

Wichita State University

Associate of Science

Program Approval

I. General Information

A. Institution - Wichita State University

B. Program Identification

Degree Level: Associate

Program Title: Associate of Science

Degree to be offered: Associate of Science

Responsible Department or Unit: Fairmount College of Liberal Arts and Sciences

CIP Code: 30.1801 Natural Sciences

Modality: Traditional Classroom Instruction

Proposed Implementation Date: Fall 2024

Total Number of Semester Credit Hours for the Degree: 60

II. Clinical Sites: Does this program require the use of Clinical Sites? No.

III. Justification

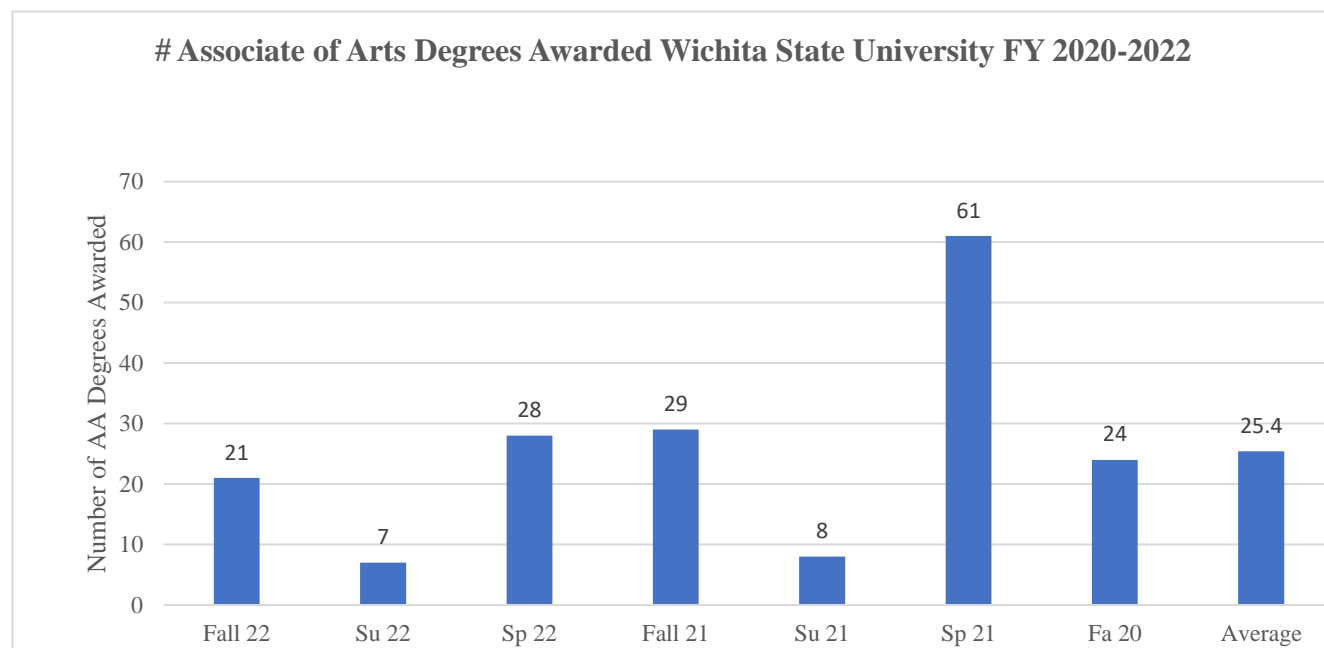
Wichita State University and the Fairmount College of Liberal Arts and Sciences request the approval to create the Associate of Science. If approved the degree will promote improvements in recruitment and retention at the university.

The Associate of Science (AS) degrees are two-year programs designed to provide skills beyond those typically acquired through secondary education. The AS emphasizes introductory and second-tier courses in Biology and Chemistry. The plan of study is rich in courses in English, Math, and Communication as these skills are essential for entry level work laboratory and scientific settings. Successful students will gain skills valuable in positions that require technical knowledge in the natural sciences, basic skills universally acknowledged as being desirable to employers, and the personal growth needed to be trainable and acquire new knowledge.

Students increasingly need ways to enhance their career prospects, but often feel unprepared for a four-year commitment to college. AS degrees at WSU is another opportunity for students to complete a degree with employment possibilities. This will provide pathways as they earn a four-year degree. Students who earn an associate degree as part of pursuing a four-year degree will have a sense of accomplishment and this positive experience with university level course work may support retention efforts of the university. Courses taken toward an associate degree will be suitable for a wide variety of majors. The associate of sciences curriculum plan with minimal substitutions will be appropriate for several other four-year degrees including Biology, Biochemistry, Chemistry, Forensic Sciences, Pre-Med, and Physics. The proposed associate of science would allow a student to complete the first two years of their degree and have several options that work toward degrees in the Liberal Arts and Sciences and Health Professions.

Wichita State University’s highlighting that it is the number one transfer destination <https://www.wichita.edu/admissions/undergraduate/transfertowsu/> in Kansas, students completing their associate degrees after arriving at Wichita State University will increase. The addition of the associate of science degree provides this opportunity for students to have a degree conferred after two years or 60 hours of college credits.

IV. Program Demand



There are 32 Associate of Science degrees offered through Kansas community colleges and four year institutions ([Program Search \(kansasregents.org\)](http://kansasregents.org)). Of the 32 AS degrees four offered the general area focus. These AS degrees are offered at Dodge City, Garden City, Hutchison, and Johnson County Community Colleges. Hays State University, Kansas State University, and Washburn University all offer Associates of Science degrees; however, these are focused on business, technology, or medical areas. These degrees range from 60 to 80 hours required. Wichita State University proposes a degree requiring 60 hours to support a cost-effective way for students to earn a degree.

Institution	Degree	Hours
Allen Community College	AA, AS, AGS Degrees (Transfer Degrees)	64
Barton Community College	Liberal Studies	60
Butler Community College	Associate Of Science (Transfer)	61
Cloud County Community College	AA, AS, AGS Degrees (Transfer)	62
Coffeyville Community College	Liberal Arts & Sciences	64
Colby Community College	Associate Of Science (Transfer Program)	62
Cowley Community College	AA, AS, AGS Degrees (Transfer Degrees)	62
Dodge City Community College	Liberal Arts & Sciences, General Studies & Humanities, Other	60
Fort Hays State University	Radiologic Technology	80
Fort Scott Community College	Liberal Studies	60
Garden City Community College	Liberal Arts & Sciences, General Studies, and Humanities, Other	60

Highland Community College	AA, AS, AGS Degrees (Transfer Degrees)	60
Hutchinson Community College	Liberal Arts & Sciences, General Studies, and Humanities, Other	60
Independence Community College	AS Transfer Program-Computer Science	64
Independence Community College	Liberal Studies	64
Johnson County Community College	General Sciences, Associate of Science	60
Johnson County Community College	Early Childhood Education	63
Kansas City Kansas Community College	AS (Transfer Degree)	60
Kansas State University	Applied Business	61
Kansas State University	Engineering Technology	62
Labette Community College	AS (Transfer Degree)	60
Neosho County Community College	AA, AS, AGS Degrees (Transfer Degrees)	64
Pratt Community College	AA, AS, AGS Degrees (Transfer Degrees)	64
Seward County Community College	AA, AS, AGS Degrees (Transfer Degrees)	64
Washburn University	Design Technology - Technical Drafting	66
Washburn University	Engineering-Physics	64
Washburn University	Health Information Technology	76
Washburn University	Industrial Technology	62
Washburn University	Occupational Therapy Assistant	68
Washburn University	Physical Therapist Assistant	70
Washburn University	Radiologic Technology	70
Washburn University	Respiratory Therapy	72

Students will be able to earn the AS in several ways. First, students entering Wichita State University as first year students may complete the AS in the same as students have earned the AA (Associate of Arts) in the past. They would need to complete the 60 hours of course work that included the First Year Seminar (FYS). The first-year seminar is needed for this group of students, the same as with others who are admitted to Wichita State University as first year students with less than 30 credits of college course work. See the course plan in section VII. B. of this proposal. Another group of students who might choose to earn the AS would be those students working on their four-year degree who have completed all the requirements for the degree but are currently completing a bachelors.

A. Survey of Student Interest

According to the Office of Planning and Analysis data, Wichita State University, the class of 2022, incoming undergraduates, degree-seeking full-time first-year students with under thirty college credit hours earned was 2,198 students. This provides an opportunity for students to receive an Associate of Sciences degree within one year. This degree has the potential to provide students with prospects for employment above minimum wage.

B. Market Analysis

Career opportunities in the natural sciences continue to grow, with expansions in health care and

associated industries. High-demand jobs in Kansas and Nationally will be those supporting healthcare systems, including technical sales, laboratory technicians, and health care assistants. There are growing fields, such as laboratory technicians, environmental sciences technician, food sciences, veterinary assistants, physical therapist assistants, as well as other opportunities. Each of these potential employment options for those with the AS requires employees with rudimentary laboratory skills.

- **Laboratory Technician** - Perform routine medical laboratory tests for the diagnosis, treatment, and prevention of disease. May work under the supervision of a medical technologist. \$23.08 hourly, \$48,000 yearly up to \$27.79 hourly, \$57,800 annually 9% growth in Kansas in the next 10 years and 7% up nationally, <https://www.onetonline.org/link/summary/29-2012.00>
- **Environmental Science and Protection Technicians** check the environment and investigate sources of pollution and contamination. <https://www.bls.gov/ooh/life-physical-and-social-science/chemical-technicians.htm#tab-8>
- **Food Science Technician** - Work with food scientists or technologists to perform standardized qualitative and quantitative tests to decide physical or chemical properties of food or beverage products. Includes technicians who assist in research and development of production technology, quality control, packaging, processing, and use of foods. \$23.43 hourly, \$48,740 annual \$22.40 hourly, \$46,590 annual 9% Kansas growth next 10 years and 8% nationally. <https://www.onetonline.org/link/summary/19-4013.00>
 - Median pay as reported by the Bureau of Labor Statistics is \$44,770 per year and projected job growth 2020-2030 is 8%.
- **Chemical Technicians** - Conduct chemical and physical laboratory tests to assist scientists in making qualitative and quantitative analyses of solids, liquids, and gaseous materials for research and development of new products or processes, quality control, maintenance of environmental standards, and other work involving experimental, theoretical, or practical application of chemistry and related sciences. \$22.55 hourly, \$46,910 annual to \$23.56 hourly, \$48,990 annual, 4% growth in Kansas next 10 years and 5% nationally. <https://www.onetonline.org/link/summary/19-4031.00>
 - Whereas the bureau of labor statistics has a higher projection of Chemical technicians conduct laboratory tests to help scientists analyze the properties of materials median pay is \$48,990 per year 2020-2030 job growth is 5% average is 8% <https://www.onetonline.org/link/summary/19-4031.00>
- **Medical Secretaries and Administrative Assistants** - Perform secretarial duties using specific knowledge of medical terminology and hospital, clinic, or laboratory procedures. Duties may include scheduling appointments, billing patients, and compiling and recording medical charts, reports, and correspondence. \$17.59 hourly, \$36,590 annual to \$18.01 hourly, \$37,450 annual 8% project growth in Kansas and Nationally in the next 10 years. <https://www.onetonline.org/link/summary/43-6013.00>
- **Cardiovascular Technologists and Technicians** - Conduct tests on pulmonary or cardiovascular systems of patients for diagnostic, therapeutic, or research purposes. May conduct or assist in electrocardiograms, cardiac catheterizations, pulmonary functions, lung ability, and similar tests. \$28.61 hourly, \$59,500 annual to \$29.12 hourly, \$60,570 annual between 5 and 6% in Kansas and Nationally expected growth in the next 10 years. <https://www.onetonline.org/link/summary/29-2031.00>
- **Medical and Clinical Lab Technologist** - Perform complex medical laboratory tests for diagnosis, treatment, and prevention of disease. May train or supervise staff. \$23.08 hourly, \$48,000 annual to \$27.79 hourly, \$57,800 annual 9% Kansas 7% Nationally <https://www.onetonline.org/link/summary/29-2011.00>

- **Nuclear Medicine Technologists** - Prepare, administer, and measure radioactive isotopes in therapeutic, diagnostic, and tracer studies using a variety of radioisotope equipment. Prepare stock solutions of radioactive materials and calculate doses to be administered by radiologists. Subject patients to radiation. Execute blood volume, red cell survival, and fat absorption studies following standard laboratory techniques. \$29.71 hourly, \$61,790 annual to \$37.86 hourly, \$78,760 annual 5% Kansas 2% Nationally growth projected in the next 10 years. <https://www.onetonline.org/link/summary/29-2033.00>
- **Forensic Lab Technician** - Collect, identify, classify, and analyze physical evidence related to criminal investigations. Perform tests on weapons or substances, such as fiber, hair, and tissue to decide the importance to an investigation. May testify as expert witnesses on evidence or crime laboratory techniques. May serve as specialists in area of expertise, such as ballistics, fingerprinting, handwriting, or biochemistry. No Data Available for Kansas however with the ATF coming to campus this may be a good starter degree for students in the FS program needing a job for college \$ and experience. Up to \$29.78 hourly, \$61,930 annual and with 11% national growth in 10 years. <https://www.onetonline.org/link/summary/19-4092.00>
- **Veterinary Assistants and Laboratory Animal Caretakers** - Feed, water, and examine pets and other nonfarm animals for signs of illness, disease, or injury in laboratories and animal hospitals and clinics. Clean and disinfect cages, work areas, and sterilize laboratory and surgical equipment. May provide routine postoperative care, administer medication orally or topically, or prepare samples for laboratory examination under the supervision of veterinary or laboratory animal technologists or technicians, veterinarians, or scientists. \$11.60 hourly, \$24,120 annual to \$14.32 hourly, \$29,780 annual and projected growth of 16% in Kansas to 19% Nationally in expected growth in the next 10 years. <https://www.onetonline.org/link/summary/31-9096.00>
- **Physical Therapist Assistants** - Assist physical therapists in providing physical therapy treatments and procedures. May, in accordance with state laws, assist in the development of treatment plans, conduct routine functions, document the progress of treatment, and change specific treatments in accordance with patient status and within the scope of treatment plans established by a physical therapist. Generally, requires formal training. \$28.76 hourly, \$59,820 annual to \$29.42 hourly, \$61,180 annual There is a 27% Kansas growth expected and 24% growth nationally in next 10 years. <https://www.onetonline.org/link/summary/31-2021.00>

For agencies looking to fill vacant positions, might prefer a candidate with a Bachelor of Science (BS) degree would consider strong AS degree recipients as well. It would be imprudent to oversell the value of an AS degree, but certainly AS degree holders have greater opportunities for employment in higher wage positions than those without a college degree. AS degrees tend to lead to BS degrees and the current proposal includes a two plus two possibilities suitable for disciplines in biology or chemistry. The proposed AS is a clear pathway to college for high school students through dual and concurrent credit courses.

The value of an educated public to the welfare and economy of Kansas cannot be overstated. Associate degrees are an important avenue towards fulfilling these goals. However, in 2019 the state was awarding about eight thousand degrees fewer than targeted. WSU had a modest gap of 150 degrees in 2019. Over the last decade, associate degrees in Kansas have increased by 2500, while BS degrees awarded remained flat. The expectation is the AS will increase in degrees awarded each year. The current proposal not only opens opportunities for increased associate degrees to be awarded.

V. Projected Enrollment

The Initial Three Years of the Program of Wichita State University Students

Year	Headcount Per Year		Sem Credit Hours Per Year	
	Full- Time	Part- Time	Full- Time	Part- Time
Implementation	15	0	450	0
Year 2	30	0	900	0
Year 3	30	0	900	0

Note: The Associate of Science degree is both for prospective and current students, it may be that students pursuing a bachelor's degree at Wichita State will choose to apply for their AS degree, all students earning a Bachelors will be eligible for the AA (already exists at Wichita State University) or Associate of Science degree.

VI. Employment

Employment opportunities for graduates of the AS degree are detailed in section IV. (B). The AS provides students with the possibility of obtaining a degree in a STEM field (Science Technology Engineering or Math). This will allow students who earn the AS to enter several areas of health care. This market is growing rapidly with needs for entry-level health care assistants and orderlies, technical and medical salespersons, and laboratory technicians. In addition, graduates can use their technical knowledge for writing careers as technical writers, copyeditors, freelance authors, or science journalists.

VII. Admission and Curriculum

A. Admission Criteria

First-year students are assured admission to Wichita State if they meet the following:

1. Have a cumulative 2.25 or higher GPA on a 4.00 scale, OR
2. Achieve an ACT composite of 21 or higher OR a minimum combined SAT ERW+M score of 1060 (test optional for admission)

And, if applicable, achieve a 2.0 GPA on all college credit taken in high school.

Students who do not meet the guaranteed admission requirements are still encouraged to apply. The application will be reviewed individually.

1. Students who graduated from a non-accredited high school or were homeschooled must: Achieve an ACT of 21 or higher, OR a minimum combined SAT ERW+M score of at least 1060, have a cumulative 2.25 or higher GPA on a 4.00 scale. If students enroll in college courses while in high school, they must also achieve a 2.00 GPA or higher in those courses.

If a student obtained a GED, they must:

1. For GED tests from 2002-2013: Have a minimum score of 510 on each sub test and an overall score of 2550 to be admitted.
2. For GED tests from 2014 and on: Have a minimum score of 150 on each sub test and an overall score of 680 to be admitted.

Curriculum

The Associate of Science degree requires completion of a minimum of 60 credit hours including 15 credit hours in residency at Wichita State University and 48 of the 60 credit hours from liberal arts and sciences departments. This degree must include the 34 credit hours required in the university's general education program (described in the General Education section of this catalog), and students must be enrolled in one of the university's degree-granting colleges. An overall grade point average of 2.000 is required for both the degree and for WSU academic work.

Courses	Title	Hours
ENGL 101	College English I	3
ENGL 102	College English II	3
COMM 111	Public Speaking	3
MATH 111 or Math 242	College Algebra Calculus I	3 - 5
MATH 123 or STAT 370	College Trigonometry or Elementary Statistics	3
Select three of the following		
BIOL 210 or BIOL 220	General Biology I Introduction to Microbiology	4
CHEM 211 or CHEM 103	General Chemistry I Introductory General, Organic and Biochemistry	5
Math 243	Calculus II	5
PHYS 213 or PHYS 313	General College Physics I (or PHYS 313 and 315) Physics for Scientists I	5
HS 400	Introduction to Pathophysiology	4
Choose one:		
BIOL 211 or BIOL 223 or HS 290	General Biology II Human Anatomy and Physiology Foundational Human Anatomy and Physiology	4 -5
CHEM 212	General Chemistry II	5

PHYS 214 or PHYS 314 and PHYS 316	General College Physics II Physics for Scientist II University Physics Lab II	5
Other required courses:		
FYS if required or other General Education Course		3
Fine Arts or Humanities General Education Course first subject		3
Fine Arts or Humanities General Education Course second subject		3
Social and Behavioral Science General Education Course first subject		3
Social and Behavioral Science General Education Course second subject		3
General Education Diversity Course		3
Elective Courses Hours after consultation with an academic advisor Note: Engineering take higher level MATH (3) or College of Health Professions take HS 301 (3)		8-12
Total		60

Year 1: Fall

ENGL 101	College English 1	3
FYS	First-Year Seminar (if required or other general ed elective)	3
MATH 111 or MATH 242	College Algebra Calculus I	3-5
CHEM 211 or CHEM 103	General Chemistry I Introductory General, Organic and Biochemistry	5

Year 1: Spring

ENGL 102	College English 2	3
MATH 123 or STAT 370 or MATH 243	Trigonometry Elementary Statistics Calculus II	3 - 5
BIOL 210 or BIOL 220	General Biology I Introduction to Microbiology	4
COMM 111	Public Speaking	3
GEN ED	Fine Arts/Humanities first subject	3

Year 2: Fall

PHYS 213 or PHYS 313	General College Physics Physics for Scientist I	5
BIOL 211 or BIOL 223 or HS 290 CHEM 212 or PHYS 214	General Biology II Human Anatomy and Physiology Foundational Human Anatomy and Physiology General Chemistry II College Physics	4-5

GEN ED	Fine Arts/Humanities second subject	3
GEN ED	Social and Behavioral Science first subject	3

Year 2: Spring

GEN ED	Social and Behavioral Science second subject	3
GEN ED	Diversity Course	3
ELECTIVES	To reach 60 hours	7-11

Total hours

60

B. VIII. Core Faculty

The proposed AS will use existing faculty to teach the required courses. These instructors are associated with bachelor’s degrees currently being offered at Wichita State University. No new faculty or additional courses are being proposed. The degree requirements exist within other degrees and curricular offerings.

Faculty Name	Rank	Highest Degree	Tenure Track Y/N	Academic Area of Specialization	FTE to Proposed Program
N/A					

IX. Expenditure and Funding Sources

A. Expenditures	First FY	Second FY	Third FY
Personnel – Reassigned or Existing Positions			
Existing Faculty Instruction (regular course load)	\$0	\$0	\$0
Fringe Benefits (total for existing faculty)	\$0	\$0	\$0
Fringe Benefits (total for adjuncts)	\$0	\$0	\$0
Total Existing Personnel Costs	\$0	\$0	\$0
Personnel – New Positions			
Administrators Advising Dual Advisor	\$42,000	\$42,000	\$42,000
Fringe Benefits	\$11,000	\$11,000	\$11,000
Other Personnel Costs	\$0	\$0	\$0
Total Existing Personnel Costs–New Positions	\$53,000	\$53,000	\$53,000
Start-Up Costs – One-Time Expenses			
Physical Facilities: Construction or Renovation	\$0	\$0	\$0
Total Start-Up Costs	\$0	\$0	\$0
			\$0
Operating Costs – Recurring Expenses			\$0
Supplies/Expense (Cards Letter Head Advertisement)	\$2,500	\$2,500	\$2,500
Equipment/Technology	\$0	\$0	\$0
Total Operating Costs	\$2,500	\$2,500	\$2,500
Grand Total Costs	\$55,500	\$55,500	\$55,500
FUNDING SOURCES – Through those in WSU Classes and not the SLASA program through USD	1 st FY Fifteen new	2 nd FY Fifteen new	3 rd FY Fifteen new

266.	students	students+15=30	students 15, 15 graduate = 30
B. Tuition/State Funds (\$228)	\$102,600	\$205,200	\$205,200
\$667.41 per student per semester (\$1,334.82 annual)	\$20,022	\$40,044	\$40,044
Mandatory Student Fees \$20.75 per credit hour	\$9,338	\$18,676	\$18,676
LAS Student Fee \$7.75 per credit hour	\$3,487	\$6,975	\$6,975
<i>Grand Total Funding</i>	\$135,447	\$270,894	\$270,894
Projected Surplus/Deficit (+/-)	+\$79,947	+\$224,394	+\$224,394

X. Expenditures and Funding Sources Explanations

A. Expenditures

Personnel – Reassigned, Existing, & New Positions

The program will be administered in the same manner as the current associate in arts (AA). The AA is currently administered and advised in the Fairmount College of Liberals Arts and Sciences advising center.

B. Revenue: Funding Sources

Tuition and fees will be the primary source of funding for the program. No new expenditures or funding sources are expected or needed.

C. Projected Surplus/Deficit

The proposed new AS degree program is not projected to have a budget deficit.

XI. References

Kansas Board of Regents. [Program Search \(kansasregents.org\)](https://www.kansasregents.org)

One Net – Data Base - O*NET - <https://www.onetonline.org/link/summary/31-2021.00>

U.S. Bureau of Labor Statistics:(2022, May); Occupational Outlook Handbook. Retrieved from <https://www.bls.gov/ooh/media-and-communication/interpreters-and-translators.htm>

Wichita State University Web Page Transfer Student Information Page,
<https://www.wichita.edu/admissions/undergraduate/transfertowsu/>