

Assessment of Student Learning in General Education: Annual Report
2019-2020

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Part I – General Education Outcomes

Upon completion of the Associate of Applied Science degree students should be able to demonstrate the following skills and abilities (as defined within the Association of American Colleges & Universities VALUE Rubrics):

1. **Written Communication.** Written communication is the development and expression of ideas in writing. Written communication involves learning to work in many genres and styles. It can involve working with many different writing technologies, and mixing texts, data, and images. Written communication abilities develop through iterative experiences across the curriculum.
2. **Oral Communication.** Oral communication is a prepared, purposeful presentation designed to increase knowledge, to foster understanding, or to promote change in the listeners' attitudes, values, beliefs, or behaviors.
3. **Quantitative Literacy.** Quantitative Literacy (QL) – also known as Numeracy or Quantitative Reasoning (QR) – is a "habit of mind," competency, and comfort in working with numerical data. Individuals with strong QL skills possess the ability to reason and solve quantitative problems from a wide array of authentic contexts and everyday life situations. They understand and can create sophisticated arguments supported by quantitative evidence and they can clearly communicate those arguments in a variety of formats (using words, tables, graphs, mathematical equations, etc., as appropriate).
4. **Problem Solving.** Problem solving is the process of designing, evaluating and implementing a strategy to answer an open-ended question or achieve a desired goal.
5. **Civic Engagement.** Civic engagement is "working to make a difference in the civic life of our communities and developing the combination of knowledge, skills, values and motivation to make that difference. It means promoting the quality of life in a community, through both political and non-political processes." (Excerpted from *Civic Responsibility and Higher Education*, edited by Thomas Ehrlich, published by Oryx Press, 2000, Preface, page vi.) In addition, civic engagement encompasses actions wherein individuals participate in activities of personal and public concern that are both individually life enriching and socially beneficial to the community.
6. **Critical Thinking.** Critical thinking is a habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion.
7. **Information Literacy.** The ability to know when there is a need for information, to be able to identify, locate, evaluate, and effectively and responsibly use and share that information for the problem at hand. – Adopted from the National Forum on Information Literacy.
8. **Intercultural Knowledge and Competence.** Intercultural Knowledge and Competence is "a set of cognitive, affective, and behavioral skills and characteristics that support effective and appropriate interaction in a variety of cultural contexts." (Bennett, J. M. 2008. Transformative training: Designing programs for culture learning. In *Contemporary leadership and intercultural competence: Understanding and utilizing cultural diversity to build successful organizations*, ed. M. A. Moodian, 95-110. Thousand Oaks, CA: Sage.)

Part II – Assessment Results

Student attainment of SLOs is measured in the following courses. Results are for the most recent semester taught.

Criterion One: Written Communication

1. *ENG 1503: Technical Communication I*

- Properly format letters, memos, and emails
- Compose and write documents for different audiences
- Write in a professional tone
- Edit drafts carefully to eliminate errors in grammar, usage, and mechanics
- Use reason and evidence to support claims
- Identify logical fallacies and assumptions in the arguments of others
- Use stages of the writing process (brainstorming, outlining/drafting, researching, writing, revising & editing) to compose documents

2. *ENG 1903: Writing & Inquiry*

- Apply principles of the writing process.
- Construct effective thesis statements.
- Write unified and well-supported essays with coherent paragraphs.
- Adapt writing to engage different audiences.
- Implement context-appropriate rhetorical methods.
- Evaluate student, peer, and professional writing.
- Revise essays for content, structure, tone, voice, and diction.
- Edit the draft carefully to eliminate errors in grammar, usage, and mechanics.
- Evaluate source relevance and credibility.
- Utilize a recognized formatting and citation style (such as APA) to ethically incorporate source material.
- Demonstrate technological literacy in collecting source material.
- Use reason and evidence to support claims
- Identify logical fallacies and assumptions in the arguments of others

Direct Assessment Results from Previous Semester Taught

	ENG 1503 Technical Communication I	ENG 1903 Writing & Inquiry
# of SLOs assessed	33	143
# of SLOs met	31	118
% of SLOs met	94	83

Criterion Two: Oral Communication

1. *SPC 1103: Sales Communication*

- Become familiar with the steps of the sales process – prospecting, preparing, opening, presenting, closing, and servicing the sale.
- Work together to prepare group sales presentations.
- Gain a better understanding of sales through shadowing a professional salesperson.
- Develop connections between academics and careers through shadowing professionals
- Develop skills in oral communication by becoming involved in the sales process by participating in an actual sales presentation.
- Develop skills in written communication by developing expression of ideas through writing assignments and a written final project.

2. *SPC 1113: Public Speaking*

- Write and deliver speeches that inform and persuade.
- Create and use appropriate visual support, such as PowerPoint, for your presentations.
- Organize ideas and arguments logically.
- Adapt information and arguments to a specific audience
- List or identify various aspects of good delivery (a strong conversational speaking style, the importance of eye contact, vocal variety, natural gestures, etc.)
- Use appropriate language choice depending on the audience (e.g., clear, persuasive, direct, etc.)
- Use new media to create a podcast episode advocating something of importance to you.
- State that you feel more confident about speaking in public.

Direct Assessment Results from Previous Semester Taught

	SPC 1103: Sales Communications	SPC 1113: Public Speaking
# of SLOs assessed	194	55
# of SLOs met	178	41
% of SLOs met	92	93

Criterion Three: Quantitative Literacy

1. *ECN 1803: Statistics*

- Show an understanding of difference of types of data and data sources
- Summarize and interpret data in a tabular format using frequency distributions and appropriate graphs
- Define and apply an understanding of the concept of a random variable and differentiate the population from a sample
- Work with statistical data in a spreadsheet environment to apply a hypothesis test for probability or setting trends.

2. *MTH 1403: Agricultural Math*

- Students will be able to solve mathematical problems to efficiently produce crops. Examples include fertilizer, pesticide, and irrigation requirements and application rates; crop yield estimates and harvest losses; seed requirements and seeding rates.
- Students will be able to solve mathematical problems to efficiently produce livestock. Examples include feed requirements and feed rationing; range and pasture stocking rates; weight gains and milk production.
- Students will be able to solve mathematical problems to efficiently operate agricultural equipment. Examples include fuel requirements and consumption; horsepower requirements; equipment calibration and specifications.
- Students will be able to solve mathematical problems to estimate distance, area, weights, and volume in agriculture.
- Students will be able to solve mathematical problems to convert units of measurement.
- Students will be able to solve mathematical problems to quantify input costs and economic returns in agriculture.
- Students will be able to solve mathematical problems to efficiently build and utilize agricultural structures. Examples include grain or hay storage; equipment storage; livestock housing and handling.

3. *MTH 2203: Introduction to Statistics*

- Construct and interpret frequency distributions and graphs of categorical variables
Construct and interpret frequency distributions of histogram, polygon, pie chart, bar chart, and pareto.
- Produce and interpret stem-and-leaf diagram, time series graph, box-and-whisker plot or Boxplot, and scatter diagram.
- Produce and interpret numerical summaries.
- Produce basic descriptive data analysis and its statistical report.
- Determine the probability of an event.
- Find the number of permutations and/or combinations of an event.
- Calculate the mathematical expectation of a discrete random variable.
- Solve problems involving binomial and normal distributions.
- Analyze a set of data using percentiles and z-scores.
- Solve statistical application problems with the Central Limit Theorem.
- Construct confidence intervals for the population mean.
- State appropriate null and alternative hypotheses.
- Solve problems involving comparison of two population means.
- Describe the relationship between two variables using linear correlation.

4. *MTH 2253: Trigonometry*

- Demonstrate the direction of a directed line segment
 - Generate points on the rectangular coordinate system
 - Convert radian measure to degree measure and conversely
 - Write the general definitions of the trig function of any angle
 - List the exact value of the trig functions of certain special angles
 - Compute the approximate value of the trig functions of any angle
 - Solve problems involving right angles
 - Recognize the association between directed angle and real numbers
 - Solve problems involving trigonometric functions of real numbers
 - Evaluate trig identities using the eight fundamental identities
 - Graph variations of the trig functions
 - Solve problems involving logarithmic computation
 - Solve problems involving oblique triangles and trig functions
 - Apply the law of cosines and law of sines
 - Apply the inverse trig functions
 - Solve problems involving complex numbers
5. *VTS: 1313: Math for Veterinary Technicians*
- Calculate arithmetic operations using fractions, decimals, percents, ratios and proportions.
 - Analyze and solve application problems using fundamental arithmetic operations using fractions, decimals, percents, ratios, and proportions.
 - Apply the basic principles of algebra, geometry, statistics, and graphs to the solution of applications in veterinary care.
 - Convert within and between Metric and Standard measurement systems.
 - Solve single and multi-step dosage problems and the dilution of stock solutions to desired concentrations.

Direct Assessment Results from Previous Semester Taught

	ECN 1803: Statistics	MTH 1403 Agricultural Math	MTH 2203: Intro to Stats	MTH 2253 Trig	VTS 1313: Math for Vet Techs
# of SLOs assessed	36	259	112	99	76
# of SLOs met	30	242	85	68	60
% of SLOs met	83	97	76	69	79

Criterion Four: Problem Solving

1. *BIO 1313: Plant Science (and Plant Science Lab)*

- Students will be able to describe seed, root, stem, leaf and flower structure and function.
- Students will examine water uptake and transpiration including why transpiration is critical for plant growth.
- Students will be able to describe the major photosynthetic pathways and factors that influence the efficiency of plant photosynthesis.
- Students will be able to recognize how plants obtain stored energy for growth including source-sink relationships during plant growth and development.
- Students will be able to explain how light, temperature and stress affects plant growth and reproduction.
- Students will identify the major plant hormones and be able to describe their role in plant growth and development.
- Students will distinguish how genetics affects plant characteristics and describe methods of genetic engineering.
- Students will be able to describe growth and development of monocot and dicot agronomic crops, and relate these to selected management situations.
- Students will be able to identify important morphological structures of monocot and dicot plants.
- Students will be able to determine growth stages of corn, sorghum, soybean, small grains, and prairie and forages grasses and legumes; and relate these to selected management situations.
- Students will be able to analyze grain and forage quality.

2. *ASI 1024: Fundamentals of Animal Biology*

- Describe the scientific method and how it is utilized to conduct research.
- Understand the levels of organization of living organisms and how various reactions work to support life in those living organisms.
- Comprehend the basics of ecology for living species and how it affects diversity and population genetics.

3. *CHEM 1014: Chemistry in Context I*

- Recognize the various groups of elements on the periodic table.
- Describe the structure of an atom.
- Balance chemical equations.
- Solve stoichiometric problems.
- Describe the electron orbitals of an atom.

4. *VTS 1604: Introduction to Laboratory Science*

- discuss and practice microscopic advantages
- compare and contrast the plant cell vs the animal cell
- describe the nature of disease
- describe the role of sanitation in relation to disease control
- define biosecurity and describe common management techniques utilized to prevent disease in companion and production animals
- compare and contrast the nature of bacteria vs. viruses
- recognize and perform the three basic laboratory procedures utilized for animal related sample analysis

- list 3 diseases caused by microorganisms that offer human transmission potential.

Direct Assessment Results from Previous Semester Taught

	ASI 1024: Fundamentals of Animal Biology	BIO 1313: Plant Science	CHM 1014: Intro to Chemistry	VTS: Intro to Lab Science*
# of SLOs assessed	108	250	54	40
# of SLOs met	99	232	48	37
% of SLOs met	92	93	89	93

*Results for individual SLOs unavailable

Criterion Five: Civic Engagement

1. *AED 1023: Interpersonal Skills for Leadership*

- Practice effective communication and listening skills
- Describe personal values, ethics, strengths, and weaknesses and be able to search for constructive ways to enhance those traits
- Describe and recognize effective leadership and have a sense of their own leadership style
- Compare/contrast personal ideals on diversity and the benefits a diverse society can provide
- Summarize the service learning project and the impacts it had on the community and the individuals involved

Direct Assessment Results from Previous Semester Taught

	AED 1023: Interpersonal Skills for Leadership
# of SLOs assessed	200
# of SLOs met	192
% of SLOs met	96

Criterion Six: Critical Thinking

1. *ENG 1503: Technical Communication I*
 - Use reason and evidence to support claims
 - Identify logical fallacies and assumptions in the arguments of others
2. *ENG 1903: Writing & Inquiry*
 - Use reason and evidence to support claims
 - Identify logical fallacies and assumptions in the arguments of others

Direct Assessment Results from Previous Semester Taught

	ENG 1503: Technical Communication I	ENG 1903: Writing & Inquiry
# of SLOs assessed	38	6
# of SLOs met	31	6
% of SLOs met	82	100

Criterion Seven: Information Literacy

1. *ABM 1201: Ag Business Foundations*
 - Students will be able to identify, locate, evaluate and effectively and responsibly use and share information.
2. *AGR 1661: Agronomy Orientation*
 - Students will be able to identify, locate, evaluate and effectively and responsibly use and share information.
3. *ASI 1001: Success in Animal Science*
 - Students will be able to identify, locate, evaluate and effectively and responsibly use and share information.
4. *VTS 2241: Career Strategies*
 - Students will be able to identify, locate, evaluate and effectively and responsibly use and share information.

Direct Assessment Results from Previous Semester Taught

	ABM 1201: Ag Business Foundations	AGR 1661: Agronomy Orientation	ASI 1001: Success in Animal Science	VTS 2241: Career Strategies
# of SLOs assessed	2	21	30	N/A
# of SLOs met	2	20	30	N/A
% of SLOs met	100	95	100	N/A

Criterion Eight: Intercultural Knowledge and Competence.

1. *ABM 1201: Ag Business Foundations*
 - Students will demonstrate a set of cognitive, affective, and behavioral skills and characteristics that support effective and appropriate interaction in a variety of cultural contexts.
2. *AGR 1661: Agronomy Orientation*
 - Students will demonstrate a set of cognitive, affective, and behavioral skills and characteristics that support effective and appropriate interaction in a variety of cultural contexts.
3. *ASI 1001: Success in Animal Science*
 - Students will demonstrate a set of cognitive, affective, and behavioral skills and characteristics that support effective and appropriate interaction in a variety of cultural contexts.
4. *VTS 2241: Career Strategies*
 - Students will demonstrate a set of cognitive, affective, and behavioral skills and characteristics that support effective and appropriate interaction in a variety of cultural contexts.

Direct Assessment Results from Previous Semester Taught

	ABM 1201: Ag Business Foundations	AGR 1661: Agronomy Orientation	ASI 1001: Success in Animal Science	VTS 2241: Career Strategies
# of Outcomes assessed	2	21	30	N/A
# of Outcomes met	2	21	30	N/A
% of Outcomes met	100	100	100	N/A

Part III – Analysis & Recommendations

Analysis

- Based on direct assessment results, most students appear to be obtaining most Gen Ed course-learning outcomes as they relate to program-level outcomes.
- Continual evaluation of course learning outcomes as they relate to programmatic mission and goals remains an important area of emphasis
- Continual evaluation and improvement of methods and metrics of measurement remain important areas of emphasis.

2019-2020 Recommendation Results

- Followed through with faculty plans to improve student learning as listed in faculty SLO reports.
- 100 percent reporting results have not yet been obtained for Information Literacy and Intercultural Knowledge & Competence
- Informed faculty outside Gen Ed division about AAC&U Value Rubrics available to help assess Gen Ed program level outcomes
- Continued to evaluate Gen Ed mission, curriculum, courses outcomes and assessment measures
 - E.g., Gen Ed curriculum was revised to include VTS 1604: Introduction to Laboratory Science as a course where students develop and attain Problem Solving skills

2020-2021 Recommendations

- Per the recommendations of the Assessment Committee: Evaluate the performance of students of who take developmental English course regarding their ability to succeed in required English courses
- Per the recommendations of Academic Program Review Committee:
 - Align course outcomes in transferable Gen Ed courses with course outcomes in the Nebraska Transfer Initiative
 - Review the feedback loop on general education outcomes, explore whether general education outcomes can be aligned with other program level outcomes, and ensure that assessment is based on concepts, not grades.
 - Explore the availability of professional development time related to Gen Ed assessment with all faculty on campus.
- Work toward achieving 100 percent reporting results for all Gen Ed outcomes
- Continue to inform faculty outside Gen Ed division about AAC&U Value Rubrics available to help assess Gen Ed program level outcomes
- Begin assessing the following SLOs in co-curricular activities:
 - *Phi Theta Kappa Honor Society*: Develop and implement opportunities for leadership and service
 - *Student Senate*: Participate in the regulation and coordination of various phases of student self-government, including maintenance of relationships between students and administration, faculty, staff, and the public.