Northern Oklahoma College
Associate of Science in Biological Science (006)
Options: Pre-Medicine, Pre-Pharmacy
June 2018 Academic Program Review

Description of the program's connection to the institutional mission and goals:

The mission of Northern Oklahoma College, the State's oldest community college, is a multi-campus, land-grant institution that provides high quality, accessible, and affordable educational opportunities and services which create life-changing experiences and develop students as effective learners and leaders within their communities in a connected, ever-changing world.

The core values of Northern Oklahoma College are that through personalized education we believe in providing individualized services leading our students to achieve their academic goals in a welcoming and safe environment, and we will provide support to students in and out of the classroom so that they receive a full college experience with diverse opportunities. Another core value is community and civic engagement, so we believe that educated citizens are necessary for a healthy, democratic society, and that free and open expression and an appreciation for diversity are cornerstones of higher education, and we believe in economic and environmental sustainability and the importance of enriching the intellectual, artistic, economic, and social resources of our communities. We at Northern Oklahoma College also believe in the inherent value of intellectual pursuit for both personal and professional growth, as well as the need to prepare students for the 21st century professions, and that a knowledge-centered institution is vital to a knowledge-based economy, and we measure our success against national models and standards of excellence.

The alignment of the A.S. degree in Biology with the institutional mission is addressed below.

3.7.5 Process (Internal/External Review):

Previous Reviews and Actions from those reviews:

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

For all degree programs, NOC evaluates general education and program learning outcomes each year. Program objectives and outcomes for the A.S. in Biological Science (with Pre-Medicine and Pre-Pharmacy options) are reviewed annually through embedded assessments in required program courses. The last full program review for the program occurred in 2013. The 2013 review noted the use of state-of-the-art microscopes and Vernier probeware for labs, and a wide range of career opportunities in health fields and research. Limitations noted in 2013 included few courses offered in alternative delivery formats and a need to develop other degree options.

Since the last review, the following changes have been made to enhance the Biological Science degree program:

- In 2015-2016, degree sheets were reviewed to reduce number of hours needed for graduation where possible.
- In 2016-2017, the following adjustments were made:

  Science – Biology/Zoology
  - Added additional summer course offerings of BISI 1114 (online) and CHEM 1314 (Tonkawa).
  - Purchased student lab materials for Stillwater (A&P models, Physiology computer interfaces, Botany microscope slides).

  Option: Pre-Medicine
  - Increased CHEM 1414 offerings in Enid.
  - Added onsite offering of HLST 1113 (Tonkawa)
  - Added additional summer course offerings of CHEM 1314 and BISI 2214 (Tonkawa).
  - Increased internship opportunities within the discipline area.

  Option: Pre-Pharmacy
  - Changed program requirement of MATH 2145 Calc I to MATH 2103 Elem Calc to meet requirement at transfer institutions.
  - Increased CHEM 1414 offerings in Enid.
  - Added additional summer course offerings of CHEM 1314 and BISI 2214 (Tonkawa).
  - Added additional summer course offerings of CHEM 1314 and BISI 2214 (Tonkawa).
  - Increased internship opportunities within the discipline area.

- In 2017-2018, the following adjustments were made:

  Science – Biology/Zoology
  - Added sections of BISI 1314, BISI 2104, BISI 2204 in Stillwater.
  - Began offering CHEM 1414 during the fall semester in Enid.

  Option: Pre-Medicine
  - Added sections of BISI 2104 and BISI 2204 in Stillwater to accommodate nursing and radiology students.
  - Purchased A&P lab models and Physiology computer interfaces for Stillwater lab sections.
  - Added additional online summer course offerings of BISI 1114 and HLST 1113 1314.

  Option: Pre-Pharmacy
  - Added sections of BISI 2104 and BISI 2204 in Stillwater to accommodate nursing and radiology students.
  - Purchased A&P lab models and Physiology computer interfaces for Stillwater lab sections.
  - Added additional online summer course offerings of BISI 1114 and HLST 1113 1314.

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

Students in the A.S. in Biological Science degree program meet general education needs and can specialize in 3 different areas aiding in smooth transfer in high-demand degree areas for our region, aligning with state ecosystem workforce needs.

B. Vitality of the Program:

B.1.Program Objectives and Goals:

Upon the completion of the Biological Science degree, students will be able to:

Science – Biology/Zoology

- Demonstrate the levels of organization from atoms to ecosystems.
- Demonstrate effective implementation of the scientific method and written and oral expression of scientific concepts and data.
- Explain evolutionary theory and its supporting principles.

Option: Pre-Medicine

- Demonstrate knowledge of the levels of structural and functional relationships from atoms to organ systems.
- Demonstrate effective implementation of the scientific method and written and oral expression of scientific concepts and analysis of data.
- Explain concepts of equilibrium, homeostasis, and energy transfer as it relates to human body systems.

Option: Pre-Pharmacy

- Demonstrate knowledge of the levels of structural and functional relationships from atoms to tissues.
- Demonstrate effective implementation of the scientific method and written and oral expression of scientific concepts and data.
- Demonstrate the concepts of equilibrium and energy transfer.

Quality Indicators (including Higher Learning Commission issues):

	Biology/Zoology
Date	6/19/2018
Competency # and Description	1. Demonstrate the levels of organization from atoms to ecosystems
Course	BISI 1314 – General Botany BISI 1414 – General Zoology BISI 2124 – Microbiology
Activity	BISI 1314, 1414, and 2124 – exams
Measurement	BISI 1314, 1414, and 2124 – exams
Evaluation Criteria	70% pass rate on exam
2015-2016 Results	BISI 1314 9 out of 11 – 81.8% BISI 1414 27 out of 34 – 79.4% BISI 2124 46 out of 64 – 71.9%
2016-2017 Results	BISI 1314 7 out of 9 – 77.8% BISI 1414 23 out of 34 – 67.6% BISI 2124 35 out of 62 – 56.5%
2017-2018 Results	BISI 1314 6 out of 11 – 54.5% BISI 1414 20 out of 29 – 69.0 % BISI 2124 28 out of 47 – 59.6%
Summary of changes for 2017-2018	No changes for the next year.

Timeline for Review	Fall/spring data will be collected in the spring and reviewed at the beginning of the fall semester. Instructors from all campuses will determine needed adjustments.
Date	6/19/2018
Competency # and Description	2. Demonstrate effective implementation of the scientific method and written and oral expression of scientific concepts and analysis of data.
Course	BISI 1314 – General Botany BISI 1414 – General Zoology BISI 2124 - Microbiology CHEM 1414 – General Chemistry II PHYS 1114 – General Physics I
Activity	BISI 1314 – Quizzes, BISI 1414 – Paper, exam BISI 2124 – Exam, quiz, paper CHEM 1414 - lab PHYS 1114 – Quiz, lab
Measurement	BISI 1314 – Quizzes, BISI 1414 – Paper, exam BISI 2124 – Exam, quiz, paper CHEM 1414 - lab PHYS 1114 – Quiz, lab
Evaluation Criteria	70% pass rate on activity
2015-2016 Results	BISI 1314 6 out of 11 – 54.5% BISI 1414 22 out of 25 – 88% BISI 2124 50 out of 60 – 83.3% CHEM 1414 46 out of 46 – 100% PHYS 1114 63 out of 72 – 87.5%
2016-2017 Results	BISI 1314 7 out of 9 – 77.8% BISI 1414 29 out of 34 – 85.3% BISI 2124 49 out of 57 – 86.0% CHEM 1414 46 out of 55 – 83.6% PHYS 1114 57 out of 63 – 90.5%
2017-2018 Results	BISI 1314 6 out of 11 – 54.5% BISI 1414 23 out of 26 – 88.5% BISI 2124 41 out of 43 – 95.3% CHEM 1414 50 out of 53 – 94.3% PHYS 1114 25 out of 28 – 89.3%
Summary of changes for 2017-2018	No changes for the next year.
Recommendation for changes for 2018-2019	Data will be reviewed at the beginning of fall and changes recommended at that time.
Timeline for Review	Fall/spring data will be collected in the spring and reviewed at the beginning of the fall semester. Instructors from all campuses will determine needed adjustments.
Date	6/19/2018
Competency # and Description	3. Explain evolutionary theory and its supporting principles.
Course	BISI 1314 – General Botany BISI 1414 – General Zoology BISI 2124 - Microbiology
Activity	BISI 1314, BISI 1414, and BISI 2124 – Quizzes/Exams

Measurement	BISI 1314, BISI 1414, and BISI 2124 – Quizzes/Exams
Evaluation Criteria	70% pass rate on activity
2015-2016 Results	BISI 1314 7 out of 11 – 63.6% BISI 1414 22 out of 27 – 81.4% BISI 2124 45 out of 64 – 70%
2016-2017 Results	BISI 1314 7 out of 9 – 77.8% BISI 1414 46 out of 63 – 73.0% BISI 2124 41 out of 55 – 74.5%
2017-2018 Results	BISI 1314 5 out of 11 – 45.5% BISI 1414 21 out of 24 – 87.5% BISI 2124 33 out of 48 – 68.9%
Summary of changes for 2017-2018	No changes for the next year.
Recommendation for changes for 2018-2019	Data will be reviewed at the beginning of fall and changes recommended at that time.
Timeline for Review	Fall/spring data will be collected in the spring and reviewed at the beginning of the fall semester. Instructors from all campuses will determine needed adjustments.

Biology/Zoology - Pre-Medicine Option	
Date	6/19/2018
Competency # and Description	1. Demonstrate knowledge of the levels of structural and functional relationships from atoms to organ systems.
Course	BISI 2104 – Human Anatomy BISI 2124 - Microbiology
Activity	BISI 2104 and BISI 2124 - Exams
Measurement	BISI 2104 and BISI 2124 - Exams
Evaluation Criteria	Pass rate of 70% on each activity
2015-2016 Results	BISI 2104 25 out of 35 – 71.4% BISI 2124 46 out of 64 – 71.9%
2016-2017 Results	BISI 2104 28 out of 35 – 80.0% BISI 2124 38 out of 58 – 65.5%
2017-2018 Results	BISI 2104 51 out of 82 – 62.2% BISI 2124 28 out of 47 – 59.6%
Summary of changes for 2017-2018	No changes for the next year.
Recommendation for changes for 2018-2019	Data will be reviewed at the beginning of fall and changes recommended at that time.
Timeline for Review	Fall/spring data will be collected in the spring and reviewed at the beginning of the fall semester. Instructors from all campuses will determine needed adjustments.
Date	6/19/2018
Competency # and Description	2. Demonstrate effective implementation of the scientific method and written and oral expression of scientific concepts and analysis of data.
Course	BISI 2124 - Microbiology CHEM 1414 – General Chemistry II PHYS 1114 – General Physics I

	PHYS 1214 – General Physics II
Activity	BISI 2124 – Quizzes, exams, labs, paper CHEM 1414 - Lab PHYS 1114 – Quiz and lab PHYS 1214 – Quiz and lab
Measurement	BISI 2124 – Quizzes, exams, labs, paper CHEM 1414 - Lab PHYS 1114 – Quiz and lab PHYS 1214 – Quiz and lab
Evaluation Criteria	70% pass rate on exam
2015-2016 Results	BISI 2124 47 out of 57 – 82.5% CHEM 1414 46 out of 46 – 100% PHYS 1114 63 out of 72 – 87.5% PHYS 1214 21 out of 23 – 91.3%
2016-2017 Results	BISI 2124 54 out of 59 – 91.5% CHEM 1414 43 out of 51 – 84.3% PHYS 1114 57 out of 63 – 90.5% PHYS 1214 27 out of 31 – 97.1%
2017-2018 Results	BISI 2124 41 out of 43 – 95.3% CHEM 1414 50 out of 53 – 94.3% PHYS 1114 25 out of 28 – 89.3% PHYS 1214 15 out of 15 – 100.0%
Summary of changes for 2017-2018	No changes for the next year.
Recommendation for changes for 2018-2019	Data will be reviewed at the beginning of fall and changes recommended at that time.
Timeline for Review	Fall/spring data will be collected in the spring and reviewed at the beginning of the fall semester. Instructors from all campuses will determine needed adjustments.
Date	6/19/2018
Competency # and Description	3. Explain concepts of equilibrium, homeostasis, and energy transfer as it relates to human body systems.
Course	BISI 2104 – Human Anatomy BISI 2124 - Microbiology CHEM 1414 – General Chemistry II PHYS 1114 – General Physics I PHYS 1214 – General Physics II
Activity	BISI 2104 – Quizzes, exams BISI 2124 – Exam, worksheet CHEM 1414 – Quiz, lab PHYS 1114 – Quiz, homework PHYS 1214 – Quiz, lab
Measurement	BISI 2104 – Quizzes, exams BISI 2124 – Exam, worksheet CHEM 1414 – Quiz, lab PHYS 1114 – Quiz, homework PHYS 1214 – Quiz, lab
Evaluation Criteria	70% pass rate on activity
2015-2016 Results	BISI 2104 22 out of 35 - 62.9% BISI 2124 48 out of 64 – 75.0% CHEM 1414 16 out of 21 – 76.2% PHYS 1114 54 out of 66 – 81.8% PHYS 1214 15 out of 17 – 88.2%

2016-2017 Results	BISI 2104 27 out of 35 – 77.1% BISI 2124 36 out of 56 – 64.3% CHEM 1414 48 out of 51 – 94.1% PHYS 1114 57 out of 62 – 91.9% PHYS 1214 32 out of 38 – 84.2%
2017-2018 Results	BISI 2104 49 out of 81 – 60.5% BISI 2124 27 out of 43 – 62.8% CHEM 1414 45 out of 53 – 84.9% PHYS 1114 16 out of 19 – 84.2% PHYS 1214 12 out of 15 – 80.0%
Summary of changes for 2017-2018	No changes for the next year.
Recommendation for changes for 2018-2019	Data will be reviewed at the beginning of fall and changes recommended at that time.
Timeline for Review	Fall/spring data will be collected in the spring and reviewed at the beginning of the fall semester. Instructors from all campuses will determine needed adjustments.

Biology/Zoology - Pre-Pharmacy Option	
Date	6/19/2018
Competency # and Description	4. Demonstrate knowledge of the levels of structural and functional relationships from atoms to organ systems.
Course	BISI 2104 – Human Anatomy BISI 2124 - Microbiology
Activity	BISI 2104 and BISI 2124 - Exams
Measurement	BISI 2104 and BISI 2124 - Exams
Evaluation Criteria	Pass rate of 70% on each activity
2015-2016 Results	BISI 2104 25 out of 35 – 71.4% BISI 2124 46 out of 64 – 71.9%
2016-2017 Results	BISI 2104 28 out of 35 – 80.0% BISI 2124 36 out of 58 – 62.1%
2017-2018 Results	BISI 2104 51 out of 82 – 62.2% BISI 2124 28 out of 47 – 59.6%
Summary of changes for 2017-2018	No changes for the next year.
Recommendation for changes for 2018-2019	Data will be reviewed at the beginning of fall and changes recommended at that time.
Timeline for Review	Fall/spring data will be collected in the spring and reviewed at the beginning of the fall semester. Instructors from all campuses will determine needed adjustments.
Date	6/19/2018
Competency # and Description	5. Demonstrate effective implementation of the scientific method and written and oral expression of scientific concepts and analysis of data.
Course	BISI 2124 - Microbiology CHEM 1414 – General Chemistry II PHYS 1114 – General Physics I
Activity	BISI 2124 – Quizzes, exams, labs, paper CHEM 1414 - Lab

	PHYS 1114 – Quiz, Lab
Measurement	BISI 2124 – Quizzes, exams, labs, paper CHEM 1414 - Lab PHYS 1114 – Quiz, lab
Evaluation Criteria	70% pass rate on exam
2015-2016 Results	BISI 2124 50 out of 60 – 83.3% CHEM 1414 46 out of 46 – 100% PHYS 1114 63 out of 72 – 87.5%
2016-2017 Results	BISI 2124 54 out of 59 – 91.5% CHEM 1414 46 out of 53 – 86.8% PHYS 1114 57 out of 63 – 90.5%
2017-2018 Results	BISI 2124 41 out of 43 – 95.3% CHEM 1414 50 out of 53 – 94.3% PHYS 1114 25 out of 28 – 89.3%
Summary of changes for 2017-2018	No changes for the next year.
Recommendation for changes for 2018-2019	Data will be reviewed at the beginning of fall and changes recommended at that time.
Timeline for Review	Fall/spring data will be collected and reviewed in the spring and instructors from all campuses will determine needed adjustments.
Date	6/19/2018
Competency # and Description	6. Demonstrate the concepts of equilibrium and energy transfer.
Course	BISI 2124 - Microbiology CHEM 1414 – General Chemistry II PHYS 1114 – General Physics I
Activity	BISI 2124 – Quizzes, exams, worksheets CHEM 1414 – Quiz, exam PHYS 1114 – Quiz, exam
Measurement	BISI 2124 – Quizzes, exams, worksheets CHEM 1414 – Quiz, exam PHYS 1114 – Quiz, exam
Evaluation Criteria	70% pass rate on activity
2015-2016 Results	BISI 2124 49 out of 64 – 76.6% CHEM 1414 32 out of 45 – 66.7% PHYS 1114 54 out of 66 – 81.8%
2016-2017 Results	BISI 2124 19 out of 32- 64.3% CHEM 1414 46 out of 53 - 86.8% PHYS 1114 57 out of 63 – 90.5%
2017-2018 Results	BISI 2124 27 out of 43 – 62.8% CHEM 1414 43 out of 53 – 81.1% PHYS 1114 16 out of 19 – 84.2%
Summary of changes for 2017-2018	No changes for the next year.
Recommendation for changes for 2018-2019	Data will be reviewed at the beginning of fall and changes recommended at that time.
Timeline for Review	Fall/spring data will be collected and reviewed in the spring and instructors from all campuses will determine needed adjustments.

Date	6/19/2018
Competency # and Description	7. Use and apply physical data to solve problems
Course	MATH 2103 – Elementary Calculus
Activity	Exam/quiz
Measurement	Exam/quiz graded with a rubric created for this assignment.
Evaluation Criteria	70% pass rate on activity
2015-2016 Results	Data not collected.
2016-2017 Results	12 out of 15 – 80.0%
2017-2018 Results	Click or tap here to enter text.
Summary of changes for 2017-2018	No changes at this time. First semester to collect.
Recommendation for changes for 2018-2019	Data will be reviewed at the beginning of fall and changes recommended at that time.
Timeline for Review	Fall/spring data will be collected and reviewed in the spring and instructors from all campuses will determine needed adjustments.

B.2 Minimum Productivity Indicators:

Time Frame (e.g.: 5 year span)	**Head Count/Graduates**				
	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
Science-Biology/Zoology	113/12	103/22	120/13	120/22	133/10
Pre-Medicine Option	174/33	178/22	251/37	242/46	283/33
Pre-Pharmacy Option	22/1	21/0	27/2	22/5	25/1
Total	**309/46**	**302/44**	**398/52**	**384/73**	**441/44**

B.3 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:

Course Number	**Course Name**	**Sections/Average Size of Class**				
		2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
BISI 1314	General Botany	1/11	1/12	1/11	1/9	2/12
BISI 1414	General Zoology	2/22	2/16.5	2/16	2/19.5	2/15.5
BISI 2104	Human Anatomy	4/27.5	4/25	6/20.8	6/21.3	7/21.1
BISI 2124	Microbiology	8/17.1	9/15.5	9/18.3	10/18.7	10/15.7

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

	Course Name	**Hours Generated**

Course Number		2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
BISI 1314	General Botany	44	48	44	36	96
BISI 1414	General Zoology	176	132	128	156	124
BISI 2104	Human Anatomy	440	400	500	512	592
BISI 2124	Microbiology	548	560	660	784	628
TOTAL		**1208**	**1140**	**1332**	**1488**	**1440**

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

The average cost for Biology/Zoology degree and options for a 3-credit hour program course (including salary and benefits) is $6,852 (4-credit hour courses with lab average $7,902 with labs paid at $750 plus fringe.)

Total instructional cost for required program courses: $663,768
(84 4-credit hour courses in 5-year period)

Laboratories and other equipment used for program classes are also used for general education courses serving all majors so there are no other distinct costs associated with this degree.

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

Course Number	Course Name	Hours Generated				
		2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
BISI 1114	General Biology	4576	4644	4668	4704	4084
PHYS 1114	General Physics I	212	204	380	332	256
PHYS 1214	General Physics II	96	68	100	124	136
CHEM 1414	General Chem II	288	52	360	304	412
MATH 2103	Elementary Calc	21	9	18	45	42
Total		**5193**	**4977**	**5526**	**5509**	**4930**

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:

Faculty	Credential	Institution that granted degree
Bolz, Matt	M.Ed. in Educational Administration plus hours in Anatomical Sciences	Southwestern Oklahoma State University
Campbell, Kurt	D.V.M. in Veterinary Medicine	Oklahoma State University
Cnossen, Jack	PhD in Chemical Engineering	Worcester Polytechnic Institute
Davis, Crys	M.S. in Educational Leadership plus hours in Health Sciences	Oklahoma State University

Gard, Mary	M.S. in Botany	Oklahoma State University
Harmon, Scott	M.Ed. in Adult Education plus hours in Biological & Anatomical Science	University of Central Oklahoma
Harris, Mary Ann	Ph.D. in Animal Sciences	University of Arizona
Martin, Sherrie	M.S. in Agriculture	Oklahoma State University
McCoy, Mary Ann	M.S. in Biology	Alcorn State University
McGaw, Lisa	M.S. in Chemistry	West Texas A&M University
Moore, Tricia	M.S. in Animal Science	Oklahoma State University
Munro, Charmaine	Ph.D. in Chemistry	Oklahoma State University
Orr, Kristi	M.Ed. In Mathematics	University of North Dakota
Wood-Black, Frankie	Ph.D. in Physics	Oklahoma State University
Young, Eugene	M.S. in Biology	Fort Hays State University

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

Over the past 5 years, we have 2 alum graduate from veterinary schools and 2 more accepted at veterinary schools; 2 have completed a Sonography degree from OU; and 4 have graduated from dental hygiene programs.

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

No data, but in talking to our students and the success of students that have applied to professional schools, our students are well prepared to transfer to other institutions. This is reinforced by general transfer success rates at our partner institutions although the transfer information is not broken out by major. Annual articulation meetings with partner institutions also reinforce student success.

B.4 Duplication and Demand:

In cases where program titles imply duplication, programs should be carefully compared to determine the extent of the duplication and the extent to which that duplication is unnecessary. An assessment of the demand for a program takes into account the aspirations and expectations of students, faculty, administration, and the various publics served by the program. Demand reflects the desire of people for what the program has to offer and the needs of individuals and society to be served by the program.

B.5. Duplication and Demand Issues:

Address Duplication:

Not applicable—there is a high need for expanding allied health options in Oklahoma.

Address Demand:

Regional workforce data, as noted below, supports the need for allied health programs.

B.4.a. Detail demand from students, taking into account the profiles of applicants, enrollment, completion data, and occupational data:

B.4.b. Detail demand for students produced by the program, taking into account employer demands, demands for skills of graduates, and job placement data:

- Career opportunities for graduates with a degree in Biological Science include Dental Assistant, Horticulture, Laboratory Assistant, Research, Sales, and Wildlife Production.
- Career opportunities for graduates with a degree in the Pre-Medicine Option include Chiropractor, Dental Hygienist, Doctor, Funeral Services, Nutritionist, Occupational Therapist, Optometrist, Researcher, Physical Therapist, Sonographer, Radiology Technician, Physician Assistant, and Veterinarian.
- Career opportunities for graduates with a degree in Pre-Pharmacy include Pharmaceutical Research, Pharmaceutical Sales, and Pharmacy.

2016-2025 OK labor market projections

Animal Scientists - Bachelor's Degree
Median Salary - $26.49/hr.
Growth - 0%
10 year change in jobs – 0
Agriculture and Food Science Technician - Associate Degree
Median Salary - $16.05/hr.
Growth - 7%
10 year change in jobs - 24
Dietitians and Nutritionists - Bachelor's Degree
Median Salary - $24.96/hr.
Growth - 15%
10 year change in jobs – 120
Physicians (Pediatricians) – Doctorate Degree
Median Salary - $161,420
Growth – 7%
10 year change in jobs – 10
Pharmacists – Doctorate Degree
Median Salary - $117,350
Growth – 2.8%
10 year change in jobs - 110

B.4.c. Detail demand for services or intellectual property of the program, including demands in the form of grants, contracts, or consulting:

Not applicable at associate level

B.4.d. Detail indirect demands in the form of faculty and student contributions to the cultural life and well-being of the community:

Many graduates are employed within the local community.

B.4.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:

Many of the general education courses and program courses required for the degree and option of the Biological Science degree are offered via ITV or Internet. Additions over the past 5 years include General Biology (ITV and additional sections online), Human A&P (online), General Physics I (ITV), and General Chemistry I (currently developing online offering).

B.5 Effective Use of Resources:

Resources include financial support, (state funds, grants and contracts, private funds, student financial aid); library collections; facilities including laboratory and computer equipment; support services, appropriate use of technology in the instructional design and delivery processes, and the human resources of faculty and staff.

Private funds available through NOC Foundation have supported updated computer equipment and interfaces for use in science classes and one additional faculty member added to the division. Technology used for course delivery, including Blackboard and ITV, are supported for all divisions across the institution and annual training is provided.

*Low Producing Program Reviews follow a different format and template.

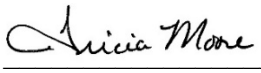
Institutional Program Recommendations: (describe detailed recommendations for the program as a result of this thorough review and how these recommendations will be implemented, as well as the timeline for key elements)

Recommendations	Implementation Plan	Target Date
• Monitor enrollment for BISI 1124, BISI 2104, BISI 2204, CHEM 1314, and CHEM 1414 to assess the need for additional sections across campuses.	Annual Review	2018 and ongoing
• Purchase new microscopes for Enid and Stillwater campuses.	Annual Review	2018 and ongoing

• Collect data of program classes in the fall if that is the only time they are taught on the campus.	Annual Review	2018

Summary of Recommendations:

	Department	School/College	Institutional
Possible Recommendations:			
Expand program (# of students)	• Addition of an option for Allied Health • Increase number of majors/graduates in Biology/Zoology by 3%		
Maintain program at current level	• Current recommendation for Pre-Med Option		

Division Chair  Date_____July 6, 2018_____
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