

BRYAN COLLEGE OF HEALTH SCIENCES

SCHOOL OF HEALTHCARE STUDIES

Humanities and Sciences

Assessment of Student Learning Annual Report

2024-2025

Section 1: Statements of Purpose/Mission/Philosophy	4
Bryan College of Health Sciences Mission	4
Bryan College of Health Sciences Goals	4
Philosophy Statements	4
General Education Assessment	6
Section 2: General Education Outcomes and Competencies	6
Updated Assessment Information:	6
Category of Study	6
General Education Outcome	6
Section 3-6: Measures, Gaps, Reasons for Gaps, and Programmatic Adjustments	6
Microbiology Unknowns Paper	7
Sonography, Physics, and Instrumentation Exam	7
Course Specific Rubrics	8
Course Specific Rubrics-Capstone Courses	8
Intercultural Development Inventory (IDI):	9
English Composition Final Assignments	10
Mathematics Assessment	11
Health Sciences Reasoning Test (HSRT)	12
Senior Exit Survey (Indirect Measure)	13
Section 7: Budgetary Changes	15
Section 8: Correlate Adjustments to Change in Outcomes	15
Section 9: Continued Assessment Refinement	15
Graphical Summary of Assessment Results	1
Biomedical Sciences Assessment	1
Updated Assessment Information:	1
Section 2: Biomedical Sciences Program Outcomes	1
Section 3-6: Measures, Gaps, Reasons for Gaps, and Programmatic Adjustments	2
Senior Exit Surveys	2
Biochemistry Final Exam	3
Molecular Biology Final Exam	4
	2

Genetics Current Issue in Genetics Paper:	5
Genetics Paper:	6
Research/Laboratory Reports	7
BIOS480 Research Project	8
HSRT Exam	9
Application to Graduate Programs	10
Employment Rate:	11
Graduation Rate and Retention Rate	12
Graphical Summary of Assessment Results	1
Section 7: Budgetary Changes	1
Section 8: Correlate Adjustments to Change in Outcomes	1
Section 9: Continued Assessment Refinement	1

Section 1: Statements of Purpose/Mission/Philosophy

Bryan College of Health Sciences Mission

The Mission of Bryan College of Health Sciences is to provide educational pathways in the health sciences grounded in academic excellence, clinical distinction and experiential learning through collaboration with Bryan Health and the health care community.

Bryan College of Health Sciences Goals

The goals of Bryan College of Health Sciences are to prepare graduates who:

- Qualify for diverse careers in healthcare, academic, or scientific environments
- Illustrate respect for their own and others' unique individualities
- Demonstrate professionalism in their field of study
- Practice life-long learning as a means of personal and professional growth
- Exhibit service-oriented citizenship within their communities

Philosophy Statements

Philosophy of General Education

The Philosophy of General Education of Bryan College of Health Sciences is built on the premise that education is more than a program of study. It is a life-long, interactive process that builds on previous experience and expands one's world view promoting a change in attitudes, beliefs, values and/or behaviors.

General Education establishes a broad foundation of knowledge that is essential to the development of an educated person. Multidimensional, holistic growth of the individual is promoted through an integrated study of the Natural Sciences, Social Sciences, Communication, Mathematics, Humanities/Fine Arts, Health/Physical Education/Recreation and Business/Management. A core of General Education knowledge is fundamental to any area of study within Bryan College of Health Sciences.

The educational process enables the graduate to think critically; communicate effectively both in written and oral forms; understand the forces of nature; participate as a contributing member of a culturally diverse, ever changing society; make ethical decisions; apply mathematical logic and reasoning skills; appreciate and recognize management as a response to economic and social factors; and value learning as a life-long process.

Philosophy of Biomedical Sciences Program

The faculty of Bryan College of Health Sciences, Biomedical Sciences Program, believes that:

The baccalaureate degree program in biomedical sciences exists to prepare graduates to pursue graduate study in a wide range of health-related fields which contribute directly and indirectly to the delivery of quality health care and services. Educational preparation for advanced study in a health-related field is built on an in-depth, integrated study of natural sciences and general education concepts. Knowledge and skills require a high level of critical thinking and are developed through didactic and field experiences related to the field of study.

Students and graduates are guided by legal and ethical standards and require communication and interpersonal skills which promote positive interaction with others in the educational and healthcare environment. They critically evaluate scientific theories, gain competence in both theoretical and experimental science, and recognize the contribution of science to society. Quality healthcare cannot exist without the academic framework and intellectual discipline inherent in the study of natural sciences.

Learning is a life-long, interactive process that builds on previous experience and ideally results in change in attitudes, beliefs, and/or behaviors. Learning occurs in a variety of environments, and involves the cognitive, affective, and psychomotor domains. The learner is responsible for actively seeking knowledge both independently and under the supervision and guidance of qualified faculty.

Faculty are responsible as role models, mentors, and teachers for providing a caring environment in which students are free to explore and develop personally, professionally and intellectually. The College provides educational opportunities within the multiple contexts of legal and ethical boundaries, political and economic forces, sociocultural influences, and spiritual and historical factors. This environment provides quality education, which develops critical thinking and contributes to meeting the emerging health care needs of society.

General Education Assessment

Section 2: General Education Outcomes and Competencies

Updated Assessment Information:

The following general education outcomes have been approved by the Humanities and Sciences Committee.

Category of Study	General Education Outcome
Natural Sciences	1. Apply the physical and biological sciences to human health concepts.
Social Sciences	2. Evaluate the societal factors (political, social, psychological, economic, religion, age, etc.) that influence individuals in diverse communities.
Communications	3. Deliver cohesive communication in a variety of formats in a professional setting.
Mathematics	4. Employ quantitative and logical reasoning to solve problems
Humanities	5. Analyze issues using a multi-faceted approach to holistically address problems. 6. Integrate ethical reasoning into personal and professional identities to treat others with dignity
Business and Management	7. Articulate business management standards of practice to be a contributing member of a professional organization.
Cultural Studies	8. Differentiate one's own experiences from the experiences of others to foster global sensitivity.

Section 3-6: Measures, Gaps, Reasons for Gaps, and Programmatic Adjustments

This segment of the report integrates sections 3-6 of the College's Framework for Annual Assessment Reports. It is organized by the learning outcome measurements. For each tool, the subcommittee has identified the corresponding curriculum outcome (**Section 3**), determining whether or not there are gaps between the tool's benchmark and student performance (**Section 4**). For any gaps, the subcommittee has identified probable reasons for the gaps (**Section 5**) and discussed programmatic and/or operational adjustments (**Section 6**) planned to narrow the gaps.

Microbiology Unknowns Paper

General Education Outcome #1: *Apply the physical and biological sciences to human health concepts.*

General Education Outcome #3: *Deliver cohesive communication in a variety of formats in a professional setting.*

Students who take BIOS205L (Microbiology Laboratory) are required to complete a bacterial unknowns paper in which they must use biochemical testing to determine the identity of an unknown bacterial species and then develop a written lab report describing their analysis and result. This assignment is graded using an established rubric, including rubric rows specifically used to assess the overall writing (composition) of the unknowns paper.

87 students completed the Microbiology Unknowns Paper for the 2024-2025 Academic Year. 67 out of 87 students scored 80% or higher on their Unknowns Paper (77%), while 75 out of 87 students scored competent on the rubric row associated with composition (86%).

Benchmark for General Education Outcome #1: 85% of students will score 80% or higher on their Unknowns Paper

Benchmark for General Education Outcome #3: 70% of students will score competent or higher on the rubric row associated with composition on their Microbiology Unknowns Paper. Competent is assessed as earning 80% or more of the available points.

Benchmark was **not met** for General Education Outcome #1, and **met** for General Education Outcome #3.

Probable Reason for Gap and Programmatic and/or Operational Adjustments to Narrow Gaps:

This benchmark was not met. Changes implemented to narrow the gap include:

- With a new feature in Canvas, we will be able to download all completed rubrics to assess what specific areas students are having the most difficulty
- Working closely with the Academic Support to encourage working with peer tutors, attending writing labs, and having other faculty read and critique rough drafts prior to submission.
- Providing practice assignments in weekly lab report sheets to get feedback prior to the unknown paper project.

Pathophysiology Final Exams

General Education Outcome #1: *Apply the physical and biological sciences to human health concepts.*

The final exam in Pathophysiology contains a subset of 20 questions designed to test broad concepts related to this course. All students taking Pathophysiology take a final exam that includes these questions. The percentage of questions answered correctly is then assessed for each student.

118 students completed the final exam in BIOS221, thus completing the 20 broad concept questions. 48 out of 118 students scored a 70% or higher on those questions (40.6%).

Benchmark: 75% of students will correctly answer 70% or more of the Pathophysiology questions.

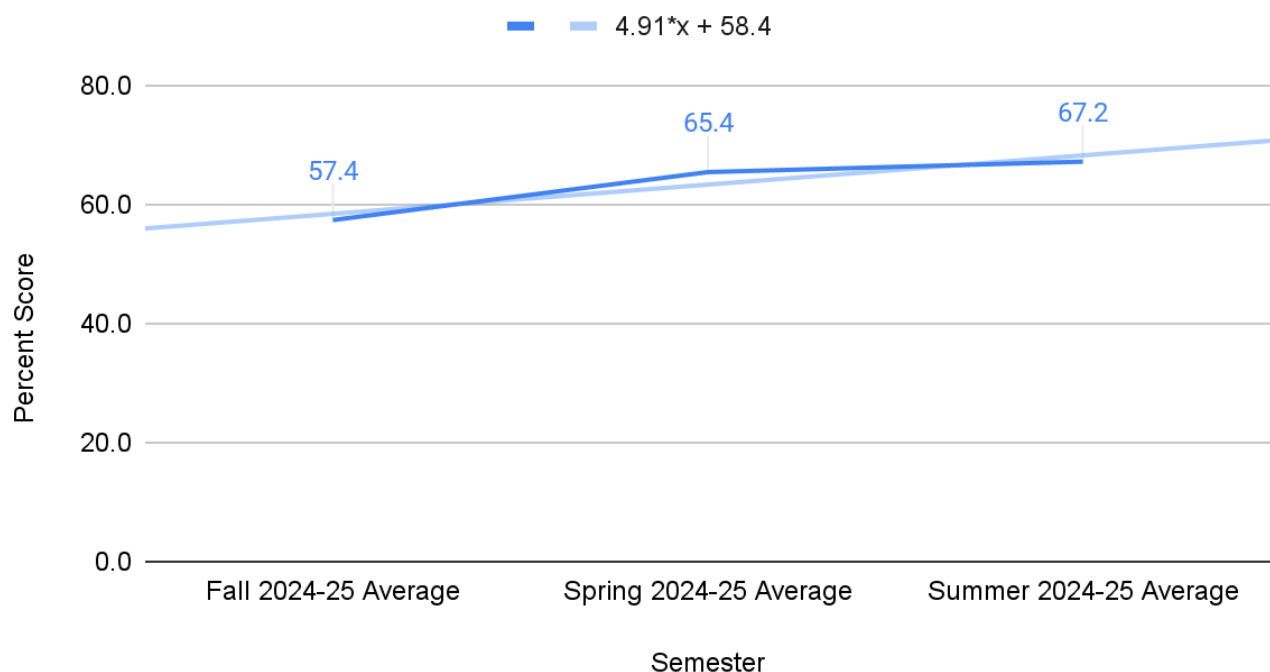
Benchmark **was not** met.

Probable Reason for Gap and Programmatic and/or Operational Adjustments to Narrow Gaps:

This benchmark was not met. Changes implemented to narrow the gap include:

- Lower benchmark: We will lower the benchmark to 60% of students will correctly answer 65% or more of the Pathophysiology questions. You can see the graph below as it shows the average score of students from each semester. This was used to determine the new benchmark.
- Changing format of class: This class was a hybrid class. For the 2025-2026 school, at the Lincoln campus we have moved to a fully in-person format.
- Hastings students will be doing a twice a week review session with staff

Average Scores by Semester in 2024-2025



ACS Standardized Exams

General Education Outcome #1: *Apply the physical and biological sciences to human health concepts.*

The ACS Standardized Exam for General Chemistry I and General Chemistry II was used as a pre- and post-test.

The required cohort size of 20 students has not been met, but the results of the first year are as follows. 8 students took the ACS Standardized Exam in General Chemistry I and 6 increased the raw score by 4 points or more (75%). 4 out of 8 students scored at or above the national average score (50%). In General Chemistry II, 9 students took the exam and 4 students increased their raw score by 4 points or more (44%). 3 out of 9 students scored at or above the national average during the spring semester (33%). For the year, 10 out of 17 (59%) students increased their raw score by 4 or more points and 7 out of 17 (41%) students scored at or above the national average.

Benchmark: 50% of the students will increase their raw score by 4 on the ACS First and Second Semester Exam retest at the end of each semester.

40% of the students will score at or above the national average score on the ACS First and Second Semester Exam retest at the end of each semester.

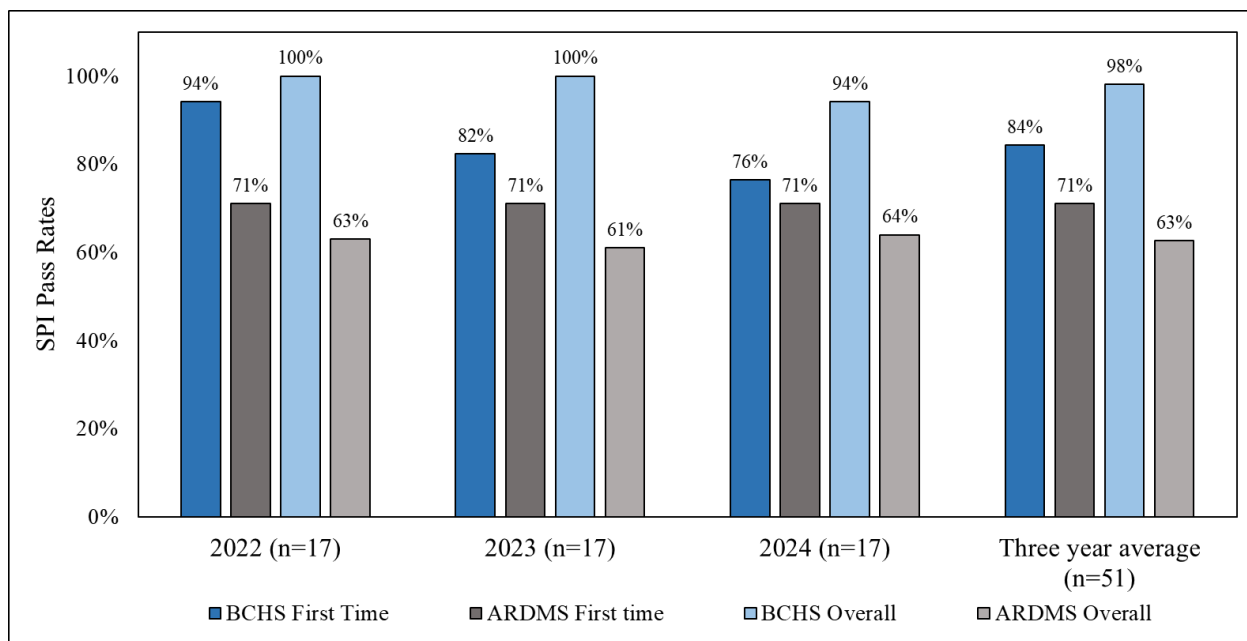
Both benchmarks were met.

Sonography, Physics, and Instrumentation Exam

General Education Outcome #1: *Apply the physical and biological sciences to human health concepts.*

The SPI Registry exam is required for sonographers to become registered. The results of this exam will be used to assess the sonography students' abilities to apply scientific concepts related to physics.

The graph below shows the SPI first time and overall pass rate of BCHS Students compared to the national average.



Benchmark: The benchmark is the national average overall pass rate as determined by the American Registry of Diagnostic Medical Sonographers (ARDMS) Global Exam Performance Summary Report as a three-year average. The overall pass rate exceeds the national average.

Benchmark was **met**.

Course Specific Rubrics

Course specific rubrics that assess student attainment of the following General Education outcomes have been developed or implemented via Outcomes-Based-Grading:

Results

General Education Outcome	% of Students Meeting
Outcome #2: Evaluate the societal factors (political, social, psychological, economic, religion, age, etc.) that influence individuals in diverse communities. (SOC101)	(66/69) 96%
Outcome #3: Deliver cohesive communication in a variety of formats in a professional setting. (COMM103)	(51/51) 100%
Outcome #5: Analyze issues using a multi-faceted approach to holistically address problems. (SPAN101H)	(18/18) 100%
Outcome #6: Integrate ethical reasoning into personal and professional identities to treat others with dignity. (PHIL210)	(98/101) 97%

Outcome #7: Articulate business management standards of practice to be a contributing member of a professional organization. (MGMT215 and MGMT415)	(41/41) 100%
Outcome #8: Differentiate one's own experiences from the experiences of others to foster global sensitivity. (SOCI324)	(16/16) 100%

Course Specific Rubrics-Capstone Courses

Capstone rubrics for BSN, DMS and CVT Sonography, and Biomedical Sciences students have specific rubric rows or scores that are tied to particular General Education competencies. The percentage of students achieving competent or above is identified below for each general education competency.

General Education Outcome	% of Students Meeting
Outcome #3: Deliver cohesive communication in a variety of formats in a professional setting (all 4 programs)	100% (113/113)
Outcome #4: Employ quantitative and logical reasoning to solve problems (BSN and Biomedical Sciences)	96.9% (95/98)
Outcome #8: Differentiate one's own experiences from the experiences of others to foster global sensitivity. (BSN only)	98.9% (90/91)

Benchmark:

At least 70% of students assessed will be at or above the “competent” level on the General Education rubric for each competency being measured by the rubric.

Benchmark was **met** for non-capstone courses.

Benchmark was **met** for Capstone Courses.

Intercultural Development Inventory (IDI):

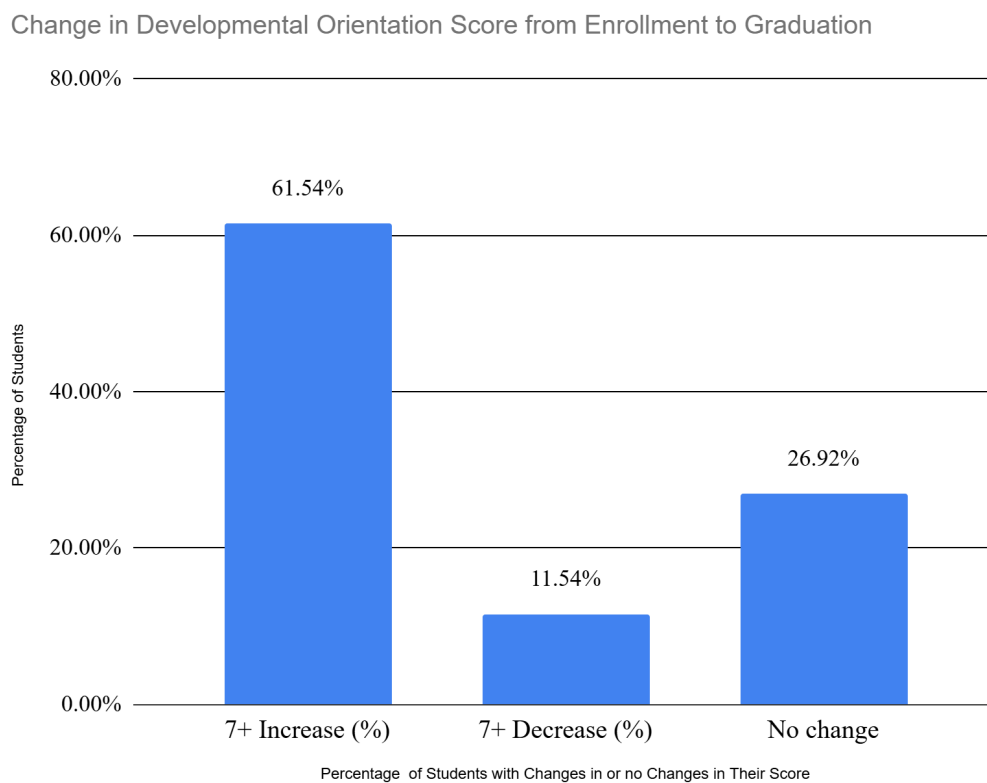
General Education Outcome #2: Evaluate the societal factors (political, social, psychological, economic, religion, age, etc.) that influence individuals in diverse communities

General Education Outcome #8: Differentiate one's own experiences from the experiences of others to foster global sensitivity.

The Intercultural Development Inventory (IDI), a standardized tool which measures cultural sensitivity and internalization of diversity, will be administered to students upon enrollment into the College and is repeated upon graduation. The IDI Developmental Orientation score for each graduating student in the 2024-2025 graduating class is compared to their incoming IDI Developmental Orientation Score. A 7-point difference indicates statistical significance on the IDI Assessment.

Results:

There were 78 graduates from undergraduate programs for which an IDI score at enrollment and graduation was available. The graph below shows the change in Developmental Orientation for each student grouped as follows:



- Students with a significant change in Developmental Orientation Score (7+ Increase)

- Students with a significant decrease in Developmental Orientation Score (7+ Decrease)
- Students with no overall change in Developmental Orientation Score (No Change)

48 out of 78 students (61.54%) had a Developmental Orientation score 7 or more points higher than their Developmental Orientation score at matriculation.

Benchmark: At least 50% of graduating students will have a Developmental Orientation 7 or more points higher at graduation than when they entered.

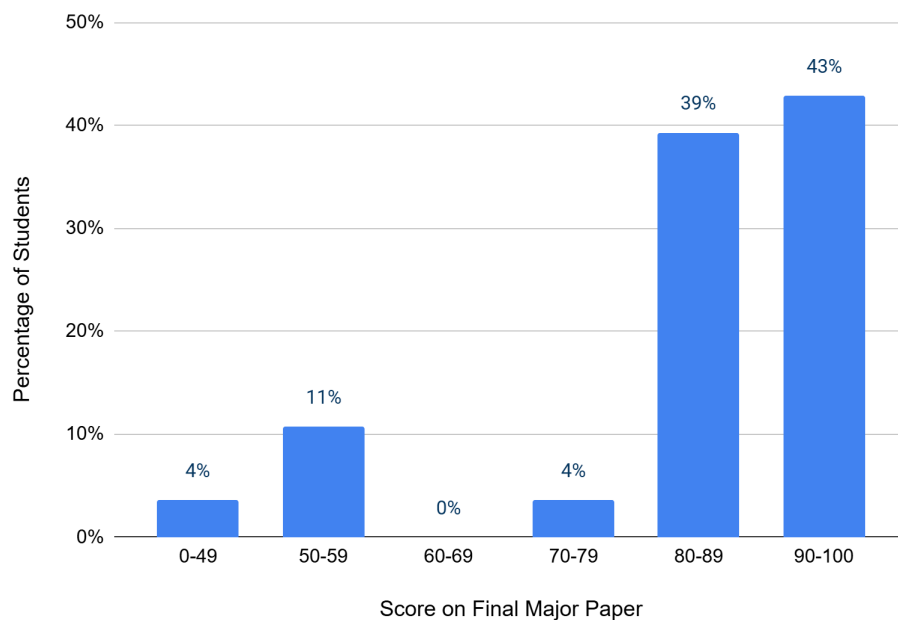
Benchmark was **met**.

English Composition Final Assignments

General Education Outcome #3: *Deliver cohesive communication in a variety of formats in a professional setting.*

The final major assignment in each English course (ENGL104 and ENGL154) offered at Bryan College of Health Sciences is used for assessment of Competency 3a. A score of 80% on the final assignment is considered to demonstrate competency.

Results: The histogram below shows the distribution of scores for students on the final assignments:



Of the 28 students who submitted the final assignment and received a grade, 82% of students scored at or above 80% on the final major paper.

Benchmark: 70% of the students will demonstrate competency in their final English written assignment.

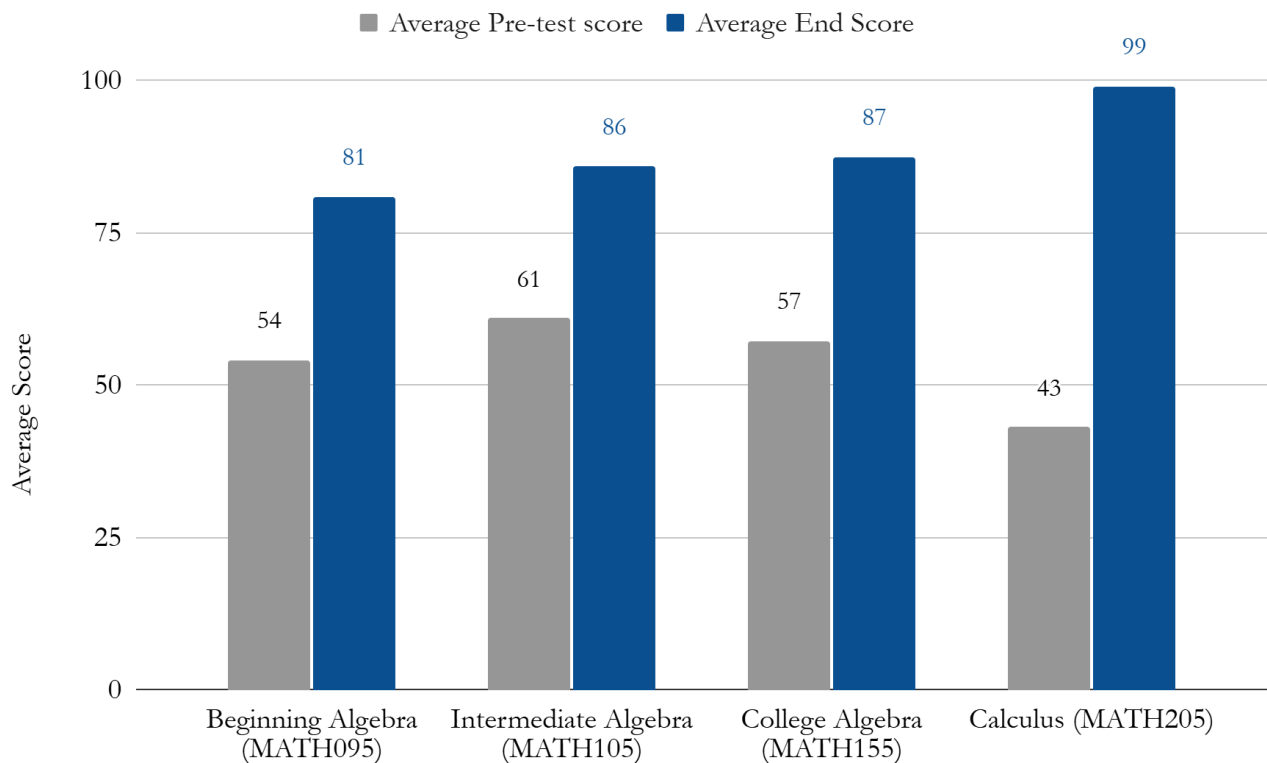
Benchmark was **met**.

Mathematics Assessment

General Education Outcome #4: *Employ quantitative and logical reasoning to solve problems.*

Beginning Algebra, Intermediate Algebra, College Algebra, and Calculus students are assessed in each course with a pre-test at the beginning of each semester, and a post-test at the end of each semester. Both tests are of similar difficulty and comprehensively cover the material for each course. Both tests use a 100-point scale.

Results: The graph below shows the average pre-test and post-test score for each math course taught at Bryan College of Health Sciences.



The net increase in scores was 27 points (Beginning Algebra), 25 points (Intermediate Algebra), 30 points (College Algebra), and 56 points (Calculus).

The total weighted average net increase across all students was 30 points.

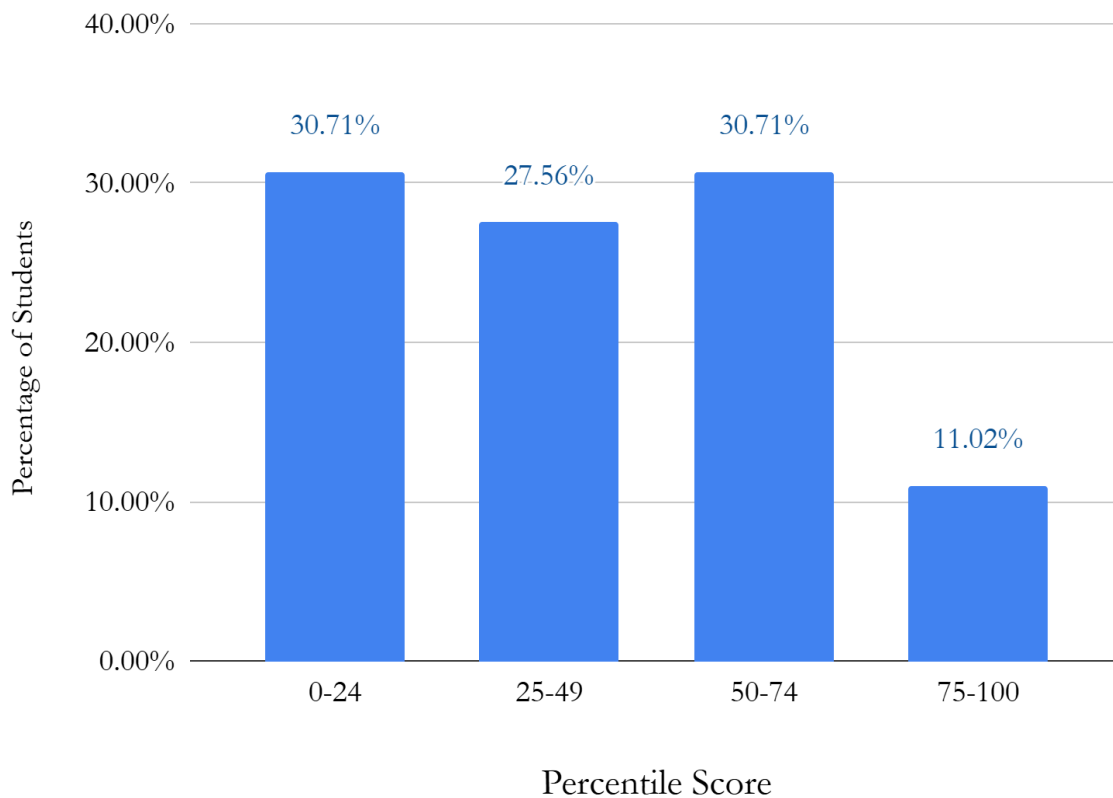
Benchmark: The post-test scores will be, on average, at least 20 points higher relative to the pre-test scores.

Benchmark was **met**.

Health Sciences Reasoning Test (HSRT)

General Education Outcome #4: *Employ quantitative and logical reasoning to solve problems.*

The HSRT is administered to Bachelor of Science in Nursing students in their Clinical Judgment Course, Biomedical Sciences students are assessed at the end of BIOS330 (Scientific Research Methodology). Sonography students are assessed in June during Physics and Instrumentation.



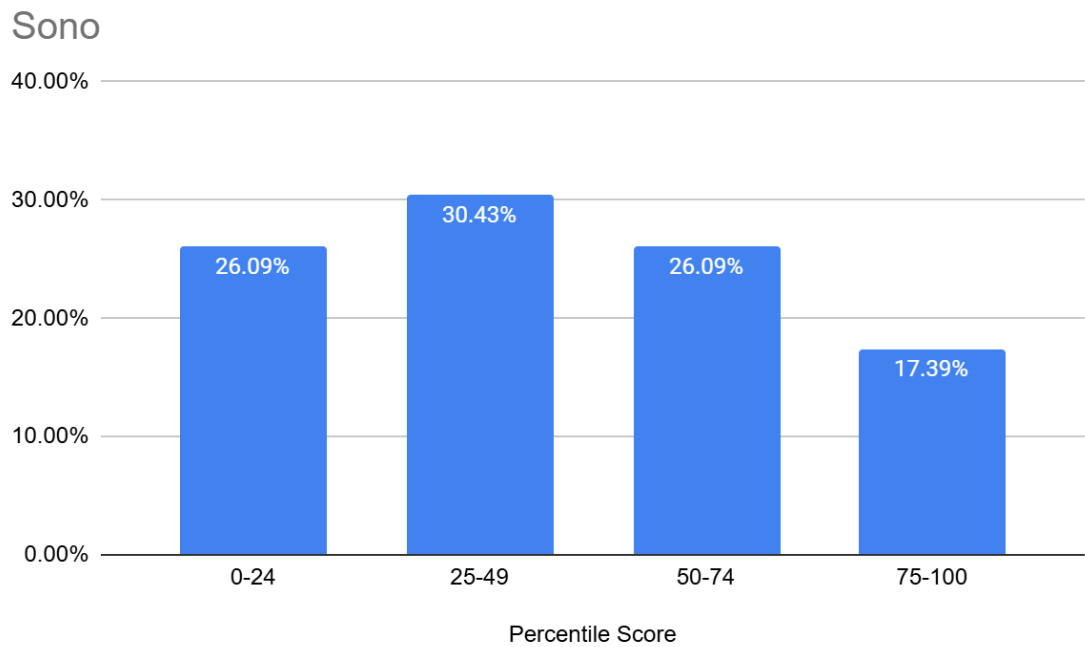
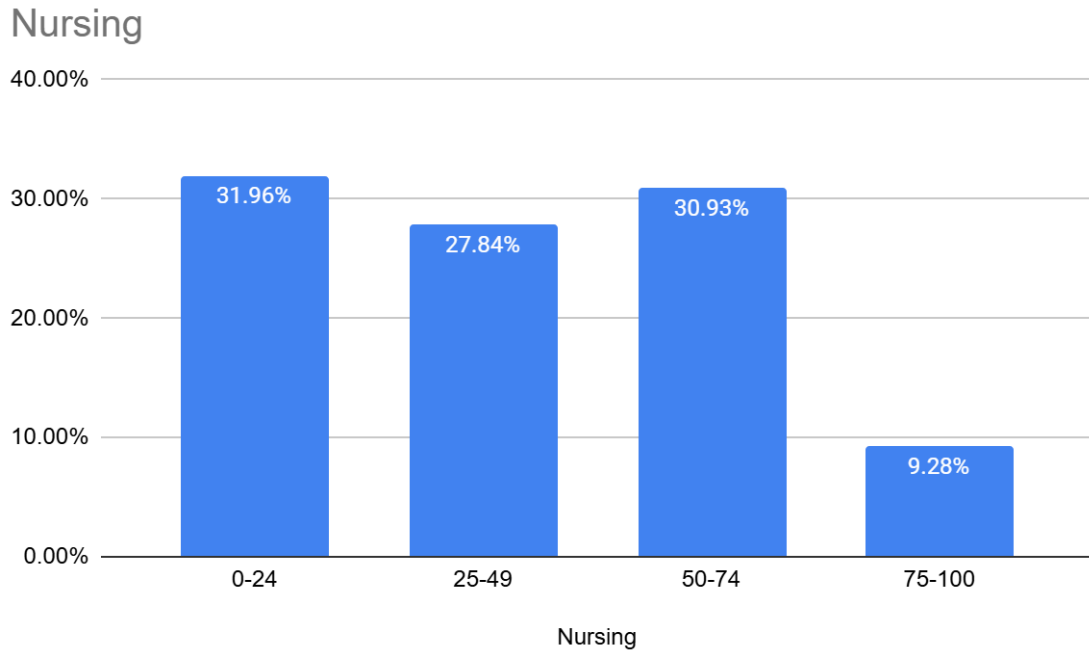
Results: The histogram below shows the distribution of scores for 127 students across the various percentile scores. 41.73% of students scored at or above the 50th percentile.

Benchmark: At least 50% of students will score at or above the 50th percentile.

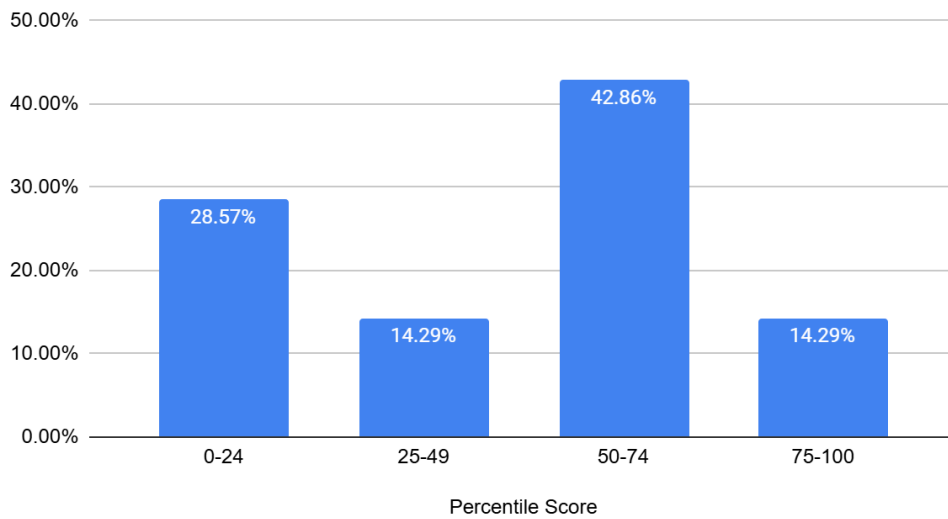
Benchmark was **not met**.

Probable Reason for Gap and Programmatic and/or Operational Adjustments to Narrow Gaps:

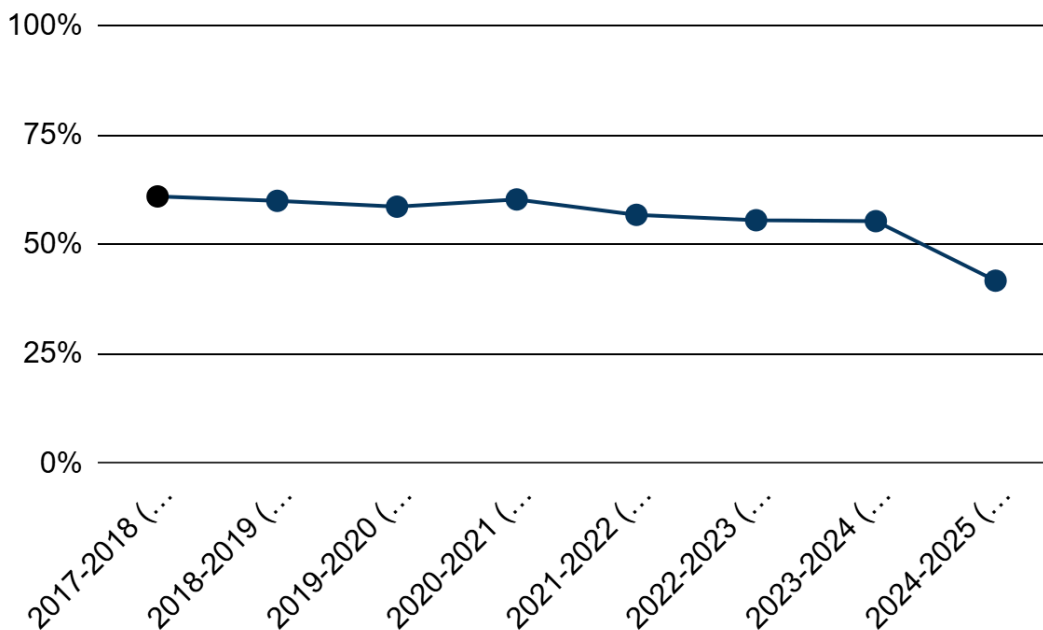
This was further broken down by program:



Biomed



- The only program that met the benchmark was Biomedical Sciences, at 57.15% of graduating students. This is the smallest group of students at 7.
- The largest group of students, nursing at 97 was below the average benchmark of all programs with a percentage of 40.21% scoring at or above the 50th percentile.
- Sonography had 23 students take the HSRT with 43.48% scoring at or above the 50th percentile. This is still below the benchmark.



- Looking at historical percentages of students meeting the benchmark, this is the first year it was not met. We will continue to track this and see if there is improvement next year.

Senior Exit Survey (Indirect Measure)

Competencies Assessed: *All*

Graduates of the BSN, Sonography, Biomedical Sciences, and Healthcare Studies students complete an exit survey upon graduation. Surveys include a section asking students to assess their attainment of all General Education Competencies.

Results: The table below shows the overall responses for each General Education Competency.

Fall 2024 BSN (N=46)	Spring 2025 BSN (N=36)	DMS 2024 (n=10)	CVT 2025 (n=6)	Biomed Fall 2024 (n=2)	Biomed Spring 2025 (n=4)	Healthcare Studies Fall 2024 (n=1)	Healthcare Studies Spring 2025 (n=1)	Percent of Total	General Education Competencies
46	36	10	6	2	4	1	1	100.0%	1. Apply the physical and biological sciences to human health concepts
46	36	10	6	2	4	1	1	100.0%	2. Evaluate the societal factors (political, social, psychological, economic, religion, age, etc) that influence individuals in diverse communities.
46	36	10	6	2	4	1	1	100.0%	3. Deliver cohesive communication in a variety of

									formats in a professional setting.
46	36	10	6	2	4	1	1	100.0%	4. Employ quantitative and logical reasoning to solve problems.
46	36	10	6	2	4	1	1	100.0%	5. Analyze issues using a multi-faceted approach to holistically address problems.
46	36	10	6	2	4	1	1	100.0%	6. Integrate ethical reasoning into personal and professional identities to treat others with dignity.
46	36	10	6	2	4	1	1	100.0%	7. Articulate business management standards of practice to be a contributing member of a professional organization.
46	36	10	6	2	4	1	1	100.0%	8. Differentiate one's own experiences from the experiences of others to foster global sensitivity.

Benchmark: On senior exit surveys, at least 70% of student respondents will indicate they have attained the General Education Competencies.

Benchmark was **met**.

Section 7: Budgetary Changes

We do not anticipate any changes from a budgetary perspective for next year, as the only assessment cost we budget for is the HSRT exam and we will continue to use this in future assessments.

Section 8: Correlate Adjustments to Change in Outcomes

This is the second year we are assessing our new outcomes and adjustments have been made to outcomes. These adjustments are listed below:

General Education Outcome #1:

Assessment Tool #1 - Anatomy and Physiology Concept Inventories: Data was used to establish a benchmark. The 2025-2026 school year will be the first year this benchmark will be used.

Assessment Tool #4 - Pathophysiology Final Exams: We adjusted the benchmark for this assessment. It is now 60% of students will correctly answer 65% or more of the Pathophysiology questions.

General Education Outcomes #2 and #8:

Assessment Tool #2 - Intercultural Developmental Inventory: Due to new interpretation of Title VI of the Civil Rights Act of 1964, the college no longer requires the Intercultural Developmental Inventory for students. It is strictly voluntary, and because of this, final results cannot be compared to initial results.

Biomedical Sciences Program Outcome #1:

Assessment Tool #1 - Physiology Concept Inventories: Data was used to establish a benchmark. The 2025-2026 school year will be the first year this benchmark will be used.

Assessment Tool #2 - Pathophysiology Final Exams: Pathophysiology Final Exams: We adjusted the benchmark for this assessment. It is now 60% of students will correctly answer 65% or more of the Pathophysiology questions.

Section 9: Continued Assessment Refinement

We have several assessment measures in our Assessment Plan for which data is not yet available as we are still refining the assessment measures. These include:

- (1) We will be adding additional classes to the general education course specific rubrics once approved by Humanities and Sciences. These courses include: HIST225 History of Military Medicine, COMM104 Public Speaking, and SPAN313 Latinos in the US.

Graphical Summary of Assessment Results

	Course-Specific Rubrics	Micro-Unknowns	Pathophysiology Final	SPI Exam	IDI	ENGL Assignments	Math Pre-Test /Post-Test	HSRT	Exit Surveys (indirect)
1. Apply the physical and biological sciences to human health concepts.		Not Met	Not Met	Met					Met
2. Evaluate the societal factors (political, social, psychological, economic, religion, age, etc.) that influence individuals in diverse communities.	Met				Met				Met
3. Deliver cohesive communication in a variety of formats in a professional setting.	Met	Met				Met			Met
4. Employ quantitative and logical reasoning to solve problems	Met						Met	Not Met	Met
5. Analyze issues using a multi-faceted approach to holistically address problems.	Met								Met
6. Integrate ethical reasoning into personal and professional identities to treat others with dignity	Met								Met
7. Articulate business management standards of practice to be a contributing member of a professional organization.	Met								Met
8. Differentiate one's own experiences from the experiences of others to foster global sensitivity.	Met				Met				Met

Biomedical Sciences Assessment

Section 2: Biomedical Sciences Program Outcomes

This is the first year the updated Biomedical Sciences Program Outcomes are in place.

1. Establish broad foundational knowledge in order to engage in scientific pursuits.
2. Apply scientific concepts by integrating them into the context of human health.
3. Employ technology in practical settings to facilitate scientific inquiry
4. Develop multidisciplinary laboratory skills to create professional readiness
5. Incorporate ethical reasoning into one's professional identity
6. Propose novel ideas through the application of the scientific method

Section 3-6: Measures, Gaps, Reasons for Gaps, and Programmatic Adjustments

This segment of the report integrates sections 3-6 of the College's Framework for Annual Assessment Reports. It is organized by the learning outcome measurements. For each tool, the subcommittee has identified the corresponding curriculum outcome (**Section 3**), determining whether or not there are gaps between the tool's benchmark and student performance (**Section 4**). For any gaps, the subcommittee has identified probable reasons for the gaps (**Section 5**) and discussed programmatic and/or operational adjustments (**Section 6**) planned to narrow the gaps.

Because the Biomedical Sciences major typically has relatively small cohorts, we analyze data in sets of 25 students across multiple academic years.

Senior Exit Surveys

Corresponds to all Objectives

All six objectives are assessed via exit surveys upon graduation. Students assess their own level of learning of Biomedical Sciences program objectives by rating themselves on a 4-point scale (4=Strongly Agree, 3=Agree, 2=Disagree, 1=Strongly Disagree) or a 5-point scale (5 = Strongly Agree, 4 = Generally Agree, 3 = Neutral, 2 = Generally Disagree, 1 = Strongly Disagree).

Results (Exit Surveys):

This was the first year the updated outcomes were asked about on senior exit surveys. Three senior students completed the exit survey. 100% indicated Agree or Strongly Agree to meeting each outcome.

Benchmark: As analyzed in cohorts of 25 students, 80% of students will score themselves as agreeing or strongly agreeing.

Benchmark is currently **met**, although not at a full cohort of 25 students (currently 23 students).

ACS Standardized Exams

Biomedical Sciences Program Outcome #1: *Establish broad foundational knowledge in order to engage in scientific pursuits.*

The ACS Standardized Exam for General Chemistry I and General Chemistry II was used as a pre- and post-test.

The required cohort size of 20 students has not been met, but the results of the first year are as follows. 8 students took the ACS Standardized Exam in General Chemistry I and 6 increased the raw score by 4 points or more (75%). 4 out of 8 students scored at or above the national average score (50%). In General Chemistry II, 9 students took the exam and 4 students increased their raw score by 4 points or more (44%). 3 out of 9 students scored at or above the national average during the spring semester (33%). For the year, 10 out of 17 (59%) students increased their raw score by 4 or more points and 7 out of 17 (41%) students scored at or above the national average.

Benchmark: 50% of the students will increase their raw score by 4 on the ACS First and Second Semester Exam retest at the end of each semester.

40% of the students will score at or above the national average score on the ACS First and Second Semester Exam retest at the end of each semester.

Both benchmarks were met.

Scientific Research Methodology Literature Review

Biomedical Sciences Program Outcome #1: *Establish broad foundational knowledge in order to engage in scientific pursuits.*

Students in BIOS330 (Scientific Research Methodology) select an area of research and then write an extensive Literature Review of that topic. Literature Reviews are scored with a

rubric that includes rows specifically related to demonstrating broad knowledge about their topic of choice.

The Literature Review and accompanying rubric have been in use since Fall 2021, so we have pulled data from all previous iterations of the course.

Thus far, 31 students have completed the BIOS330 Literature Review. Of those, 30/31 have scored 80% or higher (which would be designated “Competent”) on their Literature Review, corresponding to 96.77% of all students.

Benchmark: 80% of students will score “Competent” or higher on their Literature Review. This benchmark will be reported and assessed in cohorts of 25 students (without splitting cohorts).

Benchmark is currently **met**, although 31 students were used because 10 students came from Fall 2021 and cohorts were not split.

Biochemistry Final Exam

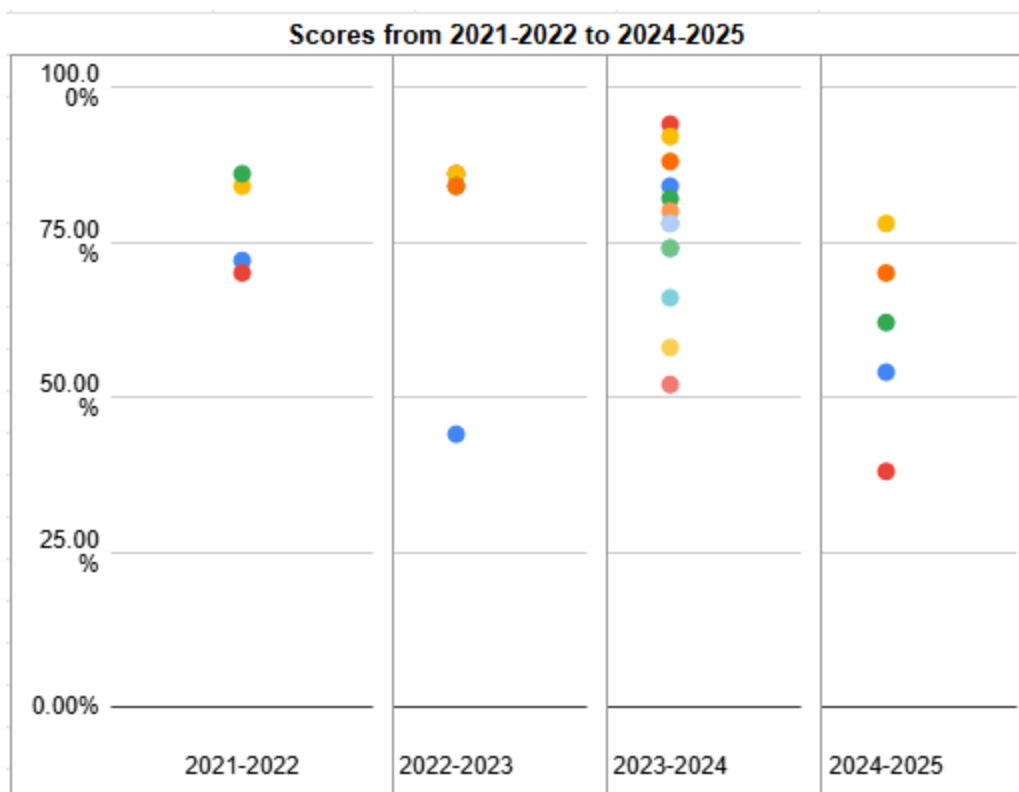
Biomedical Sciences Program Outcome #1: *Establish broad foundational knowledge in order to engage in scientific pursuits.*

A comprehensive final exam that addresses the course objectives for BIOS320 (Biochemistry) is administered at the end of each class to assess student learning.

Results:

The graph below shows the overall scores for the most recent 27 students who have taken the Biochemistry final exam.

Of those 27 students, 20/27 have earned a grade of 70% or higher on the final exam.



74.07% of students scored 70% or higher on the comprehensive Biochemistry final exam.

Benchmark: 70% of students will score 70% or above on this exam, assessed in cohorts of 25 students (without splitting cohorts).

Benchmark was **met**, although 27 students were used because 4 students came from Fall 2021-2022 and cohorts were not split.

Molecular Biology Final Exam

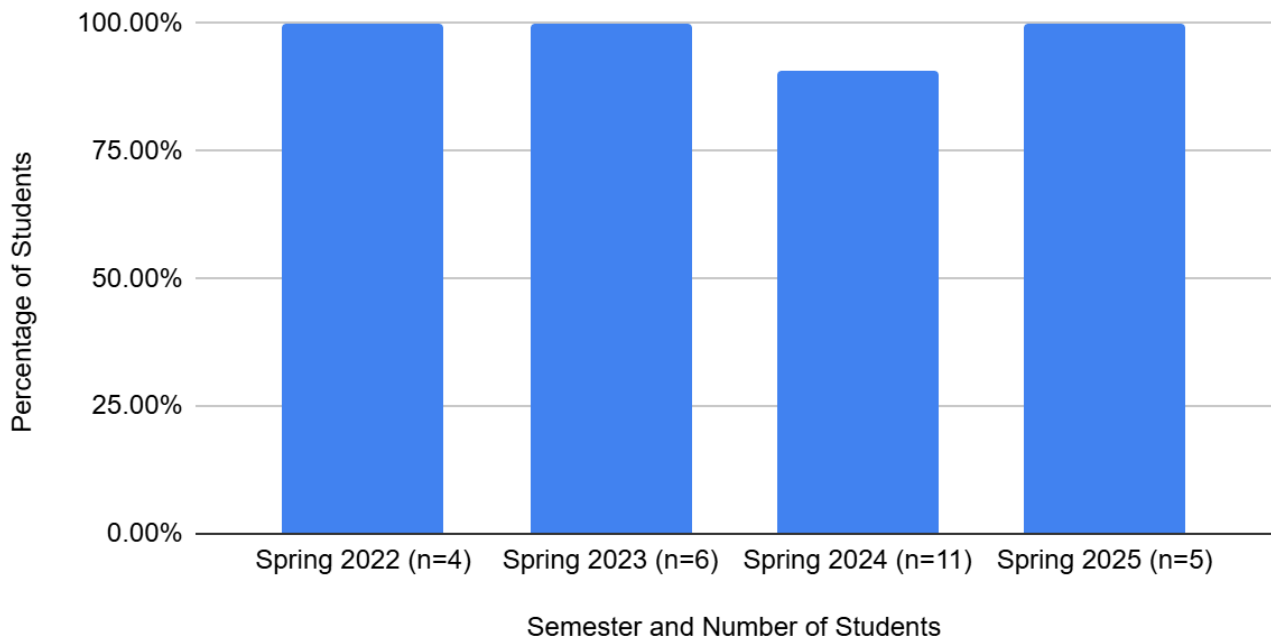
Biomedical Sciences Program Outcome #1: *Establish broad foundational knowledge in order to engage in scientific pursuits.*

A cumulative Molecular Biology final exam is administered to all students at the end of Molecular Biology.

Results

The graph below shows the overall scores for the most recent 31 students who have taken the Molecular Biology final exam.

Percentage of Students At or Above 70% on Comprehensive Molecular Biology Final Exam



96.15% of students scored 70% or higher on the comprehensive Molecular Biology final exam.

Benchmark: 70% of students will score 70% or above on this exam, assessed in cohorts of 25 students (without splitting cohorts).

Benchmark is **met**, although 26 students were used because 4 students came from Spring 2022 and cohorts were not split.

Genetics Paper

Corresponds to the following Objective(s):

Biomedical Sciences Outcome #2: *Apply scientific concepts by integrating them into the context of human health.*

Students are assigned a final paper in which they explain the genetic basis of a chosen disease. A rubric is utilized to assess the students' writing, skills, and understanding of the genetic concepts learned throughout the semester and reflected in the paper.

Results

The table below shows the percentage of students scoring 80% or higher each year that has been scored as well as a cumulative percentage:

	Total (n)	Percent of students scoring 80% or higher	Number of students scoring 80% or higher
2022-2023	11	100.00%	11
2023-2024	9	66.67%	6
2024-2025	6	100.00%	6
Total	26	88.46%	23

Of the current cohort of 26 students, 88% have scored 80% or higher.

Benchmark: 80% of students will achieve 80% or higher on this assignment.

Benchmark is **met**.

Biomedical Sciences Capstone Paper

Biomedical Sciences Outcome #2: *Apply scientific concepts by integrating them into the context of human health.*

Biomedical Sciences Outcome #3: *Employ technology in practical settings to facilitate scientific inquiry*

Biomedical Sciences Outcome #5: *Incorporate ethical reasoning into ones professional identity*

Biomedical Sciences Outcome #6: *Propose novel ideas through the application of the scientific method*

Established rubrics aligned with each of the program outcomes above are used to assess BIOS480 Capstone papers. For Biomedical Sciences Outcome #2 – the entire overall rubric score on the capstone paper is utilized.

Looking at the most recent cohort of 25 (28 so a cohort isn't split) students who have completed their Biomedical Sciences Capstone (2021-2025):

- 100% of students have scored 80% or higher on their overall Capstone Rubric
- 89% of students have scored Accomplished on the rubric portion corresponding to Biomedical Sciences Outcome #3

- 100% of students have scored Accomplished on the rubric portion corresponding to Biomedical Sciences Outcome #5
- 82% of students have scored Accomplished on the rubric portion corresponding to Biomedical Sciences Outcome #6

Benchmark

- 80% of students will achieve 80% or higher on their BIOS480 Capstone (Objective #2)
- 80% of students will achieve Accomplished on the rubric portion corresponding to each outcome (Outcomes #3, 5, 6)

Benchmark was **met** for all four outcomes

BIOS330 Data Representations Assignment

Biomedical Sciences Outcome #3: *Employ technology in practical settings to facilitate scientific inquiry*

Students in BIOS330 (Scientific Research Methodology) are required to complete an assignment that asks them to use technology to analyze data, as well as to generate informative data representations that align with their data analysis.

The Data Representations Assignment and accompanying rubric have been in use since Fall 2021, so we have pulled data from all previous iterations of the course.

Thus far, 32 students have completed the BIOS330 Data Representations. Of those, 26/32 have scored 80% or higher, corresponding to 81.25% of all students.

Benchmark: 80% of students will score 80% or higher on this assignment as assessed in cohorts of 25.

Benchmark is **met**.

Genetics Current Issue in Genetics Paper:

Biomedical Sciences Outcome #5: *Incorporate ethical reasoning into one's professional identity*

Students complete an assignment investigating controversial societal and/or ethical issues related to the field of Genetics. Students research their chosen topic and determine who the societal/ethical issues are impacted by science and how they, in turn, impact society.

Results

The table below shows the percentage of students scoring 80% or higher each year that has been scored as well as a cumulative percentage

	Total (n)	Percent of students scoring 80% or higher	Number of students scoring 80% or higher
2022-2023	11	100.00%	11
2023-2024	9	100.00%	9
2024-2025	6	100.00%	6
Total	26	100.00%	26

Of the current cohort of 26 students, 100% have scored 80% or higher.

Benchmark: 80% of students will achieve 80% or higher on this assignment.

Benchmark is **met**.

BIOS330 Ethical Issues in Research Module

Biomedical Sciences Outcome #5: *Incorporate ethical reasoning into one's professional identity*

Students in BIOS330 must complete an Ethical Issues in Research Module in BIOS330 (Scientific Research Methodology). This module requires both completion of a quiz over the ethical issues associated with a Institutional Review Board (IRB) as well as an Institutional Animal Care and Use Committee (IACUC) and completion of an Ethical Research Plan specific to their research project.

Results:

The Data Representations Assignment and accompanying rubric have been in use since Fall 2021, so we have pulled data from all previous iterations of the course.

Thus far, 32 students have completed the BIOS330 Ethical Issues in Research Module. Of those, 30/32 have scored 90% or higher (93.75%) on their quiz, and 100% have successfully completed their Ethical Research Plan on their first attempt.

Benchmark: 80% of students will score 90% or higher on the quiz, and complete their Ethical Research Plan on their first attempt.

Benchmark was **met**.

Microbiology Unknowns Rubric:

Biomedical Sciences Outcome #6: *Propose novel ideas through the application of the scientific method*

Biomedical Sciences students write a formal lab report in Microbiology (A Microbiology Unknowns Project). The rubric used to assess this assignment include rows specifically aligned with Biomedical Sciences Outcome #6.

Looking at the most recent cohort of 25 students who have completed their Biomedical Sciences Capstone (2021-2025), 23/26 (88.46%) scored Competent or higher on this section of their Unknowns paper.

Benchmark: 75% of students in Microbiology (BIOS205L) will achieve “Competent” level or above on these rubric rows.

Benchmark was **met**.

Molecular Biology Paper Rubric:

Biomedical Sciences Outcome #6: *Propose novel ideas through the application of the scientific method*

Biomedical Sciences students write a formal lab report in Molecular Biology. The rubric used to assess these assignments include rows specifically aligned with Biomedical Sciences Outcome #6.

Looking at the most recent cohort of 26 students who have completed their Biomedical Sciences Capstone (2021-2024), 23/26 (88.46%) scored Competent or higher on this section of their Unknowns paper.

Benchmark: 80% of students in Molecular Biology Lab (BIOS410L) will achieve “Competent” level or above on these rubric rows.

Benchmark was **met**.

Overall Program Effectiveness

Application to Graduate Programs

Student application to graduate programs is tracked through graduation and beyond, whenever possible.

Results: Of the 27 most recent graduates who have applied to a graduate program, May 2020-May 2025, 25/27 were accepted, which equates to an 92.5% acceptance rate.

Detailed Analysis: The breakdown of the 25 acceptances are as follows:

- 12 were accepted into PA School
- 1 were accepted into Medical School
- 3 were accepted into an Accelerated Nursing Program
- 2 were accepted into Master’s Degree Programs
- 2 were accepted into PhD programs
- 1 was accepted into an Accelerated DNP program
- 1 was accepted into a PsyD program
- 1 was accepted into Podiatry School
- 1 was accepted into Dental School
- 1 was accepted into PT School

Of the 25 accepted students, 19 were accepted the first time they applied, while 6 were accepted upon a subsequent application.

Benchmark: Of those who apply, 80% will be accepted to graduate school.

Benchmark is currently **met**.

Employment Rate:

Results: The table below shows the post-graduation plans for all students who did not apply for a graduate program upon completion of their Biomedical Sciences degree:

Graduation Date	Employer	Time to Employment
12/17	Biotest Plasma Center, Lincoln	Immediate
5/17	Nebraska Methodist, Omaha, Phlebotomist	Immediate
12/17	Grand Island, Phlebotomist	Immediate
5/19	CNA during gap year while applying to Genetic Counseling Programs	Immediate
5/20	Bryan Medical Center, Phlebotomist	Immediate
5/21	Surgical Technician (oral surgeon’s office. Omaha)	Immediate
5/23	Neogen	Immediate

5/23	Medical clinic	Immediate
5/24	Teaching Phlebotomy and Medical Terminology	Immediate
5/24	Working in medical clinical	Immediate
12/24	Lab Assistant at UNMC	Immediate

Benchmark: Of those students not attending graduate school, 50% will be employed in a biomedical science related field within 12 months of graduation.

Benchmark is currently **met**.

Graduation Rate and Retention Rate

Of the 12 students who matriculated with an anticipated graduation date of Fall 2024-Spring 2025:

- 5 students graduated on time
- 1 student is slated to graduate in August 2025
- 1 student switched to BSN and is expected to graduate in May 2027
- 5 withdrew or were administratively withdrawn from the program

Results:

The five-year weighted average for graduation rate is 56.90%.

Graduation Year	Number matriculated	Percent Graduated
2020-2021	6	67%
2021-2022	13	61.5%
2022-2023	10	50.0%
2023-2024	17	58.8%
2024-2025	12	50.0%
Five-year total	58	56.90%

2024-2025 Retention Rate:

The five-year weighted average for retention rate is 72.41%.

The status of matriculated students for the last five years is shown in the table below:

Entrance Semester	Matriculated	Retained/ Alumni	Withdrawn/LOA
Fall 2020	6	4	2
Spring 2021	1	1	0
Fall 2021	16	11	5
Spring 2022	2	2	0
Summer 2022	2	1	1
Fall 2022	7	5	2
Fall 2023	9	6	3
Spring 2024	2	1	1
Fall 2024	12	10	2
Spring 2025	1	1	0
Total	58	42	16

Benchmark: Our graduation rate will be 70%. Our Fall-to-fall retention rate will be 75%

Benchmark is currently **not met** for both Graduation Rate and Retention Rate

Probable Reason for Gap and Programmatic and/or Operational Adjustments to Narrow Gaps:

We continue to work on our pathways to graduate programs to make the Biomedical Sciences program more attractive to incoming students, as well as to build the culture within our Biomed program of community and belonging. We have additional partnerships we are working on now, as well as communicating to students more clearly the partnerships available.

Graphical Summary

A graphical summary of the Biomedical Sciences Assessment Report can be found on the following page.

	1: Establish broad foundational knowledge in order to engage in scientific pursuits.	2: Apply scientific concepts by integrating them into the context of human health.	3: Employ technology in practical settings to facilitate scientific inquiry	4: Develop multidisciplinary laboratory skills to create professional readiness	5: Incorporate ethical reasoning into ones professional identity	6: Propose novel ideas through the application of the scientific method
BIOS330 Literature Review	Met					
Biochemistry Final	Met					
Molecular Biology Final	Met					
Genetics Paper		Met				
BIOS480 Capstone		Met	Met		Met	Met
BIOS330 Data Representations Assignment			Met			
Current Issue in Genetics Paper					Met	
BIOS330 Ethical Issues Module					Met	
Microbiology Paper						Met

Molecular Biology Paper						Met
Senior Exit Survey	Met	Met	Met	Met	Met	Met

Section 7: Budgetary Changes

We do not anticipate any Budgetary Changes to our assessment in the upcoming year.

Section 8: Correlate Adjustments to Change in Outcomes

Given that this is the first year we have used our new outcomes, we do not have adjustments from last year tied to these outcomes. That being said, we have utilized our Microbiology, Molecular Biology, and Senior Capstone rubrics for the past several years to assess both the old and new outcomes, and this is the first year we have met in all three, suggesting the long term changes we implemented to improve our Senior Capstone papers are finally producing results.

Section 9: Continued Assessment Refinement

We have several assessment measures in our Assessment Plan for which data is not yet available as we are still refining the assessment measures. These include:

- (1) Physiology Concept Inventories. These were first administered to students in the 2023-2024 academic year as a pilot. They will again be administered in the 2024-2025 academic year, at which point a plan for implementation as well as a benchmark will be established.
- (2) American Chemical Society Standardized Exams. These exams were administered as a pre-test/post-test pilot this year. They will again be administered in the 2024-2025 academic year, after which a plan for implementation as well as a benchmark will be established.
- (3) Pathophysiology Final Exams. The final exam in Pathophysiology contains a subset of 20 questions designed to test broad concepts related to the course. The percentage of questions answered correctly is then assessed for each student. These questions were refined in the 2023-2024 academic year, and a benchmark will be established for use in the 2024-2025 academic year.
- (4) Establishing Laboratory Skills Checks which will be used to directly assess outcome #4: Develop multidisciplinary laboratory skills to create professional readiness.

Healthcare Studies Assessment

Section 2: Healthcare Studies Program Outcomes

This is the first year the updated Healthcare Studies Program Outcomes are in place.

1. Explain factors that influence health, demonstrating literacy in a chosen health-related discipline
2. Evaluate information relevant to a particular health setting to gain insight
3. Integrate distinct concepts from multiple health-related disciplines, revealing unique connections
4. Partner with others in the healthcare environment, resulting in mutually beneficial collaboration

Section 3-6: Measures, Gaps, Reasons for Gaps, and Programmatic Adjustments

This segment of the report integrates sections 3-6 of the College's Framework for Annual Assessment Reports. It is organized by the learning outcome measurements. For each tool, the subcommittee has identified the corresponding curriculum outcome (**Section 3**), determining whether or not there are gaps between the tool's benchmark and student performance (**Section 4**). For any gaps, the subcommittee has identified probable reasons for the gaps (**Section 5**) and discussed programmatic and/or operational adjustments (**Section 6**) planned to narrow the gaps.

HCST415 Professional Standards Discussion

Healthcare Studies Program Outcome #3: *Integrate distinct concepts from multiple health-related disciplines, revealing unique connections*

Students in HCST415 (Preparation for Professional Practice) complete a Professional Standards Discussion in which they integrate several concepts in order to address a hypothetical ethical issue related to their field of interest. Students are evaluated using an established rubric for their ability to address this issue in a multi-faceted way.

Of the most recent 10 students to complete this assignment, 90% have scored 80% or higher on the assignment.

Benchmark: 80% of students will score 80% or higher on this assignment.

Benchmark was **met**.

HCST417 Final Project Rubric

Healthcare Studies Program Outcome #1: *Establish broad foundational knowledge in order to engage in scientific pursuits.*

Healthcare Studies Program Outcome #2: *Evaluate information relevant to a particular health setting to gain insight*

Students in HCST417 (Internship) complete a Final Project at the end of their internship. This project is evaluated using an established rubric, including a rubric rows aligned with Program Outcome #1 and Program Outcome #2

Results: In the most recent cohort of 10 students, spanning Summer 2020-Fall 2024, 100% of students scored 80% or higher on both rubric rows.

Benchmark: 80% of students will score 80% or higher on this rubric row as assessed in cohorts of 10.

Benchmark was **met**.

HCST417 Supervisor Evaluation

Healthcare Studies Program Outcome #4: *Partner with others in the healthcare environment, resulting in mutually beneficial collaboration*

The supervisor evaluation has 7 questions, scored on a Likert Scale (1 = Never, 2 = Some of the time, 3 = Most of the time, 4 = Always). The average score across all 7 items will be calculated for each student.

Results: The average score across all 7 items for the most recent 10 students was 3.91, with 100% of students scoring 3.5 or higher on their Site Supervisor Evaluation.

Benchmark: 80% of students will achieve an average score of 3.5 or higher on their Site Supervisor Evaluation

Benchmark was **met**.

HCST420 Capstone Project Rubric

Healthcare Studies Program Outcome #1: *Explain factors that influence health, demonstrating literacy in a chosen health-related discipline*

Healthcare Studies Program Outcome #2: *Evaluate information relevant to a particular health setting to gain insight*

Healthcare Studies Program Outcome #3: *Integrate distinct concepts from multiple health-related disciplines, revealing unique connections*

Healthcare Studies Program Outcome #4: *Partner with others in the healthcare environment, resulting in mutually beneficial collaboration*

The Healthcare Studies degree culminates in a senior level capstone project. Rubric rows associated with each program outcome are included and assessed.

Data is available for 10 students who have completed the HCST420 Final Capstone Rubric. Of those 10:

- 100% have scored 80% or higher on the rubric rows corresponding to Outcome #1
- 100% have scored 80% or higher on the rubric rows corresponding to Outcome #2
- 100% have scored 80% or higher on the rubric rows corresponding to Outcome #3
- 100% have scored 80% or higher on the overall capstone, corresponding to Outcome #4

Benchmark: 80% of students will score 80% or higher.

Benchmark was **met**.

Overall Program Effectiveness: Positive Placement

Overall program effectiveness is assessed through the positive placement percentage. The percentage of graduates who go on to secure either employment in a healthcare related field or admission to a graduate program in their related field is calculated.

I don't have employment data on May 2024 and August 2024 Healthcare Studies graduates, but the December 2024 and May 2025 graduates are both pursuing graduate school. Summarizing, of the 10 previous Healthcare Studies students, 10 were working in a healthcare related field or had been accepted into a graduate program within 6 months of graduation. This corresponds to a positive placement rate of 100%.

Benchmark: The program will have a positive placement rate of 80% or higher as assessed in cohorts of 10.

Benchmark was **met**.

Graphical Summary

	Establish broad foundational knowledge in order to engage in scientific pursuits.	Evaluate information relevant to a particular health setting to gain insight	Integrate distinct concepts from multiple health-related disciplines, revealing unique connections	Partner with others in the healthcare environment, resulting in mutually beneficial collaboration
HCST415 Professional Standards Discussion			Met	
HCST417 Final Project Rubric				Met
HCST417 Supervisor Evaluation				Met
HCST420 Capstone Project Rubric	Met	Met	Met	Met

Section 7: Budgetary Changes

We do not anticipate any Budgetary Changes to our assessment in the upcoming year.

Section 8: Correlate Adjustments to Change in Outcomes

This is the first year we have assessed Healthcare Studies so we have no adjustments to assess.

Section 9: Continued Assessment Refinement

We have not had success in obtaining Senior Exit Survey data from Healthcare Studies students in the past. We will work to implement Senior Exit Surveys starting in the 2024-2025 Academic Year.