

**SEMINOLE STATE COLLEGE
ASSOCIATE IN SCIENCE FOR HEALTH SCIENCES (207)**

Program Review Summary

October 2022

Introduction

The mission of Seminole State College is to empower people for academic success, personal development, and lifelong learning. To that end, the College offers twenty-seven degree/certificate programs, including the Associate in Science for Health Sciences. In accordance with requirements set forth by the Oklahoma State Regents for Higher Education, the College conducts a thorough review of this degree program every five years. The Science Technology Engineering and Mathematics Division (S.T.E.M.) presents here the results of its self-review of the Associate in Science for Health Sciences.

Assessment of this transfer degree program employed a number of direct and indirect indicators. The focus of this process was to evaluate degree program productivity and the achievement of specific degree program and general education outcomes by students. Additionally, this review relates these findings to a number of relevant Higher Learning Commission Criteria and Components and the educational mission of the College. Based on the information presented here, the academic division makes recommendations regarding the degree program.

3.7.5 Process (Internal/External Review): Self-review by academic division

Previous Reviews and Actions from those reviews: In the previous review, instructors recommended addressing issues related to low graduation rates in the Health Science degree program and increasing the time to complete mathematics prerequisite courses. S.T.E.M faculty members created a plan to address low graduation rates.

Analysis and Assessment (including quantitative and qualitative measures) noting key findings from internal or external reviews and including developments since the last review:

Analysis of degree program productivity revealed that the degree program averaged 241 declared majors per year with 52 graduates and an average of 6710 total credit hours generated per year over the period under review. Other direct indicators used were course-embedded assessment and Educational Testing Service Proficiency Profile Test (ETS). Principal indirect indicator used was the SSC Graduate Exit Survey. Students increased knowledge by a 1.96 to 1 ratio in a comparison of the pre-test and post-test scores. The ETS test scores reflect learning slightly below (0.3%) the national averages over the past 4 years.

Key findings from the most current evaluation of the Associate in Science for Health Sciences Faculty serving as analysts found that more students major in the Health Sciences degree program at Seminole State College than all other majors except one. Faculty and degree program mentors have worked to tailor this degree program to specific fields with 3 emphases added recently, MLT, Nursing, and PTA. Faculty have received positive feedback from students

regarding the emphases as students seem to thrive with a more specific plan. Pre-requisite courses and application requirements for these programs are regularly reviewed by faculty and used to accurately advise students as they plan to apply and transfer into 4-year baccalaureate programs and/or healthcare professional programs. Healthcare industry needs and shortages are also regularly evaluated across our state to ensure job placement upon graduation.

A. Centrality of the Program to the Institution's Mission:

SSC Mission Statement

Seminole State College empowers people for academic success, personal development, and lifelong learning.

The Associate in Science for Health Sciences Degree Program:

Empowers people for academic success by preparing students for a range of Health Sciences careers and at the same time improve their critical thinking skills necessary for success in all studies.

Empowers people for personal development by training students to set and achieve educational goals by developing responsibility, organizational skills, and academic skills. The program places students in appropriate developmental or college level courses, allowing students the opportunity to progress through the curriculum to achieve success.

Empowers people for life-long learning by providing a variety of courses that vary in content and have the purpose of broadening a student's appreciation of and creating a desire for continued learning once they have completed their education.

Seminole State College prepares students to continue their education beyond the two-year level, trains students for careers and other educational opportunities, and makes available resources and services designed to benefit students and the community at large. Seminole State College also enhances the capabilities of individuals to achieve their goals for personal development by providing quality learning experiences and services that respond to diverse individual and community needs in a changing global society.

B. Vitality of the Program:

B.1. Program Objectives and Goals:

**Associate in Science for Health Sciences Degree Program Outcomes
Outcomes for Transfer Degree Programs**

Outcome 1: Demonstrate successful articulation of Seminole State College transfer degree programs to state and professional institutions of higher learning granting professional and baccalaureate degrees in Oklahoma.

Outcome 2: Demonstrate successful academic achievement by Seminole State College transfer degree students at primary receiving state baccalaureate institutions of higher learning in Oklahoma. Successful academic achievement is defined as the maintenance of satisfactory academic progress toward degree completion as determined by the receiving institution.

Outcomes Specific to Associate of Science for Health Sciences

Outcome 3: Demonstrate a grasp of biological and related concepts foundational to advanced courses in Health Sciences sciences. Advanced courses shall be defined as courses commonly considered Junior and Senior level at baccalaureate or professional degree granting institutions.

Outcome 4: Demonstrate preparation for continued pursuit of Health Sciences education leading to a baccalaureate or professional degree in a branch of the Health Sciences.

B.2 Quality Indicators (including Higher Learning Commission issues):

The SSC Health Sciences Degree Program fulfills Higher Learning Commission Criteria by providing evidence of student learning, faculty engagement that encourages quality teaching, and effective assessment of the student learning process. Instructors in the Mathematics and Science areas consistently review assessment tools and methods and revise those tools and methods, when necessary, to provide the most accurate assessment data possible. To measure the two outcomes specific to the Health Sciences Degree Program course embedded assessment is the foremost method. In the S.T.E.M. areas, instructors used pre-tests and post-tests as the tools to obtain assessment data. Faculty members regularly review and change pre-test and post-test questions when necessary. Instructors use formative assessment to evaluate student learning and adjust teaching to reflect the findings from the formative assessment. This process illustrates that the Health Sciences Degree Program fulfills academic priorities such as improving the assessment of student learning and striving for instructional quality.

Instructors calculate student score improvements from pre-test to post-test for every class in the fall semester. While pre-tests and post-tests only assess improvements in a sampling of course objectives, the fact that all courses in the S.T.E.M. areas show improvement verifies that student learning takes place and that outcomes specific to the Health Sciences Degree Program are met.

As an example, key personnel gathered course embedded assessment data from the Fall, 2021 and Spring, 2022 semesters as shown in the following table. The percent of increase reflects the difference between the average of the post-test scores and the pre-test scores. For all fourteen of the Major Field courses, the average growth rate was 39%. The range of growth from pre-test scores to post-test scores was 35% to 43%.

**Table 1. Combined Course Embedded Assessment Results for Fall 2021 through Spring 2022
for Major Field Courses in Degree Program**

General Education Outcomes	Pre-Test % Correct	Post-Test % Correct	Difference
General Education Outcome 1	43%	85%	42%
General Education Outcome 2	42%	78%	35%
General Education Outcome 3	37%	78%	41%
General Education Outcome 4	38%	81%	43%
Specific Outcomes for AS Health Sciences	Pre-Test % Correct	Post-Test % Correct	Difference
Degree Program Outcome 3	44%	79%	35%
Degree Program Outcome 4	41%	77%	36%

B.3. Minimum Productivity Indicators:

The following table provides the data for the Health Sciences Degree Program.

Table 2
Health Sciences Declared Majors and Graduates

Academic Year	Semester	Declared Majors	Graduates Total Per Year
2017-2018	Summer	50	
	Fall	345	
	Spring	320	32
2018-2019	Summer	137	
	Fall	356	
	Spring	328	44
2019-2020	Summer	178	
	Fall	345	
	Spring	283	52
2020-2021	Summer	139	
	Fall	320	
	Spring	222	70
2021-2022	Summer	95	
	Fall	272	
	Spring	221	64

In Table 2, the results show approximately 241 students selecting the program each year and about 52 successfully completing the program annually. This degree program has a fairly high demand level. However, relative to the number of students declaring Health Sciences as a major, the graduation rate is low. Analysts partially attributed the low graduation rate to the phenomenon that many of the students who declare Health Sciences as their major change majors upon acceptance to the Seminole State College nursing or medical laboratory technology program. Additionally, some students transfer to other institutions before completing an associate degree at Seminole State College.

This data shows that the Health Sciences Degree Program well exceeds the minimum standards of productivity for Majors Enrolled (25) and Degrees Confirmed (5).

B.4. Other Quantitative Measures:

- a. Number of courses taught exclusively for the major program for each of the last five years and the size of classes:

Since all courses offered in this major may be used as lower division general education courses, no courses exclusively for this degree were taught in the past five years. However, the fifteen courses considered major courses for this program are listed in Table 5. The classes range in size from 10 to 50 students.

- b. Student credit hours by level generated in all major courses that make up the degree program for five years:

Table 3. Credit Hours Generated in Major Field Courses By Level

Academic	1000 Level Credit Hours	2000 Level Credit Hours
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Year	Generated	Generated
2017-18	2952	2294
2018-19	4577	2948
2019-20	3864	3262
2020-21	4203	2852
2021-22	4208	2389
Totals	19804	13745

Note: In Table 3, the “Total Hours Generated” column represents the student credit hours generated by all the Major Courses of the degree program for the given academic year. The hours do not represent the number of student credit hours generated only by those students declaring Health Sciences as their major.

c. Direct instructional costs for the program for the review period:

Instructional Cost (Estimate):

No direct data was available that could be used to determine the exact amount of the instructional cost for any of the math and science degree programs. The annual SSC budget report provided the total expenditures for the science department as shown in Table 4. The annual science department budget contains the instructional costs for four of the S.T.E.M. division degree programs.

Table 4

Academic Year	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022
Instructional Cost	\$996,965	\$463,449	\$562, 778	\$906,012	\$903,307

d. The number of credits and credit hours generated in the program that support the general education component and other major programs including certificates:

Support of General Education Outcomes

All courses offered in the S.T.E.M. areas support the General Education philosophy. The S.T.E.M. Division instructors at Seminole State College make every effort to provide experiences that will equip students with the necessary skills to make informed decisions and encourage life-long learning. Instructors also attempt to provide experiences that will make students into citizens who will be thoughtful about their attitudes toward human life, cultural diversity and biological and physical environments. Please see Table 3 for a list of student credit hours generated in the major courses.

All college level courses in the S.T.E.M. areas at Seminole State College support one or more of the General Education Outcomes. As students move through the course offerings of the Health Sciences Degree Program, they will eventually achieve all four General Education Outcomes. To illustrate this support of the General Education Outcomes the following table shows the Major Field courses for the Associate in Science for Health Sciences Degree Program and the General Education Outcomes each course addresses.

Table 5
All General Education Outcomes addressed by a specific course are marked with the letter "X."

Major Field Course Information			General Education Outcome			
Prefix	Number	Title	1	2	3	4
BIOL	1214	Principles of Biology		X		
BIOL	1234	General Zoology		X		X
CHEM	1114	Introduction to Chemistry	X	X	X	X
CHEM	1315	General Chemistry I	X	X	X	X
MATH	1513	College Algebra	X	X	X	
PSY	1113	General Psychology		X	X	
SOC	1113	Introduction to Sociology		X	X	
BIOL	2113	Introduction to Nutrition	X	X		
BIOL	2114	Human Anatomy		X		X
BIOL	2214	Human Physiology		X		X
BIOL	2224	Microbiology		X	X	X
MATH	2153	Elementary Statistics	X	X	X	X
PSY	2023	Developmental Psychology		X	X	
PSY	2053	Social Psychology	X	X	X	X

e. A roster of faculty members, faculty credentials and faculty credential institution(s). Also include the number of full time equivalent faculty in the specialized courses within the curriculum:

Current Science/Technology/Engineering/Mathematics Division Faculty

Table 6

Current Full-Time Mathematics/Science/Engineering Faculty			
Name	Teaching Area	Highest Degree	Institution
Miles, Deanna	Science	M.D.	University of Oklahoma
Senaratne, Nilmini	Science	Ph.D.	University of Kansas
Jobe, Noble	Science	Ph.D.	Oklahoma State University
Tollett, Jarrod	Mathematics / Science	M.Ed.	East Central University

Streight, Ricky	Mathematics	Ph D.	University of Oklahoma
Bryant, Melissa	Mathematics	M.Ed.	East Central University
Carpenter, Emily	Mathematics	M.S.	Oklahoma State University
Eubank, Truitt	Science	M.S.	Stephen F. Austin State University
Soward, Amanda	Science	M.S.	University of Oklahoma HS
Rich, Wendy	Agriculture Science	M.S.	Oklahoma State University
Current Full-Time Faculty From Other Divisions Teaching MSE Classes (Instructors with ** beside their name teach only zero-level classes)			
Rogers, Kendall	Sociology/Psychology	M.H.R.	University of Oklahoma
Knowles, Christal	Psychology	M.S.	Cameron University
Current Adjunct Mathematics/Science/Engineering Faculty (Instructors with ** beside their name teach only zero-level classes)			
Helseth, Dave	Science	M.S.	Oklahoma State University
Hernandez, Theran	Science	M.Ed.	Grand Canyon University, Phoenix
Stanley, Kara	Science	M.S.	West Texas A&M University
Walker, Susan	Science	M.S.	Oklahoma State University
Cook, Jason	Science	M.S.	University of Oklahoma
Berry, Ana	Math	M.S.	Southwest Oklahoma State University
Blackwood, Kevin	Science	M.S.	East Central University
Hobbs, Charles	Math	Ph D.	University of Wisconsin
Howser, Cheri**	Math	B.S.	East Central University
Johnson, David	Science	M.S.	Texas A&M
Kirk, Susan	Math	Ph D.	Oklahoma State University
Kidney, Allison	Math	M.A.	Southern Nazarene University

f. If available, information about employment or advanced studies of graduates of the program over the past five years:

No data

g. If available, information about the success of students from this program who have transferred to another institution:

Transfer Reports from Four-Year Institutions:

Seminole State College routinely seeks transfer data from the primary transfer baccalaureate institutions but receipt of transfer data from those institutions has been sporadic. Transfer reports received from East Central University, the University of Central Oklahoma, Oklahoma University, and Oklahoma State University provided GPAs of students who had transferred from Seminole State College. Transfer data in 2021-22 showed that SSC students who transferred to these universities had a slightly higher G.P.A. (approximately 0.07 higher) than the average student at these schools. The data in those reports confirm our expectation that SSC students perform well when compared with other students upon transfer and verifies the competence of SSC students in their academic preparation.

B.5. Duplication and Demand:

B.5. Duplication and Demand Issues:

Review of Duplicated Programs

While other institutions have similar programs, the Health Sciences Degree Program is a high demand program at Seminole State College. Our function at Seminole State College is to provide local access to those students in our five county service area wishing to pursue the Health Sciences Degree. This degree program prepares students for a wide range of health professions. The only near duplications (in our five county area) are at a few private schools that are cost prohibitive for many students.

The Health Sciences Degree is a high demand program and the rates of declared majors and graduation well exceed OSRHE productivity levels. According to institutional statistics reports, the demand for the Health Sciences Degree Program was the second highest behind the General Studies degree.

B.5.a. Detail demand from students, taking into account the profiles of applicants, enrollment, completion data, and occupational data:

The Health Sciences Degree is a high demand program and the rates of declared majors and graduation exceed OSRHE productivity levels. An average of 241 students selected the Associate in Science in Health Sciences Degree Program each year over the period under review with an average of 52 graduates each year. This degree program possesses a high demand level. Relative to the number of students declaring Health Sciences as a major, the graduation rate is small at 22%. The students in the Health Sciences Degree Program are predominately under the age of 24 at 65% in spring 2022. Learners of all ages declare this major. The number of under-prepared learners following this program in spring 2022 was 24% as indicated by the Health Sciences ACT scores under 19.

B.5.b. Detail demand for students produced by the program, taking into account employer demands, demands for skills of graduates, and job placement data:

Faculty members expect students with a Health Sciences Degree to matriculate to a four-year program. The wide variety of options available to these students includes positions in areas such as health care administration, medical billing and coding, and imaging and diagnostics.

B.5.c. Detail demand for services or intellectual property of the program, including demands in the form of grants, contracts, or consulting:

Not applicable to SSC.

B.5.d. Detail indirect demands in the form of faculty and student contributions to the cultural life and well-being of the community:

Although many of the faculty members commute, they also participate in community activities such as blood drives, Lion's Club, Rotary Club, churches, and the local chambers of commerce. Faculty members and students are active in the five county area served by SSC.

B.5.e. The process of program review should address meeting demands for the program through alternative forms of delivery. Detail how the program has met these demands:

With the advances in technology, faculty members have expanded to several different forms of delivery. They have found that online, hybrid or blended courses, and zoom courses prove to be successful delivery methods. SSC also addresses the community need for a variety of course scheduling by offering online and accelerated courses. Online lab simulations have been utilized as many students have needed to complete labs virtually either due to enrolling in an online science course or to the recent pandemic.

B.6. Effective Use of Resources:

Staff Support

The S.T.E.M. Division has a full-time secretary who primarily supports the Division Chair, and secondarily supports the other functions of the division including purchasing, maintaining budgets and various records, and facilitating the various needs of the S.T.E.M. faculty members. There is currently one student wage student working for the S.T.E.M. Division along with a student tutor working in the STEM lab.

Educational Technology Support

The infusion of technology into academic programs and processes currently receives priority implementation and funding at Seminole State College. Through this focus, the College creates a technologically enhanced academic environment focused on student learning. As a result, technology has never been a limiting factor in classroom instruction. Primary funding sources are E&G funds, federal grants, dedicated student fees, and private donations.

Seminole State College installed a wireless network with two control centers providing Internet and Seminole State College Intranet connectivity to campus academic and residential buildings. In addition to wireless connectivity, all classrooms are hard-wired for Internet and Seminole State College Intranet access. Students have access to personal email accounts, online enrollment, student records, and can obtain copies of their transcripts online. Students may use one of the computers in 16 computer labs stationed across campus to access these sites. Technologically equipped classrooms have computer systems with current instructional and multimedia software, CD/DVD/VCR players, digital multimedia projectors and a Smart Board. Classrooms equipped for IETV have full-motion video/audio interactive television technology interfaced with fiber optic transmission equipment and a computerized multimedia projection system for OneNet course sharing. Faculty members use the internet for instructional activities and information research in courses throughout the curriculum.

Technological services provided by the Testing Center include computerized Advanced Placement testing, class placement testing, ACT residual testing, telecourse testing, and technologically-aided ADA appropriate testing for students with special needs.

Instructional Technology Support Services

Maintaining all forms of technology used in instruction requires a qualified support team. Seminole State College has just such a team made up of the MIS director and two tech persons. They are responsible for maintaining all campus technology such as computers, Smart Boards, IETV equipment, and keeping the campus Intranet and Internet operable in all offices and classrooms.

Web-based Support Services

Brightspace is available to instructors for course management and not just for online course delivery. Through MySSCOK, instructors report student grades electronically, receive emergency response, and make announcements.

Institutional Program Recommendations: (describe detailed recommendations for the program as a result of this thorough review and how these recommendations will be implemented, as well as the timeline for key elements)

Table 7

Recommendation	Implementation Plan	Target Date
S.T.E.M. faculty will again investigate the high demand and low graduation rate discrepancy to see if graduation rates can be increased.	S.T.E.M. faculty will investigate the high demand and low graduation rate discrepancy by using a variety of methods including student surveys and transfer student data.	Ongoing
Consider revising the degree program to include more flexibility in the major field electives to better meet specific needs of students entering pre-professional programs or already working in healthcare industry or biology fields.	Faculty will review the major field electives included on the Health Science degree program along with the Liberal Studies-Biology emphasis to determine if any additions should be made. Equivalent experience/certification may be considered as a Special Projects course as more investigation is needed by faculty to determine this option.	On-going

Summary of Recommendations:

	Department	School/College	Institutional
Possible Recommendations:			
Expand program (# of students)	Increase graduates by 50%	Increase graduates by 50%	
Maintain program at current level	Maintain program enrollment at this level		

Reduce program in size or scope			
Reorganize program			
Suspend program			
Delete program			

Department/
Program Head *Emily Casper* (Signature) Date 11/15/2022

Vice President for Academic Affairs *Armand Estey* (Signature) Date 11/16/22

President *Lana Reynolds* (Signature) Date 11-29-22