Agricultural Studies Major
Assessment Plan

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Department of Agricultural Economics
College of Agriculture, Food and Environmental Sciences
UW-River Falls
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Introduction

The major was originally implemented in the 1960s as the General Agriculture major and was an alternative to the then exclusive program in Agricultural Education. It was designed as an option for those students not interested in teaching. Since then, an array of other majors has also been added in the college, and while the major has continued, the name was changed in the early 1970s to Broad Area Agriculture and to Agricultural Studies in 2000.

For most of its existence, this interdisciplinary major was managed by the Dean’s Office with consultation from the department chairs. Student advising was done by the college deans and various faculty members in the college. The major was identified as serving three student populations: 1) pre-majors interested in agriculture but undecided about a major; 2) students preferring a more general and flexible agriculture curriculum; and 3) transfer students.

A major development in the program occurred in the mid-90s in connection with the Reach for the Future Strategic Plan. An additional science (chemistry or biology) requirement and courses in Agricultural Education and Food Science were added to the major. A requirement for more upper division courses was also added.

A second major development in the program was in response to the Program Review in 2000. The name was changed to Agricultural Studies. A new minor in Agricultural Studies was approved to give students not majoring in agriculture a means of receiving education in agriculture. The college decided to eliminate this minor in 2018 because no non-CAFES students had opted to pursue the minor. Another change from that Program Review was a requirement that all students in the major complete a minor from Agricultural Business, Agricultural Economics, Farm Management, Agricultural Engineering Technology, Dairy Science, Animal Science, Food Science, Agronomy, Conservation, Environmental Sciences, Geology, Horticulture, Hydrogeology, Land Use Planning, Outdoor Education, or Soil Science.

A third significant change in the program came in 2006 when a new academic home for the program was established in the Agricultural Economics department rather than the Dean’s Office.

The final major change occurred in response to the May 2010 Program Review. Student feedback solicited as a part of that process indicated that the breadth of the major is seen as a weakness. Comments referred to “lack of focus”, “too broad” and “isn’t really specialized”. Based on these concerns, the major was revamped in fall 2012. Three classes are now required in each of the major areas in CAFES (agricultural business, agricultural engineering technology, animal/dairy science, and plant/soil science) rather than the “cafeteria” approach that characterized the program prior to 2012. Depth of understanding in one field is developed by the requirement that students complete 15 additional credits in a discipline within CAFES. Depending on the selection of classes comprising these 15 credits, the student may complete a minor in that discipline.
Mission:
The mission of the Agricultural Studies program is to provide students with an understanding of the technical and social science factors that shape the food and fiber sector.

Section 1: Learning Outcomes

Section 1a – Agricultural Studies’ Student Learning Outcomes

Upon completion of their coursework, graduates of the Agricultural Studies program will be able to:

1. demonstrate an understanding of ethical decision-making
2. demonstrate competence in a broad array of agricultural disciplines
   - Agricultural business competencies
     ▪ make decisions using economic principles
     ▪ use data to make decisions
     ▪ communicate business decisions effectively
   - Agricultural engineering technology competencies
     ▪ identify, analyze and solve technical problems
     ▪ apply engineering principles to agricultural systems
     ▪ evaluate numerous solutions to open-ended problems
   - Animal/Dairy science competencies
     ▪ understand animal nutrition and genetic principles
     ▪ properly care for and handle animals
     ▪ manage animal enterprises
   - Crops/Horticulture/Soils competencies
     ▪ understand crop plant characteristics and management practices required in growing crops
     ▪ understand soil formation and physical, chemical, and biological aspects of soils
     ▪ communicate the impact of crop production practices on soil properties and the environment
   - Agricultural Education competencies
     ▪ construct an argument supporting a specific position
   - Food Science competencies
     ▪ Understand food processing issues
3. demonstrate competence in the specific agriculture or related discipline that was chosen as an emphasis area within the major
Section 1b – Measurability of Agricultural Studies’ Student Learning Outcomes

The means by which the Agricultural Studies Student Learning Outcomes are measured is described in detail in Section 3.

Section 1c – Agricultural Studies’ Learning Outcomes and UWRF Strategic Goals

UWRF has identified three Strategic Goals as a part of the current Strategic Plan:

1. Distinctive Academic Excellence

The Agricultural Studies program aligns well with the University’s strategic goals. As the second oldest program in CAFES, it draws on expertise across the College. The program’s flexibility enhances the efficiency of resource use within the College by attracting and retaining a group of students who might opt out of a university education if they did not have the opportunity to, broadly speaking, design their own major. The students thus retained, increase enrollment in classes across the college. Because the program provides for a significant level of customization, it enables this unique set of students to pursue their individual academic passions, creating an excellent academic experience for them. The Agricultural Studies program provides distinctive academic excellence by giving students in this program both the breadth of a traditional broad area studies program and a more in-depth understanding of a specific element of agriculture by requiring a 15-credit area of concentration.

2. Global Education and Engagement

Compared to the U.S. economy as a whole, agriculture is twice as dependent on international markets; the U.S. exports more than 20% of our agricultural output. CAFES has recently expanded our international agriculture offerings (e.g. agriculturally focused trips to Argentina, Holland, Ireland, and India) and the flexibility offered by the Agricultural Studies program enables students with international interests to take advantage of these new opportunities.

3. Innovation and Partnerships

CAFES in general is well-known for the extent and quality of its contacts with off-campus stakeholders. Through our extensive internship program and industry networking opportunities, Agricultural Studies majors have many opportunities to advance their professional and career opportunities with industry. Again, the program’s flexibility enables these students to use these opportunities to advance toward their degree.

In the current Strategic Plan, the campus annually selects a number of plan initiatives. Recent plan initiatives included the China Ag University and Dairy Plant Marketing, Argentina study tour, which have direct linkages to the competency listings in Section 1a.
Section 1d – Agricultural Studies’ Student Learning Outcomes and Meeting the Professional and Intellectual Needs of Graduates

The Department of Agricultural Economics regularly gets input from students (Senior Feedback Survey) and employers (Employer Survey) about the professional and intellectual needs of Ag Studies graduates. The department has responded to those comments by making changes to the program over time. For instance, early results from the Senior Feedback Survey indicated that students didn’t feel they were getting enough depth of understanding from the program. In response, the department restructured the major to include three courses from each of the four key agricultural disciplines: agricultural engineering (structures and equipment), agricultural economics (business), crops and soils (plants), and animal science (livestock). Further, the program is structured so that students can use their 15-credit emphasis to complete a minor in one of these four programs if they so desire.

Further, the department evolves the program in response to programmatic changes in other CAFES programs. For instance, in 2018-19 the department will be modifying the program in response to substantial changes to the animal science and agricultural engineering technology programs.

Section 1e – Agricultural Studies’ Student Learning Outcomes and External Stakeholder Needs

The Department of Agricultural Economics regularly collects feedback from external stakeholders, primarily employers of our graduates, on the degree to which they feel the program’s student learning outcomes meet their needs. More detail about these efforts is included in Sections 3 and 4.

Section 1f – Broad Learning Outcomes are Supported by Specific Content/Skill Learning Outcomes

The Ag Studies program, as noted is designed to expose students to four key disciplines in agriculture: agricultural engineering, agricultural economics, crops and soils, and animal science. As the pre-/post-test shows, students are expected to learn and retain key concepts and competencies from this exposure.
Section 2. Profile of Where Learning Outcomes Are Being Achieved

Sections 2a and 2b – Specific Courses Associated with Agricultural Studies’ Student Learning Outcomes coupled with a Course Map

Table 1 displays the Agricultural Studies curriculum array. This array identifies where the subject matter needed to achieve a learning objective is introduced (I), emphasized (E), or reinforced (R).

Table 1. Agricultural Studies Curriculum Array

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Ethical Decision Making</th>
<th>Breadth of Agricultural Competencies</th>
<th>Depth of Agricultural Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAFES Foundation courses</td>
<td></td>
<td>I</td>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td>ESM 105 or ANSC 115 or PLSC 120</td>
<td>3</td>
<td>I</td>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td>AGEC 230</td>
<td>3</td>
<td>I</td>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td>AGEN 150</td>
<td>3</td>
<td>I</td>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td>PLSC 161</td>
<td>3</td>
<td>I</td>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td>ANSC 111</td>
<td>3</td>
<td>I</td>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td>SOIL 210</td>
<td>3</td>
<td>I</td>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td>FDSC 110</td>
<td>3</td>
<td>I</td>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td><strong>Agricultural business competencies:</strong></td>
<td>9</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>AGEC 305, 320, 345, 355, 360, 365, 405,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>410, 440, 455</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Agricultural education competencies:</strong></td>
<td>3</td>
<td>R</td>
<td>I</td>
<td>R</td>
</tr>
<tr>
<td>AGED 230, 202</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Agricultural engineering technology:</strong></td>
<td>9</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>competencies: GENG 235, AGEN 320, 325,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>350, 363, 365</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Animal/Dairy science competencies:</strong></td>
<td>9</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>ANSC 231, 232, 257</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Crops/Horticulture/Soils competencies:</strong></td>
<td>9-11</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>CROP 263, 266, 267, 368, 468, HORT 169,</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>310, 327, 347, SOIL 311, 440</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td><strong>Food processing competencies:</strong> AGEN 352,</td>
<td>3</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>FDSC 202, 302 ANSC 238 or</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FDSC 238 ANSC 240 or FDSC 240</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Emphasis area</strong></td>
<td>15</td>
<td>E</td>
<td>R</td>
<td>E</td>
</tr>
</tbody>
</table>

An “I” indicates where learning outcomes are introduced. An “R” indicates where learning objectives are re-enforced. An “E” indicates where learning objectives are emphasized.

Section 2c – The Agricultural Studies’ Program and Out of Classroom Experiences

The Agricultural studies program does not require an out-of-classroom experience. However, all students in this major are encouraged to seek out and participate in these activities, some of which are described below.

Internships: In a typical year, more than 100 CAFES students take an internship for credit through the CAFES Internship office. These internships are faculty supervised and designed to provide the student with an exceptional work and learning experience.
Most internship experiences meet learning Outcomes 1 and 3. Internships fit into the program via the 15 credit Emphasis area. All students are assessed by the supervisor at the organization at which they work.

**Student clubs & organizations:** CAFES has a large number of student clubs and organizations and many Agricultural Studies majors participate as members and leaders. This experience helps meet all 3 learning outcomes. Since the 2014-2015 academic year, data has been collected from graduates (Graduating Senior Exit Survey) regarding regarding this experience.

**International:** Agricultural Studies majors are encouraged via the advising process to consider various international experience programs including those noted earlier as well as Wisconsin in Scotland, Study Abroad. This experience helps meet all three learning outcomes. Since the 2014-2015 academic year, data has been collected from graduates (Graduating Senior Exit Survey) regarding learning this experience.

**Undergraduate research:** CAFES faculty are both active and successful as grant writers and Agricultural Studies majors are encouraged via the advising process to pursue undergraduate research opportunities with these faculty. Each department has an independent research type class at the 400 level that fits into the 15 credit Emphasis area of the major. This experience helps meet learning outcomes 1 and 3. Since the 2014-2015 academic year, data has been collected from graduates (Graduating Senior Exit Survey) regarding this experience.
Section 3. Venues for assessing Learning Outcomes

Post-tests, internship supervisor feedback, employer surveys, and graduating senior exit surveys will be used to assess the program.

Sections 3a – Venues, Tools, Artifacts, and Methods for Direct Assessment of Agricultural Studies Student Learning Outcomes

The agricultural economics department, with input from the other four departments in CAFES, developed an agricultural studies post-test during the fall of 2017. The 29-question test was administered for the first time at the end of fall semester, 2017 and again at the end of spring semester 2018. A copy of the post-test is included in Appendix A. Starting in the Fall of 2018 the same test will be administered to new majors on Academic Day as a pre-test.

Section 3b – Out of Classroom Learning Experiences and Agricultural Studies’ Student Learning Outcomes

Students in the Agricultural Studies Program are encouraged to take an internship for credit. The agricultural economics department will compile the evaluation these students receive from their internship supervisor. A copy of this feedback form is in Appendix A.

Section 3c – Indirect Assessment of Agricultural Studies’ Student Learning Outcomes

Graduating Senior Exit Survey: This survey, which the department has used for several years already, addresses both achievement of the learning outcomes and satisfaction with the major. A copy of this Qualtrics Survey is located in Appendix B.

Alumni feedback: The Agricultural Economics department meets with an Alumni advisory committee once during the school year. At a future meeting, these external stakeholders will review the Agricultural Studies student learning outcomes and, based on their experiences, suggest modifications to these outcomes. The department and the Agricultural Studies coordinating committee (CAFES department chairs) will use this feedback, in conjunction with the other direct and indirect indicators of the degree to which students are acquiring the desired competencies, to modify the learning objectives and the means by which students are expected to acquire them.

Employer Survey: This annual survey will target agriculture-oriented businesses attending the Career Fair and will address both achievement of the learning outcomes and satisfaction with UWRF Agriculture Studies majors. The department has used this survey to gather employer input on the Ag Studies program since fall 2014. A copy of this survey is included in Appendix B.

Assessment venues summary

Ethical Decision Making Learning Outcome: Directly measured using pre-/post-test results and indirectly measured using the graduating senior exit survey and the employer survey.
Breadth of Agricultural Competencies Learning Outcome: Directly measured using post-test results and indirectly measured using the graduating senior exit survey, and the employer survey.

Depth of Agricultural Competencies Learning Outcome: We do not currently have a direct measure of the depth of agricultural competency – the diverse nature of the 15-credit emphasis, where depth is gained, makes direct assessment difficult. Depth is indirectly measured using the graduating senior exit survey, the employer and internship supervisor surveys and the employer survey.
Section 4. Process for Assessment Improvement

The Agricultural Studies program, as noted in the introduction, has frequently been improved in response to direct and indirect assessment data, the most recent occurring fall 2012.

Section 4a – Not applicable

Section 4b – The Agricultural Studies’ Assessment Cycle

Table 2. Cycle of Assessment Timetable

<table>
<thead>
<tr>
<th>Assessment Component</th>
<th>Assessment Cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compilation Pre-/Post-Test results</td>
<td>Annually in December and May</td>
</tr>
<tr>
<td>Graduating Senior Exit Interview</td>
<td>Annually in December and May</td>
</tr>
<tr>
<td>Alumni feedback</td>
<td>When advisory council meetings held</td>
</tr>
<tr>
<td>Employer Survey</td>
<td>Annually in September - October</td>
</tr>
<tr>
<td>Internship Supervisor Feedback</td>
<td>Annually August-September</td>
</tr>
<tr>
<td>Discussion of Assessment Results</td>
<td>Biannually at the Department of Agricultural Economics retreats or at weekly department meetings and with the Agricultural Studies coordinating committee(CAFES department chairs)</td>
</tr>
<tr>
<td>Department and Agricultural Studies coordinating committee(CAFES department chairs) Consensus Concerning Changes As a Result of the Assessment Results</td>
<td>Biannually at the Department of Agricultural Economics retreat or at weekly department meetings</td>
</tr>
</tbody>
</table>

Section 4c – Comparability of and Assessment of Learning in Different Modes of Delivery, Locations, and Duration of Courses

The Ag Studies program offers no courses of its own. We, therefore, defer to the departments across CAFES that offer the courses that Ag Studies majors take to ensure classes taught by different instructors and/or by different means are comparable.

Section 4d - Ag Studies Assessment Process Accountability

The results of the compilation of pre-/post-test, the graduating senior feedback survey, the employer and internship supervisor surveys and alumni feedback will be collected and analyzed by the assessment coordinator and the department chair regarding the relevance and importance of student learning outcomes. The assessment coordinator will organize the information, make preliminary evaluations and interpretations, and present the data and preliminary results to the department at the biannual department retreats.
(May and January of each year) and/or a weekly departmental meeting. The department will provide further input on the evaluation, and interpretation, and make recommendations to improve the program. Changes, if any, in curriculum and content will be made based on departmental and Agricultural Studies coordinating committee (CAFES department chairs) consensus. This was the general process followed for the most recent significant improvement to the program, which commenced in fall 2012 and is discussed in the Introduction to this assessment plan.

The alumni feedback results data will be collected and initially analyzed by the assessment coordinator and the department chair. These preliminary results will then be presented to the department at the biannual department retreats and/or a weekly department meeting and to the Agricultural Studies coordinating committee (CAFES department chairs). Different interpretations of the data and potential improvements are suggested and discussed by department faculty.

Program changes, if any, are proposed based on departmental and Agricultural Studies coordinating committee (CAFES department chairs) consensus. Because the Agricultural Studies program draws on resources from across the college, changes to the program have to be endorsed by the other departments in CAFES.

Section 4e – Who will maintain data & document assessment based actions

The Chair of the Agricultural Economics department will determine who will be responsible for collecting the Exit, Employer, Internship supervisor, and Post-test results. That person will be responsible for maintaining and documenting assessment-based actions.

Section 4f – Implementation of Ag Studies Revisions Based on Assessment Results

The Action Plan for implementing assessment based changes is presented in Table 4 below. Minor revisions will be implemented the following school year. More substantial revisions needing approval of college and/or university committees will be implemented as soon as possible, preferably the school year after the proposed revisions have been approved by the committees noted above. The department chair is responsible for consulting with other CAFES departments about proposed changes to the Agricultural Studies curriculum and seeking approval of such changes by the appropriate college and university committees.
Table 3. Action Plan

<table>
<thead>
<tr>
<th>Action</th>
<th>When</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Department chair along with representatives of the Agricultural Studies program coordinating committee review assessment results.</td>
<td>January/May of each year</td>
</tr>
<tr>
<td>2. Determination of need for changes.</td>
<td>January/May of each year</td>
</tr>
<tr>
<td>3. Communicate recommended changes to Agricultural Studies coordinating committee.</td>
<td>August – September of each year</td>
</tr>
<tr>
<td>4. Seek approval for changes from affected CAFES departments.</td>
<td>September – February of each year</td>
</tr>
<tr>
<td>5. Seek approval for changes from affected CAFES and University committees.</td>
<td>February – April of each year</td>
</tr>
</tbody>
</table>

Section 4g – Processes/Procedures for Communicating Ag Studies Assessment Results and Actions

Assessment results will be saved to the department’s Agricultural Studies Assessment folder on the T-drive. All members of the department have access to this folder and the data therein. A one-page summary of the Agricultural Studies assessment will be posted in the Agricultural Economics Departmental bulletin board. The Assessment plan will be available via the UWRF website in the A to Z Index under Assessment. Assessment results will be presented via the UWRF website in the Agricultural Economics department area.
Appendix A – Direct Assessment Instruments

Ag Studies Post-Test

Q1 The Agricultural Studies degree requires you to take courses across a broad array of agricultural disciplines. This test will not affect your graduation, grade point average, or anything else in your academic record. It is just to provide us a means of determining the degree to which the program is achieving the learning outcomes the College has defined for the major.

Q2 Ethical business practices are important in market economies because they:

- reduce “transactions costs” between buyers and sellers (1)
- allow firms to take advantage of tax incentives (0)
- ensure shareholders receive a return on their investment (0)
- create additional domestic demand for agricultural products (0)

Q3 Ethical business practices are important to a firm for all of the following reasons except:

- they provide a short-term tactical advantage over the competition (1)
- the firm is better positioned to attract and retain higher quality employees (0)
- it will have lower legal expenses (0)
- decision-making within the firm is smoother/more efficient (0)

Q4 Which of the following is a more important challenge to agribusiness managers compared to managers in other sectors:

- Elastic demand for their products (0)
- Oligopolistic firms dominate many parts of supply chain (0)
- Dependence on biology introduces a number of difficult to manage exogenous factors (1)
- Intense global market competition (0)

Q5 Price risk is a bigger management issue in agriculture than in most other sectors because:

- Both demand and supply tend to be elastic (0)
- Both demand and supply tend to be inelastic (1)
- Demand is elastic, while supply is inelastic (0)
- Demand is inelastic, while supply is elastic (0)
Q6 A commonly used indicator of firm’s solvency is:

- The current ratio. (0)
- Gross margin. (0)
- Asset turnover ratio. (0)
- Debt to equity ratio. (1)

Q7 Suppose you had data on the average corn yields of the roughly 400 farmers with which your business works and you see that most of your farmers had yields that cluster around 200 bushels per acre with a few under 150 bushels per acre, but quite a few with yields exceeding 250 bushels per acre. Which of the following would probably be the best number to calculate and present to your boss who has asked what a representative yield is for your farmers?

- The average or mean bushels per acre (0)
- The mode of bushels per acre (0)
- The range of bushels per acre (0)
- The median bushels per acre (1)

Q8 Suppose you have 8 agronomists working with the 400 farmers with which your business works and each handles about 50 farms. If you wanted to see if there was a relationship between the average yields of farmers and the agronomist with which they work, what sort of graph would probably be the best option?

- A line graph (0)
- A bar graph (1)
- A pie chart (0)
- A surface or radar chart (0)

Q9 Conflict resolutions communication requires the sender to do all of the following except:

- Put tendency to judge on hold (0)
- Use “I” messages (1)
- Be a reflective & active listener (0)
- Suggest & advise the receiver (0)

Q10 An effective debate would include all the following except:

- Concrete data supporting your position (0)
- Your personal feelings and beliefs about your position (1)
- Relevant facts supporting your position (0)
- A concise opening and closing statement indicating your position (0)
Q11. If the unit electrical cost is $0.10/kW-h, what is the total monthly electrical cost for a swine barn that uses:

- Eight 100-watt lightbulbs operating 240 hours/month
- One 300-watt security light operating 360 hours/month
- One 2.0 kW heater operating 180 hours/month
- One 1.0 kW circulation pump operating 100 hours/month

$43.50 (0)
$59.20 (0)
$76.00 (1)
$92.00 (0)

Q12. Hydraulic fluid flows through a hose at 42. \( \text{in}^3/\text{s} \). What is this flowrate in gpm?

Hint: 231\( \text{in}^3 \) = 1.0 US Gallon

47. gpm (0)
160 gpm (0)
11. gpm (1)
0.0030 gpm (0)

Q13. The infiltration capacity of a certain soil group is 2.7\( \text{in/hr} \). During a rainfall event with a constant intensity of 3.2\( \text{in/hr} \), which of the following is most likely to occur?

There will be run-off (0)
The rainfall will be totally absorbed into the soil (0)
There will be runoff and/or ponding (1)
All the water will run off due to the high intensity, and cause severe erosion (0)

Q14. Benchmark 1 has an elevation of 126.22 ft and Benchmark 2 has an elevation of 87.66 ft. The horizontal distance between the two locations is 700.00 ft. What is the average slope between these two points?

-5.5% (1)
0.055% (0)
-0.306% (0)
30.6% (0)

Q15. A sample of grain was taken from the field and weighed 204.8g. After drying it weighed 171.3g. What is the wet basis moisture content of this grain sample?

19.5% (0)
83.6% (0)
16.4% (1)
80.5% (0)
Q16 Which animals, as classified by digestive tract, have a more complex stomach and are able to utilize lower quality forages and roughages?

- Hindgut fermenters (0)
- Monogastrics (0)
- Ruminants (1)
- Bigastrics (0)

Q17 Animal breeding refers to the applications of genetics. Which of the following is a positive example of breeding animals?

- The Jersey cow has higher butter fat. (0)
- The Paint horse has improved feet and leg conformation. (0)
- The Hampshire wether has a higher ADG and reaches market weight faster. (0)
- They are all positive examples of animal breeding. (1)

Q18 What is the study and application of behavior in domestic animals?

- Meat science (0)
- Genetics (0)
- Physiology (0)
- Applied Ethology (1)

Q19 What is the main purpose of raising livestock?

- Economic profit (1)
- Weed control (0)
- Companionship (0)
- Lawn ornaments (0)

Q20 As the World population continues to grow, what do we need to do in animal agriculture to make sure that there is enough food for people to eat?

- Improve efficiencies (1)
- Farm more land (0)
- Feed more grain products (0)
- Convert to a vegetarian society (0)

Q21 What is the main difference between food science and food technology?

- Science is more applied than technology (0)
- Science is the study of food whereas technology is the application (1)
- Technology is more advanced than science (0)
- There is no difference (0)
Q22 What term is defined as access to sufficient, safe, nutritious food to maintain a healthy and active lifestyle?

- Food availability (0)
- Food access (0)
- Food utilization (0)
- Food security (1)

Q23 What benefit do the following factors provide food production: acidity (pH), temperature, time, oxygen, moisture (Aw) and additives?

- Changes that are made to enhance palatability (0)
- Interrupt microbial growth to produce safer food (1)
- Allow microbes, especially bacteria, optimum conditions for maximum growth. (0)
- They do not matter and are not of concern (0)

Q24 What are the two most controllable factors in safe handling of food?

- Hand washing and hygiene (0)
- Cooking and cooling temperatures (0)
- Time and temperature (1)
- Handling and heating leftovers (0)

Q25 Which of the following is/are not benefits of heat preservation?

- Eliminate pathogens and eliminate/reduce spoilage organisms (0)
- Eliminate the need to refrigerate leftovers (1)
- Extend shelf-life of food (0)
- All are benefits of heat preservation (0)

Q26 Soil structure refers to the:

- amount of sand, silt, and clay (0)
- arrangement of soil particles into aggregates (1)
- total amount of mineral solids (0)
- density of the soil (0)

Q27 Soil horizons develop because of:

- additions of organic and mineral matter (0)
- translocations of organic and mineral matter (0)
- transformations of organic and mineral matter (0)
- all of the above (1)
Q28 Cation exchange is the:

- conversion of an element from an inorganic to organic form in the soil (0)
- mineralization of nutrients from organic matter (0)
- the exchange of a cation between the soil solution and the soil colloid (1)
- the replacement of an element in the structure of a clay mineral (0)

Q29 What would happen to a plant’s photosynthetic rate if atmospheric CO2 levels rise?

- it would increase (1)
- it would decrease (0)
- it would not change (0)
- we can’t tell with this information (0)

Q30 What are the products of aerobic respiration?

- lactic, acetic and propionic acid (0)
- energy, moisture and carbon dioxide (1)
- ribose (and/or deoxyribose) and high energy phosphate bonds (0)
- carbohydrates and O2 (0)

Q31 This completes the Ag Studies Post Test. When you click on the advance arrows (>>), your responses will be recorded and you’ll be re-directed to the CAFES website.

Thank you very much for completing this assessment exam. We believe it will help improve the Ag Studies program over time.
Employer Evaluation of Intern

Site Supervisor Name: 
Organization: 
Intern Name: 
Semester/Year: 
Intern Major: 

Please rate your intern on the basis of this scale 1 = **lowest** and 6 = **highest**:

(1)=Strongly Disagree, (2)=Disagree, (3)=Slightly Disagree. (4)=Slightly Agree, (5)=Agree, 
(6)=Strongly Agree

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<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<tbody>
<tr>
<td>1</td>
<td>Understands job duties and responsibilities, seeks out and utilizes appropriate resources, and asks questions for clarification.</td>
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<td>2</td>
<td>Applies technical knowledge to address relevant problems. Demonstrates a strong foundation in the knowledge and skills necessary for the position.</td>
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<td>3</td>
<td>Utilizes equipment, instrumentation, software, and other technologies to perform the essential functions of the job.</td>
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<td>4</td>
<td>Reads, comprehends and communicates ideas effectively in writing and has a strong attention to detail.</td>
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<td>5</td>
<td>Listens to others, is attentive and demonstrates effective verbal communication skills.</td>
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<td>6</td>
<td>Exhibits effective problem solving skills clearly and brainstorms and/or develops ideas and options, if necessary.</td>
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<td>7</td>
<td>Demonstrates teamwork skills and ability to get along with co-workers and customers.</td>
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<td>8</td>
<td>Exhibits professional behavior and attitude, and demonstrates ability to set appropriate priorities and goals.</td>
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<td>9</td>
<td>Overall performance of the student intern as an employee.</td>
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</table>

Comments:
Appendix B – Indirect Assessment Instruments

Agricultural Studies Major Exit Survey

Q1 When you started college, were you an Agricultural Studies major?

   Yes  (1)    No  (2)

Q2 What is your minor?

    Ag Econ/Ag Business/Farm Management  (1)
    Ag Engineering  (2)
    Agronomy/Crop Science  (3)
    Animal Science  (4)
    Conservation  (5)
    Dairy Science  (6)
    Earth Science  (7)
    Environmental Science  (8)
    Food Science  (9)
    Geology  (10)
    Horticulture  (11)
    Land Use Planning  (12)
    Soil Science  (13)
    Other  (14)

Q3 In which of the following have you participated while a student at UW-River Falls

   Internship (for credit)  (1)
   Participated in student club(s)
   (if checked, please specify club(s) you've been involved in)  (2) ________________
   Undergraduate research  (3)
   International experience  (4)
   Learning community (paired classes in which the students are largely the same)  (5)

Q4 During most semesters while a student at UW-River Falls, did you:

   not have a paid job  (1)
   worked 10 hours or less a week at a paid job  (2)
   worked 11 - 20 hours per week at a paid job  (3)
   worked 21 - 40 hours per week at a paid job  (4)
   worked 40+ hours per week at a paid job  (5)

Q5 During a typical semester while a student at UW-River Falls, did you:

   study 10 hours or less a week  (1)
   study 11 - 20 hours a week  (2)
   study 21 - 40 hours a week  (3)
   study 40+ hours a week  (4)
Q6 The Agricultural Studies program has three student learning outcomes for the major and each learning outcome has a number of sub-goals. Please indicate the extent to which you feel the Agricultural Studies program has enabled you to:

<table>
<thead>
<tr>
<th>Strongly agree (1)</th>
<th>Agree (2)</th>
<th>Somewhat Agree (3)</th>
<th>Somewhat Disagree (4)</th>
<th>Disagree (5)</th>
<th>Strongly Disagree (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding ethical decision-making (1)</td>
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<td>Develop your ability to make management decisions using economic principles (2)</td>
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<td>Develop your ability to use data to make business decisions (3)</td>
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<td>Communicate business decisions effectively (4)</td>
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<td>Develop your ability to identify, analyze and solve technical/mechanical problems (5)</td>
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<tr>
<td>Develop your ability to apply engineering principles to agricultural systems (6)</td>
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<td>Develop your ability to evaluate numerous solutions to open-ended problems (7)</td>
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<td>Develop your ability to understand animal nutrition and genetic principles (8)</td>
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<td>Develop your ability to understand proper care and handling of animals (9)</td>
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<td>Develop basic management of animal enterprises (10)</td>
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<tr>
<td>Develop a basic knowledge of crop characteristics and management practices (11)</td>
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</tbody>
</table>
Q6. Continued

Develop a basic understanding of soil formation and the physical, chemical and biological aspects of soils (12) 

Develop your ability to communicate the impact of crop production practices on soil properties and the environment (13) 

Develop your ability to communicate (orally and in writing) effectively (14) 

Develop your ability to construct an argument supporting a specific position/opinion (15) 

Develop a basic understanding of food processing issues (16) 

Develop a basic understanding of food safety issues (17) 

Develop competency in the specific discipline chosen as your emphasis/minor (18)
Q7 What were the reasons you choose to do a major in Agricultural Studies?
________________________________________________________________

Q8 What do you think are the strengths of an Agricultural Studies major compared to other majors in CAFES?
________________________________________________________________

Q9 What do you think are the weaknesses of an Agricultural Studies major compared to other majors in CAFES?
________________________________________________________________

Q10 How would you rate your academic advising during your program at UW-River Falls

    Excellent (1)
    Good (2)
    Fair (3)
    Poor (4)
    No Opinion (5)

Q11 Overall, how satisfied are you with your experience at UW-River Falls

    Very Satisfied (1)
    Satisfied (2)
    Dissatisfied (3)
    Very Dissatisfied (4)
    No Opinion (5)

Q12 Do you have anything else you'd like to say about the Agricultural Studies program or UW-River Falls?
________________________________________________________________

Q13 Are you planning to attend graduate or professional school (e.g. Masters, PhD, Law School, etc.) after you finish at UWRF?

    Yes (1)         No (2)

*Skip To: Q15 If Are you planning to attend graduate or professional school (e.g. Masters, PhD, Law School, etc.)... = No*
Q14 With respect to the graduate or professional school you will be attending,
  What is the name of the university? (1) __________________________________________
  What will your program of study be? (2) ________________________________________
  What degree are you seeking (e.g. masters? PhD?)? (3) ______________________________
  In what city is the university located? (4) _______________________________________
  In what state is the university located? (5) _______________________________________

Q15 Do you have a job already lined up for after graduation?
  Yes (1)  No (2)  

  *Skip To: Q17 If Do you have a job already lined up for after graduation? = No*

Q16 Employer information
  Name of employer? (1) ________________________________
  Position title? (2) _________________________________
  City? (3) ______________________________________
  State? (4) ______________________________________

Q17 Will your job after graduation be:

<table>
<thead>
<tr>
<th></th>
<th>Yes (1)</th>
<th>No (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-time (e.g. 40 hours/week) (1)</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>Related to your major (2)</td>
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</tbody>
</table>
Q18 Click If you know, please indicate what your post-graduation annual salary range will be.

I currently have a part-time job only (1)
Under $12,000 (2)
$12,001 - $14,000 (3)
$14,001 - $16,000 (4)
$16,001 - $18,000 (5)
18,001 - $20,000 (6)
$20,001 - $22,000 (7)
$22,001 - $24,000 (8)
$24,001 - $26,000 (9)
$26,001 - $28,000 (10)
$28,001 - $30,000 (11)
$30,001 - $32,000 (12)
$32,001 - $34,000 (13)
$34,001 - $36,000 (14)
$36,001 - $38,000 (15)
$38,001 - $40,000 (16)
$40,001 - $42,000 (17)
$42,001 - $44,000 (18)
$44,001 - $46,000 (19)
$46,001 - $48,000 (20)
$48,001 - $50,000 (21)
$50,001 - $52,000 (22)
$52,001 - $54,000 (23)
$54,001 - $56,000 (24)
More than $56,000 (25)

Q19 Thank you for providing your feedback on the agricultural studies program.
Agricultural Studies Industry Feedback Form

Q1 Please indicate how important you think the following skills are for a graduate with a degree in broad area agriculture/agricultural studies?

<table>
<thead>
<tr>
<th>Skill</th>
<th>Very Important</th>
<th>Important</th>
<th>Somewhat Important</th>
<th>Not Important</th>
<th>Don't Know/No Opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td>An understanding of ethical decision-making</td>
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<tr>
<td>An ability to make decisions using economic principles</td>
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<td>Able to use data to make decisions</td>
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<td>Able to communicate business decisions effectively</td>
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<td>Can identify/analyze/solve technical problems</td>
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<td>Can apply engineering principles to ag systems</td>
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<td>Can evaluate multiple solutions to a problem</td>
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<td>Understands genetic and nutrition principles</td>
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<td>Can properly care for/handle animals</td>
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<td>Can manage animal enterprises</td>
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<td>Understands crop plant characteristics and management practices</td>
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<td>Understands soil formation and its biologic, chemical and physical aspects</td>
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<td>Can communicate impact of crop production on soils and the environment</td>
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<td>Can construct an argument to support a position</td>
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<tr>
<td>Understands food processing issues</td>
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</table>
Q2 Are there other skills/competencies that you feel should be added to this list of the UW-River Falls broad area agriculture/ag studies student learning outcomes?

That completes the survey.

Thank you very much for your input!