

# PARAMEDIC SCIENCE

ASSOCIATE OF  
APPLIED SCIENCE



# SOUTHEAST TECH

Southeast Technical Institute  
2320 N Career Ave | Sioux Falls, SD 57107





# TABLE OF CONTENTS

## Contents

Table of Contents	3
Executive Summary	4
Identification and Description of the Programs	4
Objectives and Purpose of the Program	5
Methods of Attaining the Objectives of the Program	5
Description of Labor Market Demands of the United States and State of South Dakota	
Student Needs and Industry Support	6
National Data	6
State/Regional Data	6
Student Needs	6
Industry Support	6
Population to be Served by the Program	7
Program Capacity	7
Projected Three-Year Budget Plan	7
Salaries/Benefits/FTE/Equipment	7
Program Competencies and Entry and Exit Points of Sub-Occupations	8
Program Competencies	8
Entry and Exit Points	8
Statement of Non-Duplication	8
Curriculum Design and Research	9
Wage Factor	9
CIP Code	9
Emergency Medical Technology/Paramedic - CIP Code: 51.0904	9
Appendix A - Program Course List and Semester Layout	10
AAS in Paramedic Science	10
Program Course List with Descriptions	11
Appendix B - Letters of Support	13

# PARAMEDIC SCIENCE

## Associates of Applied Science

---

### Executive Summary

Southeast Tech was approached by Sanford USD Medical Center and Hospital and The University of South Dakota in the fall of 2019 to assist with meeting the ever-growing needs of certified and trained paramedics in South Dakota. Sanford USD Medical Center and Hospital, a division of Sanford Health, has been the leading provider of health services in South Dakota. Sanford Health operates 44 medical centers, 428 clinics, and over 200 senior living facilities covering 26 states. The University of South Dakota currently has a Bachelor of Science with Paramedic Specialization but is unable to continue support of the program. USD has made the decision to teach out the baccalaureate program. Southeast Tech is being asked to assume the program at the associate's level to provide options for students to earn both certification and an associate degree in the field of paramedic science.

### Identification and Description of the Programs

The Paramedic Technician at the associate degree level stresses the integration of knowledge and skills required to competently perform pre-hospital advanced life support. Graduates are eligible for national certification and South Dakota licensure as an EMT-Paramedic. Paramedic students will learn to manage emergency patient care and treatment by performing comprehensive patient assessments, using critical thinking skills, providing advanced cardiac life support, administering various medications and performing advanced skills and interventions. Southeast Tech's Paramedic Technician Associate Degree program prepares students for National Registry Certification as a Paramedic, which is required for licensure in the state of South Dakota. Must be a licensed EMT Basic to enroll in the Paramedic Technician program. Southeast Tech will assume an accredited paramedic program by the Commission on Accreditation of Allied Health Education Programs ([www.caahep.org](http://www.caahep.org)) upon the recommendation of the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP).

## Objectives and Purpose of the Program

The primary objective of this program is to provide qualified paramedics for the health systems in and around Sioux Falls. This objective will be met by providing an education that prepares the graduate to work in multiple settings through a curriculum that meets several industry needs.

A paramedic may perform the following duties:

- Meet state and national competencies listed for paramedic credentialing.
- Demonstrate professional behavior.
- Communicate effectively with others.
- Demonstrate paramedic skills associated with established standards and procedures for a variety of patient encounters.
- Integrate pathophysiological principles and assessment findings to provide appropriate patient care.
- Prepare for incident response and EMS operations

## Methods of Attaining the Objectives of the Program

The Paramedic Technician associate degree will be offered in a blended manner in partnership with Sanford USDMC. Either students will attend live classes, in-person or via webinar, at Sanford Steven's Center and will meet lab requirements by attending in-person lab sessions at Sanford Steven's Center. Clinical hours will be completed at in-state, contracted sites.

The program consists of classroom lectures, practical skills labs, laboratory simulations and hospital and pre-hospital clinical experiences. Additional certifications in Advanced Cardiac Life Support, Pre-Hospital Trauma Life Support and Pediatric Advanced Life Support are offered, as well as Advanced Medical Life Support competencies. Students who successfully complete the program, with a grade point of 2.0 or better in all required courses, will be eligible to take the National Registry of EMT's cognitive and psychomotor examinations for paramedic level of certification.

Paramedic Technicians can find a career in a variety of healthcare settings such as ambulance services, dispatch centers, first responder units, hospitals/emergency departments, industrial safety departments, rescue squads and urgent care facilities.

# Description of Labor Market Demands of the United States, State of South Dakota, Student Needs, and Industry Support

## National Data

According to the 2018–2028 National Bureau of Labor Statistics, there is an expected increase of 18.7% for Emergency Medical Technicians and Paramedics. See table below.

National Bureau of Labor Statistics 2018–2028			
Position	Employees 2018	Employees 2028	2018–2028 %
29-2041 Emergency medical Technicians and Paramedics	262,100	280,800	18.7%

## State/Regional Data

According to the 2018–2028 South Dakota Occupational Employment Projections, there is an expected increase of 1.10% for Emergency Medical Technicians and Paramedics. See table below.

SD Bureau of Labor Statistics 2016–2026			
Position	Employees 2016	Employees 2026	2016–2026 %
29-2041 Emergency Medical Technicians and Paramedics	985	1099	1.10%

## Student Needs

This program will provide students with an opportunity to enter an expanding industry that has many different entry points, areas for growth and training that meets industry need. The majority of students will enter industry as a registered paramedic who will be able to provide support to local fire and police departments, medical facilities and serve the communities they live in to provide emergency medical services in rural areas.

Upon receipt of the South Dakota Board of Technical Education approval, Southeast Technical Institute will accept up to 20 students for the first class beginning January 2021. The marketing campaign to recruit students will include web, print, digital marketing and vendor attendance at EMS education opportunities as well as working with Sanford and local EMS agencies.

## Industry Support

Southeast Technical Institute has consulted with Sanford Health and the University of South Dakota, in addition to local government agencies. There is support and a need for Southeast Tech to develop and offer a paramedic program in Sioux Falls. The program would help fill a huge void in the region and provide opportunities for rural communities in Southeast South Dakota to develop medical personnel to assist in serving local communities.

## Population to be Served by the Program

This program will be available to all students who successfully meet Southeast Technical Institute admission criteria established for the program. No restriction will be made regarding race, creed, gender or age.

Southeast Technical Institute will recruit from a variety of backgrounds, including both traditional and non-traditional students.

## Program Capacity

Starting Semester	Delivery Format	Capacity
Spring 2021	Hybrid Evening	20
Spring 2022	Hybrid Evening / Traditional Day	40

## Projected Three-Year Budget Plan

BUDGET PROJECTIONS			
Year	FY 20	FY 21	FY 22
Instructor Salaries / Benefits	\$10,000	\$10,000	\$10,000
Staff Travel	\$0	\$0	\$0
Supplies / Materials	\$0	\$0	\$0
Equipment Purchases	\$0	\$0	\$0
Accreditation Fees	\$20,000	\$10,000	\$10,000
Software / Books / Fees	\$500	\$500	\$500
Training	\$10,000	\$10,000	\$10,000
<b>Totals</b>	<b>\$40,500</b>	<b>\$30,500</b>	<b>\$35,500</b>

## Salaries/Benefits/FTE/Equipment

Southeast Tech will utilize adjunct faculty, employed by Sanford Health, to teach the program specific courses. All general education courses will be taught by Southeast Tech faculty. Southeast Tech will utilize a Memorandum of Understanding with Sanford Health to outline responsibilities for delivery of the educational program at Sanford's facility and using Sanford's medical staff. Southeast Tech will not need to invest any financial resources into the delivery of the paramedic program outcomes through construction of new facilities or major equipment purchases.

Southeast Tech will work in partnership with Sanford Health in the delivery of the paramedic program. The program core courses will be delivered on site at Sanford's state-of-the-art training facility and will utilize Sanford medical staff.

# Program Competencies and Entry and Exit Points of Sub-Occupations

## Program Competencies

Terminal Competencies determined by the National Highway Traffic Safety Administration to include:

- Demonstrate the administration of CPR and Automated External Defibrillator (AED) on adults and children using methods that meet current BLS standards.
- Explain and demonstrate common techniques of emergency medical care, including assessment and stabilization of the patient.
- Identify and treat emergencies related to basic electrocardiograph (ECG) arrhythmias according to the American Heart Association standards and guidelines and local protocol.
- Perform the procedures unique to pediatric and neonatal transport.
- Describe the actions, indications, contraindications, precautions, side effects and dosages of the drugs included in the current approved Paramedic drug box.
- Apply the procedures of identifying and treating shock, including IV fluid therapy.
- Identify and treat behavioral emergencies.
- Identify and treat medical emergencies including diabetic, environmental, toxicological, obstetric and genitourinary emergencies.
- Administer parenteral medications.
- Identify and treat respiratory emergencies.
- Identify and treat cardiovascular emergencies including (ECG) electrocardiographic interpretation.
- Classify the types of medical emergencies and identify appropriate treatment protocols.
- Perform a Primary and Secondary Survey including medical history.
- Apply the procedures of identifying and treating shock, including IV fluid therapy for patients in emergency situations.

## Entry and Exit Points

Entry Point: Starting in the Spring 2021 semester. Entry will happen at the start of the Spring semester each academic year.

Exit Point: Graduation with an associate degree after five consecutive semesters. Graduates will be eligible to attempt the National Registry of Emergency Medical Technicians certification exam.

## Statement of Non-Duplication

The Associate of Science in Paramedic Science is an existing academic program that is offered by Western Dakota Technical Institute and as a diploma at Lake Area Technical Institute in South Dakota. Geographically, Western Dakota Technical Institute is able to serve students in the western side of the state while Southeast Technical Institute can better serve students in the southeastern portion of the state. Lake Area Technical Institute has a strong fire-based foundation to their program and only offer an AAS degree in Med/Fire Rescue. For those students seeking paramedic only education, a paramedic certificate is offered. Southeast Technical Institute would offer an AAS degree for those students that do not wish to pursue fire-based education.

## Curriculum Design and Research

Southeast Technical Institute designed a tentative curriculum after an extensive review consisting of curriculum searches, academic review of competencies and discussion with industry professionals. The curriculum is shown in Appendix A.

## Wage Factor

Data from the South Dakota Department of Labor Occupational Wage Estimates for May 2018 positions annual wage range from \$10.48 to \$22.26 for the 10th to 90th percentile. The mean annual wage for May 2018 was \$15.56. See table below:

South Dakota Department of Labor Occupational Wage Estimates 2018 Data			Percentile				
Occupation	Workers	Avg. Wage	10th	25th	50th	75th	90th
29-2041 Emergency medical Technicians and Paramedics	960	\$15.56	\$10.48	\$12.36	\$14.59	\$18.73	\$22.26

Data from the National Department of Labor positions the May 2018 annual wage range from \$10.94 to \$28.19 for the 10th to 90th percentile. The mean annual wage for May 2018 was \$18.15. See table below:

National Department of Labor Occupational Wage Estimates 2017 Data			Percentile				
Occupation	Workers	Avg. Wage	10th	25th	50th	75th	90th
29-2041 Emergency Medical Technicians and Paramedics	257,210	\$18.15	\$10.94	\$13.12	\$16.50	\$21.46	\$28.19

## CIP Code

### Emergency Medical Technology/Paramedic - CIP Code: 51.0904

**Definition:** A program that prepares individuals, under the remote supervision of physicians, to recognize, assess, and manage medical emergencies in pre-hospital settings and to supervise ambulance personnel. Includes instruction in basic, intermediate and advanced EMT procedures; emergency surgical procedures; medical triage; rescue operations; crisis scene management and personnel supervision; equipment operation and maintenance; patient stabilization, monitoring and care; drug administration; identification and preliminary diagnosis of diseases and injuries; communication and computer operations; basic anatomy, physiology, pathology and toxicology; and professional standards and regulations.

# Appendix A – Program Course List and Semester Layout

## AAS in Paramedic Science

Prefix	Name	Credits
MEDXXX	Paramedic Fundamentals	2 Credits
MEDXXX	Patient Assessment Lab	1 Credits
MEDXXX	Introduction to Medication Administration	2 Credits
MEDXXX	Advanced Airway Management	2 Credits
MEDXXX	Paramedic Lab I	1 Credits
MEDXXX	Medical Emergencies	4 Credits
MEDXXX	EMS Clinical I	2 Credits
MEDXXX	Paramedic Lab II	1 Credits
MEDXXX	Cardiology	3 Credits
MEDXXX	EMS Clinical II	2 Credits
MEDXXX	Paramedic Lab III	1 Credits
MEDXXX	Trauma Emergencies	4 Credits
MEDXXX	Special Populations	2 Credits
MEDXXX	Operations	2 Credits
MEDXXX	EMS Clinical III	2 Credits
MEDXXX	Paramedic Lab IV	1 Credits
MEDXXX	Paramedic Professional Development	2 Credits
MEDXXX	Comprehensive Scenarios Lab	1 Credits
MEDXXX	EMS Specialties	2 Credits
MEDXXX	NREMT Prep	2 Credits
MEDXXX	Paramedic Internship	5 Credits

## General Education Requirements

**16 Credits**

### English

**3 Credits**

ENGL100	Communication in the Workplace <u>OR</u>	3 Credits
ENGL101T	Composition	3 Credits

### Oral communication

**3 Credits**

SPCM101T	Fundamentals of Speech	3 Credits
----------	------------------------	-----------

### Mathematics

**3 Credits**

MATH100	College Math <u>OR</u>	3 Credits
MATH101	Introductory Algebra <u>OR</u>	3 Credits
MATH114T	College Algebra	3 Credits

### Natural Science

**4 Credits**

HC118	Anatomy & Physiology with Lab	4 Credits
-------	-------------------------------	-----------

### Humanities

**3 Credits**

PSYC100	Psychology at Work <u>OR</u>	3 Credits
PSYC101T	General Psychology <u>OR</u>	3 Credits
PSYC105	Child Psychology <u>OR</u>	3 Credits
SOC150T	Social Problems <u>OR</u>	3 Credits
SOC250T	Courtship and Marriage	3 Credits

## Program Course List with Descriptions

### **MEDXXX- Paramedic Fundamentals**

This course will cover the general scope of practice of a paramedic and explain the roles and responsibilities required therein. The history of EMS as well as the paramedic's role in society today, basic life-span development and medical legal aspects of a paramedic's job are addressed.

### **MEDXXX - Patient Assessment Lab**

This course will address a regimented and methodical way of assessing the patient in both the medical and trauma scenario to identify problems a patient is facing.

### **MEDXXX - Introduction to Medication Administration**

This course will introduce the student to the principles and techniques of medication administration, IV therapy and basic drug calculations.

### **MEDXXX - Advanced Airway Management**

This course takes an in-depth look at the human airway anatomy. Upon completion, the student will have a thorough understanding of the knowledge and technique associated with managing a patient's failing airway.

### **MEDXXX - Paramedic Lab I**

This laboratory course covers medication administration, IV therapy, airway management, drug calculations and advanced skills associated with Advanced Life Support (ALS). The student will demonstrate competent assessment using clinical simulation and continue to develop advanced airway skills.

### **MEDXXX - Medical Emergencies**

This course introduces the medical side of patient ailments. Topics include medical complaints involving all body systems and their emergencies. Each of the systems will first be reviewed in the normal state then common emergencies will be addressed along with differentials, treatment plans and pharmacological interventions.

### **MEDXXX - EMS Clinical I**

The paramedic candidate will apply knowledge gained in previous courses to clinical experiences in the Emergency Room and EMS ride-along shifts.

### **MEDXXX - Paramedic Lab II**

This laboratory course covers medication administration, IV therapy, airway management and drug calculations. The student will demonstrate competent assessment using clinical simulation for medical complaints.

### **MEDXXX - Cardiology**

Cardiac emergencies are some of the most serious and common emergencies in the pre-hospital setting requiring the Paramedic candidate to become an expert in Emergency Cardiology. The student will take an in-depth look at the anatomy of the heart, then master ECGs and use that information to appropriately treat his or her patient.

### **MEDXXX - EMS Clinical II**

The paramedic candidate will apply knowledge gained in previous courses to clinical experiences in the Emergency Room, Respiratory Care and EMS ride-along shifts.

### **MEDXXX - Paramedic Lab III**

This laboratory course covers medication administration, IV therapy, airway management, drug calculations and advanced skills associated with Advanced Life Support (ALS). The student will master assessment using clinical simulation and continue to reach proficiency on IV therapy and advanced airway skills.

### **MEDXXX - Trauma Emergencies**

This course takes an in-depth look at traumatic injuries and their effects on the human body. The student will learn a mastery of fluid resuscitation as well as body kinematics and their relationship to different injury accidents experienced by EMS trauma patients.

### **MEDXXX - Special Populations**

This course is an in-depth look at populations with varying needs to include pediatrics, obstetrics, geriatrics, long-term care patients and special needs.

### **MEDXXX - Operations**

The course focuses on the knowledge, skills and attitudes essential to function as a paramedic with other departments within emergency services. The student will learn the principles of operating an emergency vehicle.

### **MEDXXX - EMS Clinical III**

The student will experience clinical learning in the ICU, ER, OB unit, CCU, CVOR, ALS ride-along and PICU.

### **MEDXXX - Paramedic Lab III**

This laboratory course covers medication administration, IV therapy, airway management, drug calculations and advanced skills associated with Advanced Life Support (ALS). The student will master assessment using clinical simulation and continue to reach proficiency on IV therapy and advanced airway skills.

### **MEDXXX - Paramedic Professional Development**

The course examines professionalism and professional behaviors as they apply to EMS practitioners and their roles within the Emergency Response team as a whole.

### **MEDXXX - Comprehensive Scenarios Lab**

This course is a final laboratory assessment of the student's ability to successfully carry out the skills required of a paramedic.

### **MEDXXX - EMS Specialties**

This course completes AHA and NAEMT card courses to include ACLS, PALS, PHTLS and AMLS.

### **MEDXXX - NREMT Preparation**

This course is the student's opportunity to complete comprehensive exams to prepare for the NREMT final test.

### **MEDXXX - Paramedic Internship**

Students are required to complete all clinical hours from previous semesters prior to scheduling their internship shifts. Internship consists of 14 shifts, generally completed with two different preceptors. Students will have completed their internship at the conclusion of all of their hours AND after gaining two signatures indicating that they have demonstrated entry-level competence. Students are allowed four total shifts for familiarization in which they are not expected to assume the team leader role. Team leader is defined as directing all aspects of patient care and control of the scene. Students are still expected to participate in patient care, answer questions asked by the preceptor and formulate a plan for patient care that they should be prepared to discuss once the call has ended.

## Appendix B – Letters of Support

**McCook County Emergency Manager**

BJ Stiefvater

**City of Mitchell Department of Public Safety**

Marius Laursen

**City of Vermillion Fire EMS Department**

Matthew Callahan



Vermillion Fire EMS Department  
25 Center Street • Vermillion, SD 57069  
Ph: 605.677.7098 • Fax: 605.677.7054  
[www.vermillion.us](http://www.vermillion.us)

---

April 7<sup>th</sup>, 2020

To Whom It May Concern;

This letter is written in support of the Sanford Paramedic Program and their request to change their alignment for school affiliations to South East Technical Institute. The Sanford Paramedic Program has been around for several years and has produced high quality, street ready paramedics.

One of the biggest concerns in South Dakota are getting providers adequately trained and done so at a reasonable price. With many agencies being of the volunteer ranks departments cannot afford to send people to high dollar programs. They need quality education at a reasonable price.

I completely support this move to South East Technical Institute. If you have any questions please feel free to contact me at [matte@cityofvermillion.com](mailto:matte@cityofvermillion.com) or at 605-677-7098.

Respectfully,

A handwritten signature in black ink, appearing to read "Matt R. Callahan".

Matthew R. Callahan NR-P, LI  
Fire Chief



To whom it may concern,

This letter is in support for the development of an Associate's Degree Paramedic Program at Southeast Technical Institute in collaboration with Sanford Health.

The EMS profession is encountering a staffing shortage across the Nation, State and region. This shortfall of EMS providers and Paramedics imposes a hardship for employers while attempting to cover essential needs and services in rural communities.

A degree based paramedic program in Sioux Falls will provide professional skills and education in addition to satisfying the paramedic curriculum. A local degree based paramedic program provides resources and educational options for students that reside in rural areas.

Having a local degree based paramedic program provides our department with local recruitment opportunities and staff referrals for fulfilling paramedic employment needs.

Feel free to contact me for additional information or questions that apply to this letter of support should the need arise.

Sincerely,

Marius Laursen  
Assistant Chief of Fire & EMS  
Mitchell Department of Public Safety  
201 W. 1<sup>st</sup> Ave  
Mitchell, SD 57301  
605-995-8400



Dear Southeast Technical Institute,

As both the EMS Director and Emergency Manager for McCook County I am writing this letter to express my support of the Sanford EMT/Paramedic programs. Their program is desperately needed to help solidify the ability of rural South Dakota to continue the high quality of care that is ever crucial in an area with longer than normal transport times where advanced care is even more essential.

I have had the privilege of working with the both the Staff and students who are part of these programs over the years and have come to have a great appreciation for their process. Sanford's EMT programs administration and faculty understand how vital this profession is at all levels for our State and communities. They have even formed an advisory board of all the people in the field from first responders to Paramedics, Ambulance service directors, Educational faculty, Hospital staff and more. This action only speaks to there dedication, and concern for the industry, in a state where these roles are harder to fill due to the rural nature of our state.

As a Small Business Owner, Employer, EMS Director, Paramedic, Emergency Manager, Deputy Coroner, HazMat Technician, 911 coordinator (etc....), and instructor myself I want you to know just how valuable Sanford's program is. In smaller communities many of us wear multiple hats, and they almost always start with EMT/Paramedic. Please support them at your institution as you have no idea just how valuable they are as a resource to the state of South Dakota.

Warm regards,

**BJ Stiefvater**

MCCOOK COUNTY EMS INC.  
MCCOOK COUNTY EMERGENCY MANAGER

