Department of Applied Arts and Sciences
2022 Assessment Report

*A Note About this Report

In the two years since our last Assessment Report, the Department of Applied Arts and Sciences has gone through a substantial change in faculty. Four of our six tenured/tenure-track faculty have retired or moved to positions outside of the department and we have seen a great deal of turnover in our long-term adjunct faculty. We are in the process of rebuilding our core faculty and now have one tenured faculty member and three tenure-track faculty members. This shift in faculty happened amid the rapid changes and destabilization brought on by the COVID-19 pandemic. While we are proud of the work we have done in response to these challenges, this report will reflect a department in transition. In some instances, data is missing due to these changes. In addition, we did not receive feedback on our 2020 Assessment Report to help guide our current assessment. If further information is needed, please let us know. We appreciate any feedback as we build a robust department to meet the needs of our students.

MISSION STATEMENT

The mission of the Department of Applied Arts and Sciences (AASc) is to be a center of academic excellence for Missoula College students seeking academic, professional, or technical careers. AASc provides instruction in mathematics, writing studies, literature, psychology, science, historical and cultural studies, and communication, and the department provides developmental instruction in mathematics and writing. The Department strives to guide students as they gain knowledge, values, and skills required in academic, professional, and civic communities. Beyond academic and professional goals, the department encourages students to become responsible members of a global and multicultural society.

DEPARTMENT ALIGNMENT WITH PRIORITIES FOR ACTION

After listing each departmental objective, indicate which of the five Priorities for Action the objective supports. In this section, you may also briefly describe any innovative or noteworthy programs/initiatives that support the Priorities for Action.

1. Provide students with a breadth of academic knowledge through a diverse offering of general education courses.
   Priority 1: Place Student Success at the Center of All We Do

   As a majority of the classes offered by AASc fulfill UM general education requirements, the department regularly engages in course assessment through the General Education Committee's rolling review of general education curriculum. Our general education curriculum is diverse and robust. We not only offer core general education coursework in areas such as psychology, communication, science, writing and mathematics, but also unique general education offerings that further support the university's goals for breadth of academic knowledge and

multiple perspectives (Addictions and Diversity, Introduction to Visual Rhetoric, Montana Ecosystems, Communicating Biology, as examples).

AASc is flexible in both our offerings and scheduling to serve not only AA and AS students, but also the numerous career and technical programs at Missoula College. AASc faculty work directly with Program Directors to ensure that all Missoula College students have access to general education coursework that support essential 21st professional skills. In addition, we have developed a scope and sequence that make it possible for students to obtain their AA and AS degrees entirely online.

2. Foster a diverse and inclusive campus by providing students with the opportunities and skills to understand and communicate the complexity of ideas and the diversity of cultural perspectives, and be able to communicate how this understanding can affect human decisions and lifestyle choices.
Priority 1: Place Student Success at the Center of All we Do, **Priority 3**: Embody the Principle of "Mission First, People Always."

   Our writing and mathematics disciplines have been instrumental in the development of co-requisite courses that support developmental instruction in these areas. Students take these co-requisite courses alongside the foundational writing and math courses. These models have expanded opportunities for students who have been otherwise underserved by educational institutions and are particularly at risk for attrition. In addition, the co-requisite model of instruction allows opportunities for greater cohort building and a sense of community to build support systems; students helping each other.

   AASc offers a number of classes that teach students to "communicate the complexity of ideas and the diversity of cultural perspectives" (e.g. Addictions and Diversity-CAS 140X, Intercultural Communication-COMX 212X, Interpersonal Communication-COMX 150S, Anthropology and the Human Experience-ANTY 101H, Introduction to Literature-LIT 110L, and The Veteran's Experience, HSTA 150H).

3. Enable students to successfully complete courses that satisfy MUS Core or UM general education requirements and/or general education requirements for specific academic programs and transfer.
Priority 1: Place Student Success at the Center of All We Do, **Priority 2:** Drive Excellence and Innovation in Teaching, Learning, and Research,
Priority 4: Partnering with Place, **Priority 5**: Proudly Tell the UM Story

   AASc has focused areas of studies within the Associate of Arts (AA) degree. Students have the option of completing an AA degree with a concentration in Psychology, Communication Studies, or Professional Communication. In addition, students can now compliment their AA degree with a certificate in Chemical Addiction Counseling.

   AASc continues to grow an Associate of Science (AS) degree. The AS degree appeals to the growing population of those seeking college credits to move forward in careers in mathematics and science related fields such as computing, engineering, environmental and physical sciences, and health professions. In an effort to develop pathways within the AS degree, in the fall of 2020, AASc collaborated with Missoula College's Business Technology and Health Programs departments to add concentrations in Business and Public Health.

   AASc's Certificate of General Studies has been approved and has become an important focus for the department. The Certificate of General Studies recognizes completion of UM general education requirements that also fulfill the 30 required credits of the MUS Core to allow a student to transfer general education credits to any MUS academic unit. The purpose of the Certificate of General Studies is to

recognize students whose primary goal is to complete their "generals" at Missoula College. Many of these students move on without completing the 30 required credits of the MUS core needed for smooth transition to another Montana academic unit (BOR 301.10). In addition, as we do not currently have a credential for general education, we are unable to track successful completion for these students. This stackable credential would no doubt increase retention for this population at the college. In essence, students could use this certificate as a milestone toward receiving their Associate of Arts or Associate of Science degree at Missoula College. Alternatively, they could use the certificate to demonstrate completion of core general education courses to facilitate transfer within the Montana University System or accelerate their work in a baccalaureate program on the UM Mountain Campus.

AASc fully launched their online AA/AS degree programs in May of 2021. To prepare, the department has rounded out their online general education curriculum with a focus on student needs and diversity of offerings. In addition, the department collaborated with UM's Mansfield Center and its Defense Critical Language and Culture Program, which provides language and cultural training to active military members for the Department of Defense and for U.S. National Security objectives. The online AA/AS degrees serve students throughout Montana who, due to distance and/or work/family schedules would otherwise not be able to pursue higher education. This online programming is also very relevant given the surge in online education due to the pandemic.

4. Respond swiftly and flexibly to the changing needs of our students and our community via course offerings and modalities.
Priority 1: Place student success at the center of all we do, **Priority 2**: Drive excellence and innovation in teaching, learning, and research, **Priority 3**: Embody the principle of "Mission First, People Always," **Priority 4**: Partner with Place.

   In light of the COVID-19 pandemic, our ability to quickly adapt to students' needs has become a priority for the department. The work we had been doing to develop our online only degrees has enabled us to meet the needs of students through many challenges. In addition, it prepared us for adapting to new modalities as seamlessly as possible. Most notably, we were able to transition our Chemical Addiction Certificate into a fully online and almost fully asynchronous certificate that meets the needs of both our Missoula area community and communities across the state. This modification has come at a time when we are seeing an increase in addiction related issues across rural communities in need of Licensed Addition Counselors.

   As the past few years has created a great deal of disruption in K-12 classrooms, our corequisite Math and Writing courses have been able to support underprepared students without delaying their progress. Our ability to help students complete their required Math and Writing courses within their first year removes hurdles to their continued success.

   In addition, we have introduced an AASc internship opportunity with will enable us to grow our experiential learning opportunities.

STUDENT LEARNING OUTCOMES and MEASUREMENT TOOLS

The following focuses on a general AA/AS degree seeking student in the Department of Applied Arts and Sciences. Additional information on more specific pathways can be found in the curriculum maps, Appendix 1. The following does not encapsulate the support work that AASc does for Missoula College and the University of Montana as whole, including offering general education courses for all other departments at Missoula College and developmental/corequisite Mathematics and Writing courses for Mountain, River, and West Campuses.

Student Learning Outcomes	**Completion of**	**Completion of at least 1**	**Completion of at least 1**	**Completion of at least 1**	**Completion of at least 1**	**Completion of at least 1**	**Completion of at least 1**	**Completion of at least 1**	**Completion of at least 1**	**Completion of at least 6 credits including 1 lab credit**
	WRIT 101	BIOB210N ENST 231H LIT 110L LIT 120L WRIT 121	M 105 M115 M121 STAT216	COMX111A CRWR210A CRWR211A	COMX140L LIT 110L LIT 120L	ANTY101H ENST231H HSTA150H	COMX115S COMX219S PSYX100S	COMX140L HSTA150H	ANTY101H CAS 140X COMX212X	BIOB101N BIOB109N BIOB160N BIOB161N BIOB210N GEO101N GEO102N NUTR 221N PHSX 105N
1. Develop college writing skills, including: a. Engage in inquiry as a means of learning b. Understand the challenges of communicating effectively across differences c. Develop multiple, flexible strategies for writing d. Learn to give and receive feedback e. Understand reading as a recursive transaction f. Develop research skills and understand research technologies.	X									
2. Develop writing skills to a. Learn and synthesize new concepts b. Formulate and express written opinions and ideas, c. Compose written documents that are appropriate for a given audience, purpose, context, d. Revise written work based on instructor feedback. e. Develop information literacy.		X								

3. Attain mathematical literacy that includes, a. the ability to apply mathematical reasoning b. understand how mathematics are used in many arenas.			X							
4. Acquire foundational skills to a. Engage in the creative process b. Engage in the critical assessment of their own work and the work of others				X						
5. Develop the skills to a. Analyze works of art with respect to structure and significance within literary and artistic traditions b. Develop coherent arguments that critique these works from a variety of approaches.					X					
6. Develop the skills to a. Critically analyze and evaluate primary sources such as texts, pictorial evidence, oral histories, music, and artifacts within their respective historical contexts b. Synthesize ideas and information in order to understand the problems, causes, and consequences of historical developments and events						X				
7. Develop the skills to a. Describe the nature, structure, and historical development of human behavior, organizations, social phenomena, and/or relationships b. Use theory in explaining these individual, group, or social phenomena							X			

c. Understand, assess, and evaluate how conclusions and generalizations are justified based on data										
8. Develop the skills to a. Demonstrate informed and reasoned understanding of democratic ideas, institutions and practices, from historical and/or contemporary perspectives; b. Analyze and evaluate the significance and complexities of engaged citizenship; and c. Articulate the causes and consequences of key historical and/or contemporary struggles within democratic systems or their antecedents, including but not limited to those pertaining to issues of diversity, equity, and justice.								X		
9. Develop the skills to a. Demonstrate an understanding of the diverse ways humans structure their social, political, and cultural lives; b.Interpret human activities, ideas, and institutions with reference to diverse cultural, historical and geo-political perspectives and physical environments; and c.Recognize the complexities of inter-cultural and international communications and collaborative endeavors, and relate this to the complex challenges of the 21st century.									X	
10. Develop the skills to										X

a. Understand the general principles associated with the discipline(s) studied; b. Understand the methodology and activities scientists use to gather, validate and interpret data related to natural processes; c. Detect patterns, draw conclusions, develop conjectures and hypotheses, and test them by appropriate means and experiments; d. Understand how scientific laws and theories are verified by quantitative measurement, scientific observation, and logical/critical reasoning; e. Understand the means by which analytic uncertainty is quantified and expressed in the natural sciences										

RESULTS and MODIFICATIONS

We have included a representative selection of Outcome and Results. Due to changes in faculty, some areas are awaiting assessment results.

Student Learning Outcomes results	Modifications made to enhance learning
Learning Outcome 1 **WRIT 101 and WRIT 101 Plus** Currently we are developing measures to best evaluate student success in our WRIT 101 offerings. However, we have been tracking our completion rates in WRIT 101 Plus. Since starting our corequisite writing course in place of our developmental writing course, we have gone from an average of 47.4% completion rate (59.2% of Mountain Campus students and 35.6% for Missoula College students – our developmental and corequisite course in writing serve all UM students) to 71.6% (78.4% of Mountain Campus students and 70.2% of Missoula College students).	**WRIT 101 Plus** While we are seeing more student success in our co-requisite writing courses, there are ample opportunities to improve and reach more students. Most notably we are piloting an EdReady support to help students develop foundational skills in grammar and mechanics. We are also working with the library to provide more targeted and frequent support both in the classroom and outside the classroom. In addition, we are developing an online section of the course to meet the needs of our online only students and students who may need an online section for scheduling purposes.
Learning Outcome 2 **LIT 110L**	**LIT 110L**

Student Learning Outcomes results	Modifications made to enhance learning
The best measure of students attaining the learning outcomes is reflected through progression of the revision of the first formal paper, the second formal paper and the final research paper. In each formal writing assignment, students should show a clear understanding of the text and how it is constructed using literary terms and traditions. In addition, they need to develop an analytic argument that is amply supported with textual evidence. In the final paper, the argument needs to be supported by additional research and an appropriate literary perspective. Over the course of the semester, students should show an increased mastery of these skills. Mastery can be seen in required revisions and through more nuanced arguments in the later papers. Ideally, all students would develop their analytic and writing skills over the duration of the semester. In addition, their performance should include an understanding of the writing process and MLA formatting. However, my goal is to see increased mastery in at least 80% of my students. Over the course of the past year and three sections of LIT 110, 75% of students showed and increased understanding of literary terms, traditions, and discipline specific arguments. The development can be seen in the formation of stronger and more nuanced thesis statements and appropriate use of textual evidence. In addition, these students demonstrated a deeper understanding of literary terms and perspectives and were better able to apply them to their analysis.	In order to better reach all students, I am developing a few short, informal assignments that provide further opportunities to engage literary traditions and perspectives. In these low risk assignments, students will be able to explore literary conversations. I am currently working on implementing the assignments. The COVID-19 changes have created additional challenges to implementing the assignments, however, I expect to see increased engagement this semester and into Spring 21.
Learning Outcome 3 **M105** 1. Read mathematical material at an appropriate level, reason mathematically, and write using mathematical notation correctly. *Students were asked to analyze various growth/decay models, determine the appropriate corresponding function, linear vs exponential, and then state the growth or decay rates, perform additional computations, and make predictions.* *The average was 7.4/10 and 77% of students achieved the desired level of performance.* 2. Formulate a problem precisely, and interpret solutions. *Students were given a project to purchase something of value to them which would require a significant loan (car, home, musical instrument…). They were required to research various buying options, explore various loan options, and then evaluate the cost/benefit of monthly payments and the total amount paid over the life of the loan depending upon monthly budgets and down payments.* *The average was 8.3/10 and 88% of students achieved the desired level of performance.* 3. Apply elementary probability theory to construct models of random phenomena, including the use of simulations.	**M105** There are quite a few challenges in teaching this course. One is that the student population who take this class tends not to have very much mathematical background; and while we only require a bare minimum, that can still be an issue for some. Moreover, while many of the 105 students have very little mathematical background, a significant number of the students in the class are actually quite proficient at the math. Being able to teach a class on such a wide spectrum is a true challenge. As Instructors, we want to be able to effectively teach to the folks on one end, yet at the same time, challenge those at the other end. Third, many of the students who take this course have had less than desirable experiences in their past math classes. Hence, changing the attitudes of these students so that they are willing to open their minds and actually be open to learn and enjoy the material can be quite the hurdle. This course is taught in small class sizes in a very interactive format that includes some direct instruction, but is then followed by a lot of active and collaborative learning during class, followed by individual practice at home. Due to the nature of this course, there are many opportunities for students to apply their problem solving skills in very real world applications which often lead to some fantastic discussions amongst the students. The students seemed to be quite successful this semester. As always the students tend to do better on problems that are more 'cookbook' and have more

Student Learning Outcomes results	Modifications made to enhance learning
In groups during class, students were asked to compare the results of a coin toss simulation to the theoretical probabilities. *This was a non-graded class activity and went toward class participation.* 4. Use elementary statistical tools such as measures of center and spread, graphical representations of data, and statistical estimation of population proportions. *Students were given several data sets in both numerical form as well as graphical and asked to determine the appropriate measure of central tendency (mean vs median) as well as the corresponding measure of spread (standard deviation vs IQRs).* *The average was 9.2/10 and 89% of students achieved the desired level of performance.* 5. Use tools from one or more areas of mathematics to solve theoretical or applied problems. The areas could include, but are not limited to, finance, management science (e.g., graph models for network problems), social choice and decision making (e.g., elections, voting, fair division, Congress apportionment), geometry (e.g., symmetry, tilings), or mathematical games. *Students were presented with a question about credit cards and were asked to construct an amortization table, determine the finance charges, new balances and how long it would take to pay off their balance using the minimum payment formulas.* *The average was 9.3/10 and 89% of students achieved the desired level of performance.* **M115** 1. Find, understand and use linear equations to solve application problems. To address this goal the students were instructed to use a given linear equation to predict the value of one variable given the other, as well as verbally interpret the slope and vertical intercept in the context of the question. The average score was 8.4/10 and 82% of students achieved the desired level of performance. 2. Set up and solve systems of linear equations, and apply them appropriately. To address this goal the students were given a word problem that required them to set up and solve a system of equations. The average score was 7.8 and 74% of the students achieved the desired level of performance. 3. Set up and solve linear programming problems (graphical method only). To address this goal the students were given several problems. The first was a word problem where the students had to define the appropriate variables, give the objective function as well as the constraints. The average score was 7.4/10 and 69% of students achieved the desired level of performance. In another question, the students were presented with a graph of the feasible region. From there they needed to identify corner points and	difficulty on those that require translation, interpretation and multiple steps; or are conceptual in nature. The students tend to enjoy the finance portion of the course the most due to the relevance to their lives. This was the first semester that Missoula College used OER materials along with a free online math site MyOpenMath for the course, and the plan is to continue this mode moving forward. Additionally, Missoula College offers several sections of this course, for those students who regularly place into the class as well as for those who do not, hence meet an additional day each week for the support in any pre-req material (co-requisite model). This semester for the first time, we had a cohorted section of M105 that was geared (!!) primarily for trades students at Missoula College, but all were welcome to register. This group met during 8 weeks of the term for 2 hours/class and was a co-mingled class of both co-req students and not. In this section, on top of the M105 material, we placed a special emphasis on math for trades including geometry, trigonometry, conversions and measurements. **M 115** The course begins with supposed new topics (probability, statistics) in order to capitalize on students' greater focus and ability to retain the material, and this seems to work well with the students' success. In the past, I found that starting with a topic that was already familiar to the students (linear functions) did not lend itself to the study habits needed for success in this course moving forward. Specifically, many students felt like they already knew the material, hence did not start with sufficient study habits needed for success with the later material (probability and stats). However, as with the previous terms, a fair proportion of students in this class did not have a sufficient prior knowledge of linear equations even though it is a topic that students should have encountered multiple times in high school as well as in any prerequisite course taken prior to M115. Having said that, as with anyone who teaches these intro courses knows, our incoming students are simply not as prepared as they were, even a decade ago. In order to address this, we are now offering several sections of the course for co-requisite students. In order to keep the ordering of the material consistent

Student Learning Outcomes results	Modifications made to enhance learning
maximize/minimize the objective function. The average score was 8.6/10 and 84% of students achieved the desired level of performance. 4. Use linear regression and understand its uses as well as its limitations. To address this goal, we asked the students to take an equation of a least squares line in a stated real world phenomena and interpret the slope and intercepts in the context of the question, and then use the line to make predictions and determine the reasonableness of their answers. The average was 7.7/10 and 76% of students achieved the desired level of performance. 5. Use basic probability: sample spaces with equally likely outcomes, counting, conditional probability, Bayes' theorem, binomial probabilities, probability distributions, tree diagrams, Venn diagrams, two-way tables. To address this goal we asked several questions. The first question involved a tree diagram where the students were given a word problem along with an associated tree and answer several probability questions, including Bayes' Theorem. The average was 7.2/10 and 73% of students achieved the desired level of performance. Second, the students were asked to complete a probability distribution table and find the associated expected 'winnings' of a specified game and the average was 8.3/10 and 78% of students achieved the desired level of performance. Two other problems include: a venn diagram and a two-way table, in which the students had to answer a series of conditional probabilities questions. The averages were 7.8/10 and 9.4/10, respectively and 81% and 92% of students achieved the desired level of performance, respectively. 6. Use probability distributions: the binomial and normal distributions, and the normal approximation to the binomial distribution. To address this goal the students were given several questions The first presented various experiments and students needed to determine whether each satisfied the criteria for a binomial experiment. The average was 6.4/10 and 71% of students achieved the desired level of performance. There were several questions about normal distributions including constructing appropriate normal curves, identifying characteristics of said distributions, as well as make estimations using the empirical rule. The average was 7.3/10 and 76% of students achieved the desired level of performance. 7. Use descriptive statistics: graphical displays, measures of center and spread. To address this goal the students were given the mean, standard deviation and data values for normally distributed data. They were asked to compare and interpret the data using z-scores, and then discuss the results. The average was 8.8/10 and 78% of students achieved the desired level of performance.	for all sections of the course, this serves as another reason to keep the linear material for the end of the term. That gives the students enough time to fill in any gaps in their knowledge (using EdReady) and get up to speed with this material, as that is where not having the prerequisites affects them the most in 115. In general, students performed as expected on the majority of the topics, especially given that this assessment is based upon a final exam. As has been the case in the past, word problems relating to linear programming seem to be the biggest hurdle for these students. Therefore, while no major changes regarding coverage are suggested at this point since the content flows beautifully, in the future I would suggest taking more time to review linear equations and basic topics in algebra prior to the linear portion of this course. This Fall semester at Missoula College we started to use OER materials and the free online homework site MyOpenMath which certainly makes the course more accessible to students. We plan to continue using them moving forward, while making alterations as needed.

Student Learning Outcomes results	Modifications made to enhance learning
8. Solve word problems involving the above concepts (this includes being able to precisely formulate a problem, and to interpret solutions). To address this goal students were given several problems as word problems are the primary theme of the course. In particular, students were given a word problem where they had to determine the cost function, revenue function, profit function and break-even quantities. The average was 8.2/10 and 80% of students achieved the desired level of performance. **M121** 1. Demonstrate conceptual understanding of functions and solve problems using four different points of view: geometric (graphs), numeric (tables), symbolic (formulas, and written (verbal descriptions and interpretations). This learning outcome is general enough that portions of it are incorporated in every question on the final, aside from 15. See results below. 2. Be flexible and have the ability to choose between these points of view when solving problems such as evaluating functions; solving equations; identifying where a function is increasing, decreasing, positive, or negative; finding domain and range, intercepts, slope, vertex, concavity, symmetries, end-behavior, and asymptotes. This learning outcome is general enough that portions of it are incorporated in every question on the final, aside from 15. See results below. 3. Create graphs when given a formula; write a formula when given a graph. Please see the results to questions 1, 3, 11, 12, and 13 below. 4. Build new functions from existing ones: using transformations, composition, and the algebra of functions. Identify when a function has an inverse, identify domain and range, and compute a formula for the inverse, when possible. Please see the results to question 1, 2, and 14 below. 5. Describe real world situations using linear, quadratic, piecewise, polynomial, power, rational, exponential and logarithmic functions, and interpret functions and their parameters in real word contexts. Please see the results to questions 2, 4, 5, 7, 9, and 14 below. The following displays data from the final for students who passed the course with a grade of C- or better.	**M121** There are multiple challenges regarding this course including lack of pre-requisites, lack of consistent and proper study habits, lack of motivation to learn mathematics, and lack of access to resources. This course, while covering material one supposedly learned in high school, moves at a fast pace and requires very consistent effort and work from the student. Because this course is very foundational and understanding of new concepts rely heavily upon a secure understanding of the previous ones covered, many students run into problems if they take even a brief step away from the course. Additionally, because many have seen this material before, they assume that they can do the math without putting in the needed practice. The fact that one learns math by *doing* rather than by passively learning it can be quite a transition from how they study material in other courses. This Fall at Missoula College we redesigned the course, using an OER textbook and a free online homework site, MyOpenMath, which increases accessibility. This course is taught in a very interactive format that includes direct instruction, followed by opportunities for in class practice, followed by individual practice at home. Both of the face to face sections offered this Fall term were co-requisite sections (which meet an additional two times a week) in order to support students who lack prerequisites, while the online section was a traditional college algebra class. From the pedagogical point of view, we are making an effort towards a student-centered pedagogy with an emphasis on formative assessments as opposed to only summative. Because the desired goal is for the students to *really* understand this material due to the fact that it is essential for any subsequent math classes, we are also providing opportunities for students to re-work some of their summative assessments once feedback has been provided. Overall, the assessment indicates that most students who complete College Algebra with a grade of C- or better are able to apply effectively mathematical reasoning to a variety of applied and theoretical problems.

Question Number	Average/10	% Reaching Desired level of Performance
1	6.6	68%
2	8.3	82%
3	5.9	62%
4	8.2	83%
5	7.7	71%
6	7.3	81%
7	8	85%

Student Learning Outcomes results	Modifications made to enhance learning
8 | 9.1 | 87% 9 | 7.7 | 72% 10 | 8.2 | 72% 11 | 7.2 | 77% 12 | 7.5 | 84% 13 | 7 | 71% 14 | 6.8 | 63%	
Learning Outcome 4 COMX 111A Learning Goal 1: I expected at least 75% of my students to achieve 75% or higher on their informative speeches and 63% did of the 21 students enrolled in the course. However, of the students who turned speeches in, 100% got 75% or higher on the speech. For future percentages I will just be using the 14 active students in the course and not counting the 7 students who did not participate in the course. Learning Goal 2: I expected at least 75% of my students to use an organizational strategy in their informative speeches, as well as have their own unique nonverbal delivery style that reflected a steady rate, volume, vocal variety, and eye contact. Of the 14 students who submitted their formal outlines, 11(78%) used a clear organizational strategy and 14 (100%) had their own unique nonverbal style of presenting. 8 out of 14 students did well with their rate, volume, vocal variety, and eye contact. These 8 students scored above average of above in this section of the rubric. the other 4 students scored in the average to below average sections. Students also engaged with an interactive Ebook for their textbook and completed activities in the Ebook that included multiple choice questions, inventories, reflections, and watching example speeches then answering a series of questions related to the speech. Learning Goal 3: I expected at least 75% of the students to submit at least three peer evaluations for the informative speech and their own self-evaluation. 11 out of 14 (78%) active students in the course did submit peer evaluations and 12 out of 14 (85%) active students submitted self-evaluations.	COMX 111A Learning Goal 1: The goal is to is to have students complete the course and the data from this class shows that students dropped the course or did not follow through. The changes to be implemented focus on working with each student to identify those who are vulnerable to dropping the course and ensure the stick with the course and complete it. Learning Goal 2: Choosing an organizational strategy and then organizing a speech with it can be challenging for students. I have added and will continue to add activities and check points prior to students turning speeches in to get the chance to practice. For examples, one activity I have added is a discussion board asking each student to share their chosen organizational strategy and why they chose it, as well as the challenges they face in organizing their speech with that strategy. This gives them a chance to share where they are and see that their classmates are wrestling with similar challenges. It also allows for a check-in ti ensure that each student is using an organizational pattern. The course could be improved in how it encourages students to develop their own delivery style. One of the challenges of an online public speaking course is that the class does not meet face to face, which means impromptu speech activities can not happen. Developing alternative learning exercises that encourage students to hone their delivery style are needed as the course continues to be refined. Learning Goal 3: Overall, students seem to do well with peer and self-evaluations. To enhance the quality of evaluations, I would like to add a peer evaluation workshop on Zoom where students schedule time to meet and give and receive verbal feedback. I hope to implement this in Spring of 2023.
Learning Outcome 5 LIT 120L In each formal writing assignment, students should show a clear understanding of the text and how it is constructed using literary terms and traditions. In addition, they need to develop an analytic argument that is amply supported with textual evidence. In the final paper, the argument needs to be supported by additional research and an appropriate literary perspective. Over the course of the semester, students should show an increased mastery of these skills. Mastery can be seen in required revisions and through more nuanced arguments in the later papers. Ideally, all	LIT 120L To better reach all students in the course, I would like to develop further small group opportunities inside and outside the classroom to better engage literary traditions and perspectives.

Student Learning Outcomes results	Modifications made to enhance learning
students would develop their analytic and writing skills. However, my goal is to see increased mastery in at least 80% of my students. Assessment Findings Over the course of the past two years and three sections of LIT 120, 80% of students showed and increased understanding of literary terms, traditions, and discipline specific arguments. The development can be seen in the formation of stronger and more nuanced thesis statements and appropriate use of textual evidence. In addition, these students demonstrated a deeper understanding of literary terms and perspectives and were better able to apply them to their analysis	
Learning Outcome 6 Currently awaiting results	
Learning Outcome 7 COMX 115S I expected at least 75% of my students to achieve scores of 75% or higher on the assessments. 90% of students scored higher than 75% on the Journal 2 assignment, displaying their grasp of the attachment style material and ability to respond fully to the prompt. 85% of students scored higher than 75% on the Journal 5 assignment, displaying their grasp of the listening material, ability to pay special attention to their own listening styles, and respond fully to the prompt in their own journals. 90% scored 80% or higher on the assignment displaying their ability to synthesize the material covered throughout the semester into a description and analysis of one of their relationships. Students are asked to incorporate references to at least two peer reviewed journal articles that are relevant to their chose communication concepts, in addition to their references to the textbook. To achieve a score of 80% or higher, they must have these two journal articles in their paper, displaying the ability to conduct college level research. COMX 219S Achievement Targets I expected at least 75% of my students to achieve a 75% or higher in the learning outcomes for this course. Assessment Findings For learning outcome 1, in my Fall 21 class, 10/14 achieved 75% or higher on the assignment described above. For learning outcome 2, in my Fall 21 class, 12/14 achieved 75% or higher on the assignment described above. For learning outcome 2, I noticed that performance was stronger in summarizing conclusions, but weaker in summarizing methods. This is no doubt due to scientific methods and quantitative research being an upper-level skill.	COMX 115S I would consider modifying the way I assign journals to spread out the assignments and engagement. This could look like splitting up the journals so that students are turning in one every two weeks instead of two every four weeks. The hope would be that students are engaging with the material for their journals as we are going through the chapters, instead of revisiting material we had covered weeks prior. Although, that can be helpful for their own review of the chapters for the exams. COMX 219S The last time I offered this course, in an online format, I broke larger assignments (i.e. the final research paper) into weekly research projects and reflective assignments (such as those described above). I was really pleased with the more ongoing engagement that was prompted with the course material. I would like to develop more innovative forums for sharing research, such as gallery walks through Google Docs for next fall.
Learning Outcome 8 Currently awaiting results	
Learning Outcome 9 Currently awaiting results	

Student Learning Outcomes results	Modifications made to enhance learning
Learning Outcome 10 BIOB 101N The desirable level of success is always 100%. Expected performance on objective questions is from 75-90% successful. Performance on written work is expected to show 75-90% success in quantifiable results and reflect college-level writing and thinking skills. Given the high rate of attrition of freshman at Missoula College, the data reported are from students who complete the class, not enroll. Typically, 10% of enrolled students fail to meet learning objectives simply from failure to complete the course. Success rate for assessment examples in group VI A: Example 1: 70% Example 2: 76% Example 3: 100% Example 4: 100% Example 5: 94% Example 6: roughly 80% across separate lab sections, with 20-25% meaningful misunderstanding of at least one feature Example 7: 72% Example 8: 100% Example 9: 52% Example 10: 65% (roughly 20% of which related to incomplete work), with most failure to meet targets related to quantitative uncertainty Example 11: 70%, with most failure to meet targets related to quantitative uncertainty BIOB 109N The desirable level of success is 100%; all students are assumed capable from day one. However, expected performance on objective questions is from 75-85% successful. Performance on written work is expected to show 70-80% success in measurable results and reflect genuine understanding of core learning goals. Given the high rate of attrition of freshman at Missoula College, the data reported are from students who complete the class, not enroll. Typically, 10% of enrolled students fail to meet learning objectives simply from failure to complete the course. Success rate for assessment examples in group VI A: Example 1: 82% Example 2: 71% Example 3: full credit 55%, partial credit 25%, no credit 20% Example 4 (prompt-driven field lab): For learning goal 2: Understand the methodology and activities scientists use to gather, validate and interpret data related to natural process. Success rate 88%	BIOB 101N The assessment data reflect that the course, as taught, generally meets or exceeds expected student learning targets in content areas and fails to meet expected learning targets in some areas related to the process and interpretation of science. Of particular note is the lower-than-expected accomplishment rate in questions and reflections related to experimental design and quantitative uncertainty. This mirrors a broader cultural pattern in which Americans, in general, display scientific literacy that is higher in areas of content and lower in areas of process (as seen in Pew Research Center analyses, for example). The clear opportunity for growth in this course lies with mild-moderate restructuring of activities, assignments, and assessment to better guide students toward deeper understanding of the mechanisms of scientific investigation and interpretation of findings. I propose to begin addressing this through reframed repetition and application of existing activities aligned with these goals and the addition of new experiences such as peer-group analysis of findings (to focus on uncertainty and interpretation) and the addition of a feedback & rewrite component in the written research paper. I expect to implement these initial changes within two semesters, followed by reflection that will likely inspire more changes. BIOB 109N Student success in areas of core content and the mechanisms scientific investigation generally met expectations. Student success in some areas of interpreting scientific data and assessing validity failed to meet expected or desired levels, particularly for learning goals 4 & 5. I propose two interpretations and associated solutions to address these concerns. Firstly, part of the missed target relates to the high number of students who did not complete the independent investigation and written report. From limited anecdotal evidence, I suggest that this relates strongly to a grading scheme in which less-interested students in this 100-level course determine that they can earn a satisfactory grade by focusing on their exams and structured lab activities without completing the project. Others may be intimidated by the project and decline to participate from fear of failure or unwillingness to complete the work. I propose structuring the project with more incremental components to increase investment, comfort, and feedback in the activity. Increasing participation in the independent project is essential as it forms a key component of meeting the Gen Ed learning goals in this course.

Student Learning Outcomes results	Modifications made to enhance learning
For learning goal 3: Detect patterns, draw conclusions, develop conjectures and hypotheses, and test them by appropriate means and experiments. Success rate 86% For learning goal 4: Understand how scientific laws and theories are verified by quantitative measurement, scientific observation, and logical/critical reasoning. Success rate 81% For learning goal 5: Understand the means by which analytic uncertainty is quantified and expressed in the natural sciences. Success in this learning goal was not adequately measured by assessment example 4; see example 5. Example 5 (independent investigation and written report): For learning goal 2: Understand the methodology and activities scientists use to gather, validate and interpret data related to natural process. Success rate: 72% For learning goal 3: Detect patterns, draw conclusions, develop conjectures and hypotheses, and test them by appropriate means and experiments. Success rate: 77% For learning goal 4: Understand how scientific laws and theories are verified by quantitative measurement, scientific observation, and logical/critical reasoning. Success rate: 67% For learning goal 5: Understand the means by which analytic uncertainty is quantified and expressed in the natural sciences. Success rate: 49% Success rates for assessment example 5 (project and paper) were influenced by a large number of students who did not complete the assignment, but whose results are included because they did complete the course. Example 6: 82% Example 7: 100%	Secondly, the superior student success in areas of content instead of process and uncertainty reflects a cultural pattern in which scientific literacy is stronger in knowledge than procedure. This course can better suit students by acknowledging that their educational and cultural backgrounds have likely prepared them more to absorb scientific knowledge than to adequately address validity and uncertainty. I propose to address this limitation by devoting more classroom time to explicitly examining scientific processes and the evaluation of uncertainty, and by incorporating such analyses into the more iterative process of the revised independent project. I propose to make these initial changes within one year, monitor and evaluate their impact, and determine any needed next steps soon thereafter.

FUTURE PLANS FOR CONTINUED ASSESSMENT

As the Department of Applied Arts and Sciences focuses on ensuring students obtain their general education requirements through a stand-alone A.A. or A.S. degree, through supporting Missoula College students in other departments as they obtain their general education courses, and through preparing students to transfer into four year programs, we have historically focused our assessment of individual courses and our larger scope and sequence of courses on the outcomes and measurement tools of the ASCRC's General Education and Writing Committees. While these goals are incredibly valuable for our department and students, the sole focus may prevent closer examination of our department's ability to meet the needs of our diverse student body. In order to address these needs, AASc is developing opportunities and measurement tools for future cohorts including work with pathways.

Currently, Missoula College is participating in the National Center for Inquiry and Improvement's Rural Guided Pathways Project. As a part of this project, AASc is developing three meta majors. The meta majors will form an organizing principle for clear transfer pathways and enable us to develop

student cohorts around those pathways. The primary goal for the college is to better support students in achieving a college certificate or degree. For AASc, this structure will enable us to better support our students' diverse goals and help us build clearer assessments. The pathways will help our transfer students enter their chosen major at the Mountain Campus or other MUS campuses with the appropriate 60 credits to fulfill their general education requirements and prepare for their major without excess credits. From an Assessment Report perspective, more uniform pathways will provide clear opportunities and structures to assess in what areas the department is successfully supporting students and in what areas we need to develop and modify to meet our students' needs. Potential opportunities for assessment through more clearly delineated pathways include

- a clear structure to track student progress along a specific track
- the development of mentoring "check-ins" throughout a student's time in the meta major
- the promotion of constructive internship and service opportunities in careers connected to the meta major

To support our pathways, we recognize the need for more quantitative data. As a department we have run into challenges obtaining data regarding our student's degree persistence. We are working on gathering information regarding:

- rates of student transfer with an A.A., A.S., General Education Certificate, or before degree completion
- student success in intermediate and advanced writing courses for students who complete the WRIT 101 corequisite course
- student success in subsequent Math courses for students who completed the M115 or M121 corequisite course

We are also developing surveys for different points in the pathways to provide more qualitative data. Both quantitative and qualitative data will help direct modifications to our courses and determine constructive supports for our students.

APPENDIX

1. Curriculum Map

Required Course Name and Number	Outcome 1	Outcome 2	Outcome 3	Outcome 4	Outcome 5	Outcome 6	Outcome 7	Outcome 8	Outcome 9	Outcome 10
ANTY 101H:Anthro and the Human Experience						I/D,A			I/D,A	
BIOB 101N: Discover Biology										I/D,A
BIOB 109N: Montana Ecosystems										I/D,A
BIOB 160N: Principles of Living Systems										I/D,A
BIOB 210N: Communicating Biology		I/D,A								I/D,A
CAS 140X: Addictions and Diversity									I/D,A	
COMX 111A: Intro to Public Speaking				I/D,A						
COMX 115S: Intro to Interpersonal Communication							I/D,A			
COMX 140L: Intro to Visual Rhetoric					I/D,A			I/D,A		
COMX 212X: Intro to Intercultural Communication									I/D,A	
COMX 219S: Survey of Children's Communication							I/D,A			
CRWR 210A: Intro to Fiction Workshop				I/D,A						
CRWR 211A: Intro to Poetry Workshop				I/D,A						
ENST 231H: Nature and Society		I/D,A				I/D,A				

GEO 101N: Intro to Physical Geology										I/D,A
HSTA 150H: The Veterans' Experience						I/D,A		I/D,A		
LIT 110L: Introduction to Literature		I/D,A			I/D,A					
LIT 120L: Poetry		I/D,A			I/D,A					
M 105: Contemporary Mathematics			I,A							
M 115: Probability and Linear Mathematics			I,A							
M 121: College Algebra			I,A							
NUTR 221N: Basic Human Nutrition										I/D,A
PHSX 105N: Fundamentals of Physical Science										I/D,A
PSYX 100S: Introduction to Psychology							I/D,A			
WRIT 101: College Writing I	I/A									
WRIT 121: Intro to Technical Writing		I/D,A								

Key

I=Introduced

D= Developed/reinforced, with opportunities to practice

M = Mastery

A = Assessment evidence collected (Evidence has been collection or is being collected)

*As students take multiple courses in each outcome, they also have the opportunity to develop and reinforce those skills in subsequent course so many outcomes are both I and D.

Learning Outcomes

1. Develop college writing skills, including,
    a. Engage in inquiry as a means of learning
    b. Understand the challenges of communicating effectively across differences
    c. Develop multiple, flexible strategies for writing
    d. Learn to give and receive feedback
    e. Understand reading as a recursive transaction
2. Develop writing skills to
    a. Learn and synthesize new concepts
    b. Formulate and express written opinions and ideas,
    c. Compose written documents that are appropriate for a given audience, purpose, context,
    d. Revise written work based on instructor feedback.
    e. Develop information literacy.
3. Attain mathematical literacy that includes
    a. the ability to apply mathematical reasoning
    b. understand how mathematics are used in many arenas.
4. Acquire foundational skills to
    a. Engage in the creative process
    b. Engage in the critical assessment of their own work and the work of others
5. Develop the skills to
    a. Analyze works of art with respect to structure and significance within literary and artistic traditions
    b. Develop coherent arguments that critique these works from a variety of approaches.
6. Develop the skills to
    a. Critically analyze and evaluate primary sources such as texts, pictorial evidence, oral histories, music, and artifacts within their respective historical contexts
    b. Synthesize ideas and information in order to understand the problems, causes, and consequences of historical developments and events

7. Develop the skills to
    a. Describe the nature, structure, and historical development of human behavior, organizations, social phenomena, and/or relationships
    b. Use theory in explaining these individual, group, or social phenomena
    c. Understand, assess, and evaluate how conclusions and generalizations are justified based on data
8. Develop the skills to
    a. Demonstrate informed and reasoned understanding of democratic ideas, institutions and practices, from historical and/or contemporary perspectives;
    b. Analyze and evaluate the significance and complexities of engaged citizenship; and
    c. Articulate the causes and consequences of key historical and/or contemporary struggles within democratic systems or their antecedents, including but not limited to those pertaining to issues of diversity, equity, and justice.
9. Develop the skills to
    a. Demonstrate an understanding of the diverse ways humans structure their social, political, and cultural lives;
    b. Interpret human activities, ideas, and institutions with reference to diverse cultural, historical and geo-political perspectives and physical environments; and
    c. Recognize the complexities of inter-cultural and international communications and collaborative endeavors, and relate this to the complex challenges of the 21st century.
10. Develop the skills to
    a. Understand the general principles associated with the discipline(s) studied;
    b. Understand the methodology and activities scientists use to gather, validate and interpret data related to natural processes;
    c. Detect patterns, draw conclusions, develop conjectures and hypotheses, and test them by appropriate means and experiments;
    d. Understand how scientific laws and theories are verified by quantitative measurement, scientific observation, and logical/critical reasoning;
    e. Understand the means by which analytic uncertainty is quantified and expressed in the natural sciences.