, Wisconsin Department of Natural Resources, SC Johnson, Kohl’s, and others contributed to the development of the program competencies.

Created for working adults with an associate’s degree or 60 credits, this degree completion program consists of 63 credits spread over 21 courses. All courses and the program were approved through the faculty governance approval processes on the partner campuses. Each campus teaches five or six of the 21 courses (Capstone class moves between campuses.). Students select a “home” institution for enrollment purposes. There are students from the four campuses enrolled in each of the courses offered.

The campus outreach/continuing education units and campus faculty worked with UW-Extension CEOEL to create the degree program. Each campus has a faculty academic director. At UWRF, the director is Dr. Robert Baker, Emeritus Professor of Plant and Earth Sciences, former department chair of Plant and Earth Science, and former Associate Dean of the College of Agriculture, Food and Environmental Sciences.

Mission
The mission of the UW-River Falls Sustainable Management major is to develop effective, engaged, and informed leaders who understand business systems as well as natural systems, and who are able to bring industry relevant and applicable knowledge to enable businesses to be profitable and to contribute to global sustainability.
**Section 1: Program Learning Outcomes**

**Assessment Process as Applied to UWRF**

The collaborative assessment plan and report from the four campuses was shared with the UWRF Assessment Committee during the trial year of the Program Prioritization and Program Assessment and Review process. The committee recommended that the focus of the UWRF plan be on the courses offered by UWRF. There are 21 courses in the major, of which UWRF currently teaches six.

The six UWRF courses, their titles and outcomes and competencies are found below. See Appendix A for a complete program listing of outcomes and competencies.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
<th>Outcome</th>
<th>Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMGT 115</td>
<td>Environmental Science and Sustainability</td>
<td>Graduates will employ systems thinking approaches to evaluate sustainability issues.</td>
<td>Graduates will be able to identify threats to water resources, explain how to reduce water use, and describe how water policies are implemented and enforced.</td>
</tr>
<tr>
<td>SMGT 220</td>
<td>Systems Thinking</td>
<td>Graduates will employ systems thinking approaches to evaluate sustainability issues.</td>
<td>Graduates will be able to explain the fundamental elements of economic, social, and ecological interdependence and the policy and economic implications of these relationships.</td>
</tr>
<tr>
<td>SMGT 320</td>
<td>Energy for Sustainable Management</td>
<td>Graduates will employ systems thinking approaches to evaluate sustainability issues.</td>
<td>Graduates will be able to describe the production, distribution, consumption and management of energy.</td>
</tr>
<tr>
<td>SMGT 331</td>
<td>Sustainable Organizational Finance</td>
<td>Graduates will be able to make informed judgments that lead to sustainable outcomes.</td>
<td>Graduates will be able to perform financial ratio and feasibility analyses and incorporate hard-value benefits and costs in finance.</td>
</tr>
<tr>
<td>SMGT 360</td>
<td>Environmental and Sustainability Policy</td>
<td>Graduates will be able to communicate sustainability diverse audiences.</td>
<td>Graduates will be able to create effective marketing, communications, and public affairs materials that demonstrate human impacts on the environment.</td>
</tr>
<tr>
<td>SMGT 495</td>
<td>Sustainable Management Capstone</td>
<td>Graduates will integrate sustainability concepts into applied settings and projects.</td>
<td>Graduates will be able to create organization specific proposal that address triple-bottom line feasibility studies.</td>
</tr>
</tbody>
</table>
UWRF Strategic Goals and the SMGT Learning Outcomes
The table below shows how the 19 outcomes address the UWRF Strategic Goals.

<table>
<thead>
<tr>
<th>UWRF Strategic Goals</th>
<th>BS SMGT Learning Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distinctive Academic Excellence</td>
<td>A)1,2, E)16, F)18, 19</td>
</tr>
<tr>
<td>Global Education and Engagement</td>
<td>A)1, 2, 3, 4</td>
</tr>
<tr>
<td>Innovation and Partnerships</td>
<td>A)1, B)5,6, C)7, 8,9, D)10,11,12,13,14,15, E)16,17, F)18,19</td>
</tr>
</tbody>
</table>

Program Learning Outcomes and External Stakeholders
Arguably, one of the strongest and most unique features of the Sustainable Management major is our SMGT 495 Senior Capstone course that requires an application and study of sustainable management through the solution of an industry-based project and using implementation of a triple bottom line solution to specific industrial problems.

In essence, each student is required to work as an intern with an external stakeholder to help resolve one or more issues related to sustainability that are faced by that organization. Here are four examples of the types of projects our students have developed in SMGT 495:

One student worked with American Family Insurance in Madison, WI and created a recycling plan that allowed American Family Insurance to become the first major private employer in Dane County to routinely divert food-related waste from the landfill. As a result, now all kitchen scraps from food prep work in the company cafeteria, plus used paper towels from company bathrooms, are separated from other garbage, stored in a compactor for a few weeks and then composted off-site.

Another student project involved an internship with a company called Refresh Glass where the student designed an operation procedure for collecting used wine, beer, and liquor bottles from local restaurants and hotels. Refresh Glass then took these normally discarded glass items and turned them into functional glassware. The most common glassware produced was drinking glasses that became very popular when people heard they were made from wine bottles. In the words of the student “It was so great to have this internship because it gave me real life experience and untimely landed me a job with that company. The hands-on-experience is something that really prepared me for the real world.”

As a third example of the range of projects involving external stakeholders, another student with a keen interest in sports and recreation that have a minimal impact on the environment worked with a disc-golf store in Milwaukee to develop a business plan. Some of the sustainability aspects of disc golf include: A regular golf course uses between 100,000 to 1,000,000 gallons of water per week in the summer months while a disc golf course requires none. Disc golf courses are not as destructive to the natural landscape and ecosystem when installed as are ball golf courses. A traditional golf course completely changes the surrounding natural landscape while a disc golf course embraces nature and works the holes into the surroundings. The business plan
included an operational plan describing the logistics of the organization and a section describing relevant financial data (start-up costs, capitalization, 12-month projections, 4-year projections, projected cash flow, balance sheet, and break-even analysis.)

A final example of SMGT 495 projects involved a student who worked with the University Housing Department at one of the UW-Campuses to institute use of environmentally friendly cleaning products, rather than using conventional chemicals and cleaning methods. According to the student one of the most difficult aspects of this project was dealing with the custodial staff’s preconceived prejudices about “green” cleaning products.

Sections 2 and 3: Profile of Where Learning Outcomes are Being Achieved and Venues for Assessing Learning Outcomes

UWRF Course Assessment Descriptions and Rubrics
Each course is assessed every term it is offered. The competency, how it is assessed, and its rubric for each course can be found below.

---

Course: SMGT 115: Environmental Science and Sustainability

Program Competency: #13 Water Policy and Water Science - Students will be able to identify threats to water resources, explain how to reduce water use, and describe how water policies are implemented and enforced.

Assessment Description: Students are given the following instructions:

For a single 24-hour period, document all of the resources that you've utilized that particular day. Be as inclusive and specific as possible (for example, include packaging, etc.). Don't be concerned with quantifying the amounts of resources used, only in identifying them.

Next, group these resources into the following categories and subcategories:

1. Food

2. Water
   - with subcategories including "Drinking Water," "Cooking," "Lawn and Garden Maintenance," "Cleaning," and "Other";

3. Shelter
   - with subcategories including "Building Materials," "Furnishings," "Tools and Implements," and "Other";

4. Clothing
   - with subcategories including "Work Attire," "Leisure Clothing," "Outerwear (Coats, etc.)," "Footwear," and "Other";
5. Personal Hygiene
   - with subcategories including “Cleansers,” “Hair Products,” “Oral Hygiene,”
     “Skin Products,” and “Other”;

6. Energy
   - with subcategories of "Heating and Cooling," "Electrical Devices,"
     "Transportation," and "Other."

Then, for each subcategory, identify the natural resources utilized to provide these products. For example, the natural resources required to provide the subcategory of "Meats" would include the animals themselves, the plants used to feed the animals, the soil, water, and sunlight used to raise the plants, etc.

For each of these natural resources provide a non-natural alternative, if available, that could be utilized if necessary. In this case "non-natural" refers to anything that has been substantially altered or processed by humans (for example, hydroponic medium instead of soil, or plastics instead of wood). Lastly, identify any of these non-natural alternatives that would be less costly and/or result in less ecological disturbance than the natural resources currently being used.

Complete this assignment in a spreadsheet format or Word table format.

Before you complete the activities, read the Unit 2 Individual Learning Activity Grading Rubric. This activity is worth a maximum of 25 points. Submit your individual assignment to the dropbox for evaluation in a spreadsheet format by the due date listed on the Course Calendar.

**Rubric:**

<table>
<thead>
<tr>
<th></th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content</strong></td>
<td>Effectively synthesizes concepts from research; justifies position with evidence from research; paper goes beyond merely restating article or Web site content; critical thinking is evident</td>
<td>Discussion of research content minimal and not well developed; little evidence to justify position; critical thinking is questionable due to simplistic reasoning and/or biased sources</td>
<td>Merely rehashes article or Web site content; no attempt made to synthesize information from other sources or discuss topic beyond what is presented in research; no justification for views presented; serious questions concerning reliability of sources and/or simplistic reasoning</td>
</tr>
<tr>
<td><strong>Organization</strong></td>
<td>Ideas are presented in logical order and flow from paragraph to paragraph; logical</td>
<td>Some difficulty in flow of ideas; some holes in logic; evidence of supporting ideas not</td>
<td>Ideas are presented in haphazard order; difficult to follow logic of paper</td>
</tr>
</tbody>
</table>
### Course: SMGT 220: Systems Thinking

**Program Competency:** #10 Ecological Economics - Students will be able to explain the fundamental elements of economic, social and ecological interdependence and the policy and economic implications of these relationships.

**Assessment Description:** Students are given the following instructions:

Part 1: Select two different systems that you feel are related to some issue within sustainability. Look at each of these two systems using the first four triplets of the Conceptagon. For each system, identify and describe each component in the triplet.

- Wholes, parts, relationships
- Structure, function, process
- Variety, parsimony, harmony
- Command, control, communication
- Interior, exterior, boundary
- Input, output, transformation
• Openness, hierarchy, emergence

Part 2: Consider the two systems you have analyzed, as follows:

1. How do the economic, social, and environmental aspects work together (interdependently) to create the whole system?
2. Why does this interdependence matter when considering policies (laws, regulations, plans, rules) that address each system?
3. Why does this interdependence matter when considering each system from a business (economic) perspective?

The assignment forces students to identify the systems components and functions, which forces them to deal with the aspects of independence directly. By reviewing two systems that seem to address disparate emphases they also come to realize the inherent overlap between the three.

Rubric:

Part 1: Each triplet in each of the two systems will be scored as follows:

- 2-points = demonstrates an understanding of the triplet completely
- 1-point = somewhat demonstrates an understanding of the triplet but not a complete understanding
- 0-points = does not demonstrate an understanding of the triplet

Part 2: Each question is scored out of 4-points

4 points:
- Q1: Student insightfully understands how the three are interdependent
- Q2&3: Student is able to suggest insightful implications

3 points:
- Q1: Student understands how the three are interdependent
- Q2&3: Student is able to suggest implications

2 points:
- Q1: Student somewhat understands how the three are interdependent
- Q2&3: Student is somewhat able to suggest implications

1 point:
- Q1: Student vaguely understands how the three are interdependent
- Q2&3: Student is vaguely able to suggest implications

0 points:
Q1: Student does not demonstrate how the three are interdependent
Q2&3: Student does not demonstrate an understanding of the implications

The student receives the points obtained out of 40 total points. Note: this is actually done over two assignments, one worth 16-points, the second worth 24-points. The rubric was provided to the students as part of the question.

Course: SMGT 320: Energy for Sustainable Management

Program Competency: Program Outcome D) Students will employ systems thinking approaches to evaluate sustainability issues. Item #15 Traditional and Alternative Energy. Students will be able to describe the production, distribution, consumption and management of energy.

Assessment Description: Students are given the following instructions:

The final paper requires you to synthesize much of what you've learned throughout the course. Imagine it is the year 2050 and all states of the union are now independent with you as the leader of a state of your choice. Write a 6-7 page (~2500 words, plus images & data) paper describing how you are going to manage energy in your state, concentrating on at least two main energy resources and justify why you have chosen them, taking into account the sustainability of your energy resources. Argue for the choices that you make, including reasonable estimates of relevant changes in the next 40 years and comment on how these significantly affect your plan. Consider both the pros and cons, strengths and weaknesses, of your chosen path toward energy sustainability, highlighting key assumptions made, citing data or trends that you used in your rationale. Mention any uncertainties or limitations of your approach, considering what additional information would have helped make your decision easier, outlining how your prioritization of various aspects fit into your decision.

Since there are 50 states you should be able to pick a location to your liking, and one with which you have some familiarity. However, once a state is chosen, then nobody else can use that state. When you have decided on a state, email ian.williams@uwrf.edu and we will assign you that state, if it is still available (with priority based upon the time that the email arrived). If you are a foreign national unfamiliar with the U.S., you can choose another country or province of a size comparable to France – but NOT your own country.

Rubric:

[Good=5-10, Adequate=3-6, Poor=1-2, Absent=0]

Administrative Requirements
Paper submitted on time Yes__ No__ (20% penalty per day late)
State approved before writing Yes__ No__ (20% penalty if not)
At least two energy resources chosen Yes__ No__ (20% penalty if not)

Presentation /10
- Grammar, spelling & punctuation Good__ Adequate__ Poor__ Absent__
- Illustrations, diagrams & tables Good__ Adequate__ Poor__ Absent__

Factual Content /10
- Population, area, geography, geology Good__ Adequate__ Poor__ Absent__
- Reasonable figures used in estimates Good__ Adequate__ Poor__ Absent__

Energy requirements /10
- Estimate changes in demand in +40yrs Good__ Adequate__ Poor__ Absent__
- Estimate changes in supplies in +40yrs Good__ Adequate__ Poor__ Absent__

Arguments to justify these resources /10
- Pros & cons of resources considered Good__ Adequate__ Poor__ Absent__
- Priorities, uncertainties & limitations Good__ Adequate__ Poor__ Absent__

Sustainability /10
- Environmental effects, pos & neg Good__ Adequate__ Poor__ Absent__
- Suitability & renewability of resources Good__ Adequate__ Poor__ Absent__

Referencing /5
- Style, quality & number Good__ Adequate__ Poor__ Absent__

Grader’s Choice /5
- e.g., creativity, uniqueness, exceptionality

Total /60
Score (four times total) /240

Course: SMGT 331: Sustainable Finance

Program Competency: #9 Financial Analysis -- Students will be able to perform financial ratio and feasibility analyses and incorporate hard-value benefits and costs in finance.
**Assessment Description:** Prior to submission of the cash flow budget, students are given the following instructions:

A capital investment analysis examines the financial feasibility of conducting a capital investment project. The capital investment project is one that requires an investment of a substantial amount of money in order to start a business, expand a business, adopt new technology, etc. In this assignment, you will write a one-page memorandum describing the capital investment project you will be analyzing this semester.

**Part 1: Capital Investment Description:**

In a one-page memorandum:

- Describe the business you will be working with and its key players (investors, managers, etc.)
- Describe the capital investment project you will be analyzing. You do not need to go into the operational or financial details. Just provide the instructor with a general description project to be investigated:
  - What is it?
  - Why is it being considered?

**Part 2: The Investment Cost and Its Associated Revenues and Expenses:**

In this assignment, you will provide the instructor with a one-page memorandum that describes the following:

- The capital investment’s cost
- How much money will be borrowed to make the investment?
- How the investment will affect revenues
- How the investment will affect operating expenses

**Part 3: The Cash Flow Budget:**

In this assignment you will use an Excel spreadsheet showing quarterly projections to demonstrate best estimates of what is likely to happen with expenditures over a 5-year period.

**Rubric:**

A = Shows excellent command ability to set up an Excel spreadsheet; includes all relevant numbers (perhaps adds perspective alternatives) and in proper columns – all of which align with the project’s original goal(s); no calculation errors; no missing variables; no format issues (uses color or other clarity-tools to enhance readability)
B = Shows good command ability to set up an Excel spreadsheet; includes all relevant numbers and in proper columns – all align with the project’s original goal(s); one minor calculation error; no missing variables; no format issues

C = Shows average ability to set up an Excel spreadsheet; includes several numbers (most in relevant columns) – some do not align with the project’s original goal(s); less than 3 calculation errors; less than 2 missing variables; minimal format issues

D = Shows limited ability to set up an Excel spreadsheet; includes few numbers (some in relevant columns) - most do not align with the project’s original goal(s); multiple calculation errors; minimal or missing variables; hard or impossible to read format.

F = Shows nothing; or turns in a picture of Motley Crue - thinking there is no difference.

Course: SMGT 360: Environmental and Sustainability Policy

Program Competency: Program Outcome E) Students will be able to communicate sustainability to diverse audiences.

Assessment Description: Selected assignments and discussion questions are used to assess student proficiency. Topics utilized address the roles of the public, interest groups and the media in influencing environmental policy as follows:

- BP and the Nature Conservancy – public/private partnerships
- Views on privatization of water supplies
- Legal Concepts and Coalitions
- Public Lands Debate

Rubric:

Student demonstrates a thorough understanding of the goals of the assignment. Student’s response is both concise and informative. Where applicable, student uses the assigned question as the basis for performing any necessary research that would enable him/her to elaborate fully on the response and to provide suitable examples. Student demonstrates professionalism in crafting responses and the responses are free of spelling and grammatical errors. Student provides references in an accepted format.

1. Meets all assignment requirements
2. Meets most assignment requirements
3. Meets some assignment requirements
4. Meets few assignment requirements
5. Meets none of the assignment requirements
Course: SMGT 495: Sustainable Management Capstone

Program Competency: #19 Triple Bottom Line Applications - Students will be able to create organization-specific proposals that address triple-bottom line feasibility factors.

Assessment Description: Students are given the following instructions:

Please write a description of your proposed Capstone project. If you are working with a client, you may wish to use one of your required (recorded) meetings to work through these details. The description may change along the way, but it is important to begin with a clearly stated problem which you will address.

Please write a narrative that addresses the following:

- Proposed project’s title
- Proposed project’s purpose
- Project client, including a description of the organization for which they work
- If you are the client (business plan) then provide a brief biography
- Project client contact, stating their name and position as it relates to their decision-making capability on the project
- If you are the client (business plan) then discuss why you are qualified to create your proposed business
- How the project relates to sustainability: anticipated societal, environmental, and economic connections
- Description of the Final Document you will produce; this must be something by which you can be evaluated and whose creation will take up the entire semester
- Rationale for the performing the project
- How product be used upon completion
- Skills and/or methodologies you will need to use
- SMGT course knowledge that will be used
- Commitments received for meetings and presentations
- Brief overview of your preliminary research including a list of resources
- Timeline – please break your entire process down into 12 (twelve) manageable weekly chunks; remember you are required to make 5 (five) “Project Submissions for Review” each of which should be a separate section of your final product; and to submit a final draft – include details on each of these across the semester, they will serve as your own particular due dates
- Demonstration that the product could be implementable – real and useful
- Justification that project is academic credit worthy
Each section will vary in length depending on your project. The point is to demonstrate that you have thoroughly thought the project through and can show how it meets the criteria for the course. Please ask the instructor if you have any questions.

Submit this to the instructor for initial feedback. Once feedback is received, you will need to make adjustments to your proposal, review it with your client, and obtain the necessary signatures on the Project Approval forms before you can proceed.

**Rubric:**

- Purpose 5
- Description 5
- Rationale 5
- Sustainability 5
- Methods 5
- Knowledge 5
- Resources 5
- Timeline 5
- Justification 5
- Writing quality 5

**Exit Surveys**

The exit survey is conducted in SMGT 495-Sustainability Capstone. The results from 2013-14 can be found in Appendix B.

It should be noted that in addition to the required “Agreement with Statement” survey, SMGT also asks students to rank the importance of the outcome and provide comments. The two additional pieces of data are reviewed by the academic directors and are reviewed as changes to the curriculum are considered.

**Section 4: Process for Assessment**

**Learning Outcome Development and Review**

Program learning outcomes were developed in 2009 with input from industry leaders/advisory board members regarding content and skills required for real world applicability. The organizations contributing to the competencies include: 3M Eastman Kodak, FedEx, Ford Motor Company, ISO, Inc., Johnson Controls, Kohl's, Kranz, Inc., Modine Manufacturing, Quad Graphics, Racine Area Manufacturers and Commerce, SC Johnson, U-Fuel, Veolia Environmental Services, and the Wisconsin Department of Natural Resources.

In the summer and fall of 2013, academic directors from the four campuses came together to review and update the learning outcomes. Assessment reports from the first four years of the program were considered as part of the review.
In addition the SMGT outcomes were compared to the results of a research study conducted by the International Society of Sustainability Professionals (Woodward et al, 2010). The study, conducted over a nine-month period sought to answer the question, “What should a sustainability professional know how to do?” The updated learning outcomes and which courses address the outcomes are found in Appendix A.

**Collaborative Assessment Process**

As part of the learning outcome review, the academic directors from the four campuses agreed on a collaborative assessment process for the degree. The process is as follows:

The academic directors annually review assessment data collected by instructors from individual courses for ALL terms (fall, spring, summer), data gathered from each of the four collaborating campuses, and information collected by UW Extension—focusing on data that assesses student achievement relative to the program’s 19 learning outcomes. The assessment committee includes the SMGT program managers and academic directors from each of the four campuses, and the SMGT program manager from UW-Extension. The assessment committee writes an annual assessment report after reviewing data as well as preliminary assessment conclusions and recommendations forwarded by each of the four campuses.

The academic directors maintain their campus reports along with sharing them with Extension. Individual course reports and the assessment reports for the entire program are housed at UW-Extension.

The process is characterized below.
References

Appendix A

Competencies and Outcomes
| Competency | Program Outcome | \(115\) | \(220\) | \(230\) | \(235\) | \(240\) | \(310\) | \(315\) | \(320\) | \(325\) | \(330\) | \(331\) | \(332\) | \(335\) | \(340\) | \(350\) | \(360\) | \(370\) | \(430\) | \(435\) | \(460\) | \(495\) |
|------------|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| CULTURAL UNDERSTANDING: | Graduates will be able to explain how race, religion, gender, socio-economic position, and other cultural aspects impact issues of sustainability. | 1 |
| CULTURAL APPLICATION: | Graduates will be able to apply cultural understanding to real-life organizational issues. | 2 |
| POLITICAL ACUMEN: | Graduates will be able to navigate and engage political and social processes at the local, state, national and international levels. | 3 |
| GLOBAL DYNAMICS: | Graduates will be able to describe world geography emphasizing global differences and connections between cultures, societies, politics, economics and environments. | 4 |
| INFORMATION ACUMEN: | Graduates will be able to evaluate the source, generation, reliability, and accuracy of information. | 5 |
| SCIENTIFIC UNDERSTANDING: | Graduates will be able to explain the science behind key environmental issues. | 6 |
| INFORMATION INTERPRETATION: | Graduates will be able to apply qualitative and quantitative analysis to guide decision-making processes. | 7 |
| OPPORTUNITY ANALYSIS: | Graduates will be able to identify potential, innovative, and symbiotic relationships between production and consumption. | 8 |
| FINANCIAL ANALYSIS: | Graduates will be able to perform financial ratio and feasibility analyses and incorporate hard-value benefits and costs in finance. | 9 |
| ECOLOGICAL ECONOMICS: | Graduates will be able to explain the fundamental elements of economic, social and ecological interdependence and the policy and economic implications of these relationships. | 10 |
| RESOURCE VALUATION: | Graduates will be able to explain how the valuation of resources will change in response to carbon trading, water privatization and payment for ecosystem services. | 11 |
| CLIMATE CHANGE: | Graduates will be able to describe the science of climate change and the social and economic implications for business and societies. | 12 |
| WATER POLICY AND WATER SCIENCE: | Graduates will be able to identify threats to water resources, explain how to reduce water use, and describe how water policies are implemented and enforced. | 13 |
| LOGISTICS, TRANSPORTATION, AND SUPPLY CHAIN MANAGEMENT: | Graduates will be able to explain logistics, transportation, and supply chain processes and identify ways to maximize financial, environmental, and social efficiencies. | 14 |
| TRADITIONAL AND ALTERNATIVE ENERGY: | Graduates will be able to describe the production, distribution, consumption and management of energy. | 15 |
| CULTURALLY SENSITIVE COMMUNICATION: | Graduates will develop communication materials that are culturally sensitive to race, religion, gender, and other cultural aspects. | 16 |
# Competencies and Outcomes
## Bachelor of Science - Sustainable Management

<table>
<thead>
<tr>
<th>Program Outcome</th>
<th>Competency</th>
<th>Description</th>
<th>Courses Taught by UWRF are marked in yellow</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVIRONMENTAL COMMUNICATION:</td>
<td>17</td>
<td>Graduates will be able to create effective marketing, communication, and public affairs materials that demonstrate human impacts on the environment.</td>
<td></td>
</tr>
<tr>
<td>PROGRAM OUTCOME F</td>
<td>18</td>
<td>Graduates will integrate sustainability concepts into applied settings and projects.</td>
<td></td>
</tr>
<tr>
<td>TRIPLE-BOTTOM LINE ANALYSIS:</td>
<td>18</td>
<td>Graduates will be able to perform organization-specific triple-bottom line analyses while fostering an inclusive approach with stakeholders.</td>
<td></td>
</tr>
<tr>
<td>TRIPLE-BOTTOM LINE APPLICATION:</td>
<td>19</td>
<td>Graduates will be able to create organization-specific proposals that address triple-bottom line feasibility factors.</td>
<td></td>
</tr>
</tbody>
</table>
Appendix B

Compilation of Fall 2013 and Spring 2014 Exit Survey Results on Program Outcomes
## Compilation of Fall 2013 and Spring 2014 Exit Survey Results on Program Outcomes
### Bachelor of Science - Sustainable Management

Twenty of 22 students enrolled in the capstone course, SMGT495, completed the exit survey during Fall and Spring Terms 2013-2014. This is a 91% response rate. The number in the cell by the outcome represents the number of responses in that category. Student comments are found at the end of the survey.

**Instructions:** Please rate the following statements based on the knowledge, perspectives, and skills you've acquired through your completion of the Sustainable Management Degree Program.

On the left side of the survey, indicate the extent to which you agree with the statement. Place an "X" in the cell to indicate your response.

On the right side of the survey, consider your motives for completing the program and indicate how important it is to you that you are able to perform the activity indicated. Place an "X" in the cell to indicate your response.

<table>
<thead>
<tr>
<th>Agreement with Statement</th>
<th>Program Outcomes</th>
<th>Importance of</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Disagree</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Slightly Disagree</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Slightly Agree</td>
<td>5</td>
<td>13</td>
</tr>
<tr>
<td>Agree</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Students will analyze sustainability issues from local to global perspectives**
- I am able to explain how race, religion, gender, socio-economic position, and other cultural aspects impact issues of sustainability. [3 7 5 5]
- I am able to apply cultural understanding to real-life organizational issues. [1 9 4 6]
- I am able to navigate and engage political and social processes at the local, state, national, and international levels. [1 3 5 5 6]
- I am able to describe world geography emphasizing global differences and connections between cultures, societies, politics, economics, and environments. [2 6 5 7]

**Students will analyze and interpret social, scientific, and business-related information in the context of sustainability.**
- I am able to evaluate the source, generation, reliability, and accuracy of information. [1 3 7 9]
- I am able to explain the science behind key environmental issues. [2 2 6 10]

**I am able to make informed judgments that lead to sustainable outcomes.**
- I am able to apply qualitative and quantitative analysis to guide decision-making processes. [2 6 12]
- I am able to identify potential, innovative, and symbiotic relationships between production and consumption. [3 2 15]
### Compilation of Fall 2013 and Spring 2014 Exit Survey Results on Program Outcomes
### Bachelor of Science - Sustainable Management

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Slightly Disagree</th>
<th>Slightly Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>1=Not at All Important</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6=Extremely Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>7</td>
<td>7</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>5</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>1</td>
<td>9</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>9</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>6</td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>5</td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>9</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>5</td>
<td>4</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>10</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>8</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>6</td>
<td>20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**I am able to perform financial ratio and feasibility analyses and incorporate hard-value benefits and costs in finance.**

**Students will employ systems thinking approaches to evaluate sustainability issues.**

**I am able to explain the fundamental elements of economic, social and ecological interdependence and the policy and economic implications of these relationships.**

**I am able to explain how the valuation of resources will change in response to carbon trading, water privatization and payment for ecosystem services.**

**I am able to describe the science of climate change and the social and economic implications for business and societies.**

**I am able to identify threats to water resources, explain how to reduce water use, and describe how water policies are implemented and enforced.**

**I am able to explain logistics, transportation, and supply chain processes and identify ways to maximize financial, environmental, and social efficiencies.**

**I am able to describe the production, distribution, consumption and management of energy.**

**I am able to communicate sustainability to diverse audiences.**

**I am able to develop communication materials that are culturally sensitive to race, religion, gender, and other cultural aspects.**

**I am able to create effective marketing, communication, and public affairs materials that demonstrate human impacts on the environment.**

**Students will integrate sustainability concepts into applied settings and projects.**

**I am able to perform organization-specific triple-bottom line analyses while fostering an inclusive approach with stakeholders.**

**I am able to create organization-specific proposals that address triple-bottom line feasibility factors.**
Compilation of Fall 2013 and Spring 2014 Exit Survey Results on Program Outcomes
Bachelor of Science - Sustainable Management

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Slightly Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Comments

The competencies that I listed "agree" rather than "strongly agree" reflect a desire to have learned more about cultural intricacies around the globe and their implementation in a business setting, as well as a strong desire to have had a basic physics class prior to taking the Energy for Sustainable Management course. Additionally, the second Economics course for the program was almost prohibitively difficult, and I feel, unnecessary except for Economics majors. What I most want the parties who view this survey to know is that I am tremendously grateful and I feel incredibly fortunate to have had the excellent instructors and adviser that I have had. I am glad that I pursued this degree program.

I have nothing but positive feelings regarding my path through the SMGT program. The quality of my education was very high, and anything that I marked down to "Agree" is mainly because, in my opinion, these are extremely broad topics, or are elements which must be practiced and repeated to fully refine. I can't think of any areas where the SMGT program has a shortfall, or a gap in the curriculum.

Improvement could be made in getting more instructors on the same page, as far as scheduling. Some instructors do not give long enough time for extensive writing for exams, etc. and one professor did not recognize Spring Break at all.

The final capstone project was an excellent way to place my ideas of what sustainability is, and incorporate it into a final sustainable management project. It really allowed for an expansion of the ideas that the program emphasizes.

Business-oriented courses not innovative in terms of sustainability - seem dressed up with "sustainability". Tended to promote the "status quo" for measuring economic growth which seemed counter to what sustainability is teaching us. Taking Capstone at the same time as some of the high numbered courses (which were very intensive in terms of reading and writing) was difficult to manage in terms of time. Perhaps Capstone should be taken alone, with lower level courses, or dialed back in terms of expectation.

Would like to see more real world applications throughout the entire program rather than just the Capstone. Perhaps engage with supporting businesses along the way. I would like to see a 'community forum' where students could discuss issues of interest outside of any individual course. Very pleased with program and how all of the disparate areas were brought together.

Enjoyed the content organization and flow of all courses. Business partnerships involvement should be expanded and be included more in courses as applied case studies - ie provide real world applications. More aggressive in acquiring co-op and internship relationships.

Missing an element of 'communication' - ie professional "sustainability-speak" - ability to respond to sustainability critiques. Perhaps leadership training for facing people who challenge sustainability in the real world.

Some professors seem to participate in the courses in a very limited way.

Discussion board doesn’t work if the professor is not present in the conversation. The more comments that professors provide, the better. Late grading has sometimes been a problem. Video discussion doesn’t work. There should be some way that students can meet with each other outside of class, or Skype could be used in class to allow students to work together. This would allow students to develop better face-to-face skills and to provide a social dimension to class.
<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Slightly Disagree</th>
<th>Slightly Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1=Not at All Important  2  3  4  5  6=Extremely Important

I was hoping that the program would address navigating the local, state, federal, and international political environments more deeply. I also had hoped more information was provided in terms of job opportunities in these political environments. I feel that in any future role regarding sustainability, private or public, politics will end up affecting their career deeply and this was not addressed as substantially as I wanted it to be. It would be nice to have a career services/opportunities course to give some direction on the kinds of jobs that are available, or will be available in the future, in the growing area of sustainability. I have found the program to be extremely enjoyable and fulfilling and have recommended it to many people. If I had to do it all over again, I definitely would. It is good that the Masters program is picking up some of the more advanced topics, but it might have been nice for them to have been addressed somewhat in the undergrad program – specifically research methods and the built environment.

Students should have a stronger background in economics before beginning program, or be given some kind primer at the beginning of the course. Technical writing course was very helpful, especially as a returning student. The systems thinking course helped bring everything together. Enjoyed the ecology course and had hoped for more like this. Students should begin working on their Capstone project sooner. Perhaps even looking at the Capstone Orientation at the beginning of the second year, in order to begin getting a project lined up. As soon as it is accessible to them, they should starting thinking about it. It would be interesting to have guest lecturers in the courses, people who were presently working in the industries being discussed in the course. There is very little offered concerning sustainable agriculture, more from the production side. Students seem to have a limited understanding as reflected in discussions. Given that Wisconsin is an agriculture state this seems an important industry to cover.