Academic Program Review

**Program Review Documents should be completed and submitted to the appropriate dean/reporting supervisor and the assessment coordinator no later than June 30th, 2020. If needed, the program can reach out to the assessment coordinator with any data requests needed to complete the self-study.**

**I. Executive Summary**

Coconino Community College’s Emergency Medical Services Education program has provided training for Emergency Medical Technicians since the founding of Coconino Community College in 1991. The addition of the Paramedic certificate and degree program that is taught in partnership with Northern Arizona Healthcare greatly expanded the impact on pre-hospital healthcare throughout Coconino County.

The program’s primary purpose is to train a diverse population of students to have the baseline and advanced knowledge and skills to work as EMTs, Paramedics and firefighters along with continuing education and training to become competent emergency services practitioners.

Additionally the EMS program provides CPR and first aid training for students participating in the aforementioned EMT and paramedic training as well as students in the Fire Science, Nursing, Certified Nursing Assistant, Medical Assistant, Caregiver and Detention Officer training programs.

Some the program review’s key findings include:

* + *Improving the EMS 131, Emergency Medical Technician student success rate for certification testing with the National Registry and Arizona Department of Health Services.*
  + *Program administrative staffing reorganization is needed.*

The review process helped highlight program actions that have been successful and program actions that require change.

Program successes include:

* *Addition of the Simulation Lab and high fidelity simulation manikins giving EMT and paramedic students a better patient assessment and management learning experience.*
* *Added cardiac monitoring and other associated diagnostic and skills training equipment to the EMT and Paramedic classes contributing to increasing successful certification testing.*
* *Close collaboration with stakeholders including a continued contractual partnership with Northern Arizona Healthcare and Guardian Medical Transport as well as an IGA with City of Flagstaff.*

Program changes include:

* + *While the program curriculum remains unchanged there will be continued improvement in instruction methodology through technology and available course textbooks and related materials.*
  + *Development of budget process to support grant purchased equipment for program.*
  + *Explore a possible 2 + 2 with NAU Bachelor’s*

**II. Overview**

* 1. Narrative

The primary purpose of the Coconino Community College Emergency Medical Services Education Program is to train a diverse population of students to have the baseline and advanced knowledge and skills to work as EMTs, Paramedics and firefighters along with continuing education and training to become competent emergency services practitioners.

* + 1. The program uses the US Department of Transportation National Standard Curriculum as the overarching guide for course contents and instruction methodology. These curriculum standards are utilized by the National Registry of Emergency Medical Technicians to administer a universal certification testing process that has been adopted by the various certifying entities from state and local agencies across the United States.
    2. The Emergency Medical Services education program was first offered locally as an extension of Yavapai Community College. The program was introduced at Coconino Community College in 1992.
  1. Program goals
     1. Upon completion of the program students will have the knowledge, skills and abilities to function as a practitioner at the basic Emergency Medical Technician or the advanced Paramedic level of pre-hospital medical services.
     2. Coconino Community College’s Emergency Medical Services Program supports the college’s mission to provide, “…accessible and affordable educational programs that prepare students for a future…promoting student success through a welcoming and inclusive learning environment designed for innovative programming, career and workforce development, university transfer education, and continued life-long learning opportunities.” Together, this provides a pool of trained emergency medical providers for agencies to draw from to protect communities around the nation.
  2. Decision making
     1. Decision-making is based upon compliance with current standards as set by the National Registry of EMTs and Arizona Department of Health Services as well as other state, regional and local pre-hospital and fire department agencies. These administrative decisions are made in concert with the college’s Public Safety Advisory Council, Dean of Career and Technical Education, the Emergency Medical Services Education Program Coordinator, EMS Program instructor cadre, and student feedback.
  3. Program’s Accomplishments Supporting College’s Strategic Plan
     + - The Emergency Medical Services Education Program’s accomplishments in the past 5 years include…
         1. Continued adherence to the US Department of Transportation Nation Standards Curriculum as adopted in 2009. This Department of Transportation has allowed for the ever evolving medical education, testing and skills practices to be adjusted as needed while leaving the curriculum unchanged. These changes support the college’s strategic plan Team 1: Team Excellence, 1.3 Students will successfully navigate the college with minimal barriers.
         2. Development of the patient assessment and management simulation lab (Sim Lab). The Sim Lab allows for realistic and easily duplicated scenario based training for a wide variety of trauma and medical patients that will be encountered by EMS 131 and EMS 262 students after program completion. This supports Team 3: Team Opportunity 3.2 The college will improve opportunities for lifelong learning and Team 3: Team Opportunity 3.3 The college will improve opportunities for workforce training and economic development.
         3. Implementation of an extrication trailer for teaching EMS 131, FSC 262 and advanced extrication practices. The trailer has the equipment to teach extrication classes as required by current classes and allow outreach to new classes for current fire service professional and rural areas. This supports Team 3: Team Opportunity 3.2 The college will improve opportunities for lifelong learning and Team 3: Team Opportunity 3.3 The college will improve opportunities for workforce training and economic development.
         4. Inclusion of a mobile solar power array to the extrication training trailer. The addition of this equipment support’s the college’s strategic plan Team 2: Team Sustainability, 2.3 The College will demonstrate leadership for outstanding and effective sustainability practices. It also supports Team 3: Team Opportunity 3.2 The college will improve opportunities for lifelong learning.
         5. Support for allowing use of Coconino Community College’s 4th Street campus Sim Lab by the Greater Flagstaff Regional Fire Departments and Guardian Medical Transport for EMS continuing education. The class being taught by partnering fire department and EMS agency personnel will increase the knowledge, skills and abilities for current and future EMS and fire service providers. This supports Team 3: Team Opportunity 3.2 The college will improve opportunities for lifelong learning and Team 4: Team Community 4.4 The College will strengthen and expand community connections and engagement to champion the College as a community center.
         6. Addition of CPR and EMS 131 course offerings to the Page campus. This supports Team 3: Team Opportunity 3.2 The college will improve opportunities for lifelong learning and Team 4: Team Community 4.4 The College will strengthen and expand community connections and engagement to champion the College as a community center.

**III. Teaching and Learning**

Emergency Medical Responder (EMS 100)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Emergency Medical Responder Certificate The Emergency Medical Responder Certificate is available after successful completion of EMS 100 and passing the subsequent NREMT industry certification testing. The program is designed to introduce basic medical assessment and treatment skills and to assist those who desire to explore their interest in the emergency medical field. Included in the curriculum are practical applications and knowledge. This course is qualified as a CAVIAT program offering. | | | | |
| Certificate Requirements | | | | |
| **Course Name** | **Credits:** | **Term Taken** | **Grade** | **Gen Ed** |
| EMS 100 - Emergency Medical Responder | **Credits:** 4 |  |  |  |
| Total Certificate Credit Hours: 4 | | | | |

Emergency Medical Technician (EMS 131)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Emergency Medical Technician Certificate The Emergency Medical Technician Basic Certificate is available after successful completion of EMS 131 and passing the subsequent NREMT industry certification testing. The program is designed to introduce basic medical assessment and treatment skills and to assist those who desire to enhance their ability find employment as an EMT. Included in the curriculum are practical applications and knowledge. Students may apply credit hours earned in this program toward the Associate of Applied Science degree in Paramedic Studies. This course has been added as CAVIAT program offering effective for Fall 2021. | | | | |
| Certificate Requirements | | | | |
| **Course Name** | **Credits:** | **Term Taken** | **Grade** | **Gen Ed** |
| EMS 131 - Emergency Medical Technician | **Credits:** 8 |  |  |  |
| Total Certificate Credit Hours: 8 | | | | |

Paramedic Certificate (EMS 262)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Paramedic Certificate The Paramedic Certificate is available after successful completion of EMS 262 and passing the subsequent NREMT industry certification testing. The program is designed to introduce advanced medical assessment and treatment skills and to assist those who desire to enhance their ability find employment as a Paramedic. Included in the curriculum are practical applications and knowledge. Students may apply credit hours earned in this program toward the Associate of Applied Science degree in Paramedic Studies. | | | | |
| Certificate Requirements | | | | |
| **Course Name** | **Credits:** | **Term Taken** | **Grade** | **Gen Ed** |
|  Completion of the Paramedic Certificate **Credits:** 55 |  |  |  |  |
| EMS 131 – Emergency Medical Technician | **Credits:** 8 |  |  |  |
| EMS 262 - Paramedic | **Credits:** 47 |  |  |  |
| Total Certificate Credit Hours: 55 | | | | |

4. Paramedic Studies AAS Degree

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Fire Science (AAS)**  Designed to prepare students with the knowledge, skills, and abilities (KSA’s) to advance within the Emergency Medical Services career field. Successful completion of the program also provides the student with an opportunity to obtain certification with the National Registry of Emergency Medical Technicians and the Arizona Department of Health Services as well a certification across the United States and abroad. | | | | |
| **Major Requirements**  All general education coursework must be selected from the approved AGEC list. | | | | |
| **General Education: 18 credits** | | | | |
| **College Composition (6-8)** | | | | |
| **Course Name** | **Credits:** | **Term Taken** | **Grade** | **Gen Ed** |
| ENG 101 - College Composition I **OR** | Credits: 3 |  |  |  |
| ENG 101A - College Composition I with Review | Credits: 5 |  |  |  |
| **AND** |  |  |  |  |
| ENG 102 - College Composition II | Credits: 3 |  |  |  |
| **Mathematics (3-5)** | | | | |
| **Course Name** | **Credits:** | **Term Taken** | **Grade** | **Gen Ed** |
| MAT 140 - College Math with Algebra Review **OR** higher level course | Credits: 5 |  |  |  |
| **Arts and Humanities (3)**   * Arts and Humanities Course **Credits:** 3 | | | | |
| **Social and Behavioral Sciences (6)**  (Two courses from different disciplines)   * Social and Behavioral Sciences Course **Credits:** 3 * Social and Behavioral Sciences Course **Credits:** 3 | | | | |
| **Physical and Biological Sciences (4)**   * Physical and Biological Sciences Course **Credits:** 4 | | | | |
| **Degree Core requirements: 55 credits** | | | | |
| **Course Name** | **Credits:** | **Term Taken** | **Grade** | **Gen Ed** |
| EMS 131 - Emergency Medical Technician | Credits: 8 |  |  |  |
| EMS 262 - Paramedic | Credits: 47 |  |  |  |
| **Total Degree Credit Hours: 73** | | | | |

* + - Changes in the 2019 curriculum update added EMS 131 to the core curriculum.
    - EMS 262 remains as a single contiguous course but has been broken in to EMS 262A, EMS 262B and EMS 262C to fit within a three semester course schedule.
    - Normal Emergency Medical Services course modality is primarily in-person courses. This serves the adult leaner and primarily hands-on instruction best. Course modalities experienced significant changes during this program review period as a result of the Coronavirus. Prior to the pandemic, classes were taught: in-person, zoom and online. Due to the Coronavirus pandemic all classes were moved to a hybrid format to accommodate the areas where in person attendance is required by accrediting agencies/national standards.

Enrollment and Student Success

1. In the past (5) years, Coconino Community College has averaged 129 students per year that entered the EMS program with XXX entering EMS as their major. The following illustrates program students with the following industry certificates and/or AAS degree.
   1. Basic EMT Certificate
   2. Paramedic Certificate
   3. AAS Paramedic Studies Degree

Total EMS Students EMT Certificate Paramedic Certificate AAS Degree

|  |  |  |  |
| --- | --- | --- | --- |
| 815 | 479 | 100 | XXX |

Certification of Students

1. The Emergency Medical Services program enables students to test for certification by the National Registry of Emergency Medical Technicians for:
2. Emergency Medical Responder
   * 1. This is achieved through completion of EMS 100 and subsequent successful certification testing.
3. Emergency Medical Technician
4. Paramedic
5. Through their course of study EMS 262 Students also achieve a number of industry certificates for:
   1. Advance Cardiac Life Support
   2. Pediatric Advanced Life Support
   3. Pre Hospital Trauma Life Support
   4. Advance Trauma Life Support
6. The above-mentioned certificates are industry minimum standards for paramedics.

Curriculum

1. Our curriculum adheres to the US Department of Transportation National Standard Curriculum. The standards are reviewed as needed. The last update was implemented in 2009.
2. The last curriculum change was implemented in fall 2009. The changes standardized classes required for the degree and simplified the certificate to degree progression process. The Advisory Council felt students completing the certificate and degree having a choice of electives was less desirable than a standard set of class and competencies. The update eliminated this issue and added core classes consistent with current professional qualifications.
3. As mentioned earlier, COVID-19 health concerns required quick and multiple modifications to course delivery modalities during this review period. Consequently, we reduced class size and moved classes to a hybrid instruction modality allowing for reduced in person contact hours but still meeting the required hands on skills practice and testing. The reduced class sizes and Zoom modality instruction has posed significant challenges for registration levels and quality instruction.

Articulation

1. Current articulation practice is an independent evaluation of the course outline from the program coordinator against our course outline. This has posed challenges as different regions may offer identical courses between community colleges with a wide variety of credit load hours.
2. The Commission on Accreditation of Allied Health Education Programs (CAAHEP) provides accreditation for the paramedic course program. The accreditation process is administered through the Northern Arizona Healthcare Education Department in collaboration with Coconino Community College. The program accreditation undergoes a biannual review and reaccreditation.

Teaching Loads

1. Currently there is one half time (.5 FTE) Program Coordinator who oversees the Emergency Medical Services Education program. The program’s various course offerings are taught by thirteen (16) part-time instructors. It is common practice for some instructors to team teach in order to bring a variety of perspectives and teaching styles into the class room and field training environment. Three (3) Teaching Assistants (TA II) commit to twenty-four hours (24) of hands-on skills instruction each semester for EMS 131. Additionally, an average of Fourteen (14) Teaching Assistants (TA II) and approximately six (6) Exam Assistants (TA I) will be utilized to administer required skills examinations.

Faculty Credentialing

1. Emergency Medical Services Program instructors must be possess the following credentials…
   * Current certification to the level of the class they are instructing (Paramedic certification preferred).
   * Minimum 5 years of field experience for the course they are instructing.
   * Certification as Emergency Services Instructor I or Facilitative Instructor.
2. Our current part-time faculty possess extensive emergency services field experience.

Student Learning Assessment

1. The EMS 131 results although overall encouraging show clear opportunities to strengthen performance. Specifically, students are under‐performing in achieving a first attempt passing score on the NREMT certification exam.
2. The EMS coordinator shares the results with the teaching staff. The faculty is continuously looking at the various topics and work to improve the lesson presentation and consistency on the quizzes and tests to insure clarity. This will be reviewed periodically in line with Program Assessment.
3. The following chart demonstrates how many students, in the past (5) five years, have tested and received certification/completion.

Certification Tested Certified Pass Rate(%)

|  |  |  |  |
| --- | --- | --- | --- |
| NREMT – Basic Emergency Medical Technician | 591 | 479 | 81% |
| NREMT – Paramedic | 100 | 93 | 93% |

Certificate of Completion Taken Completed Pass Rate (%)

|  |  |  |  |
| --- | --- | --- | --- |
| EMS 131 - Emergency Medical Technician | 703 | 645 | 91.7% |
| EMS 262 - Paramedic | 112 | 100 | 89% |

* + - Not all students who complete the above classes test for certification. This has been true for the entire existence of the program and is especially true for EMS 100 and to some extent EMS 131. Due to COVID pandemic caused class cancellations and break in instruction, we observed both a reduction in registration, completion, testing, and certification/completion.

**IV. Facilities and Resources**

1. Coconino Community College has a contractual agreement with Northern Arizona Healthcare which also encompasses Guardian Medical Transport. This agreement covers the required student clinical and vehicular rotations associated with EMS 131 and EMS 262. Additionally the agreement covers the cooperative administration of EMS 262.
2. The Intergovernmental Agreement (IGA) with the Flagstaff Fire Department covers student vehicular rotations for EMS 131 and EMS 262 as well as the use of the fire training facility for vehicular extrication training.
3. Since the last program review, we have added the Patient Simulation Lab in room C-16 on the 4th Street campus.
4. Several high fidelity simulation manikins (2 adult, 1 maternal and 1 pediatric) have been added to the program lab space allowing for instructors to integrate realistic medical and trauma patient assessment and management scenarios.
5. The EMS Program has also expanded to utilize the C-11 classroom space for small group lecture and skills breakout space.
6. The addition of seven (7) state of the art cardiac monitor/defibrillator units has allowed the EMS students to train utilizing the same equipment as the emergency response agencies in the Flagstaff region.
7. Differential tuition is used in an attempt to cover costs for running program courses. Ongoing analysis shows that differential tuition cannot cover all costs of the program while remaining competitive with other college institutions for like classes. Grants are used to augment instruction tools including the above mentioned equipment and training props.

**V. Analysis and Reflection**

1. Strengths of the program include…
   1. Dedicated and experienced teaching staff.
   2. Continuing partnerships with local hospital/ EMS and fire department agencies provide much of necessary clinical facilities and field preceptor support needed to administer high quality classes.
   3. Oversight by the Arizona Department of Health Services continues to help shape the direction of courses relevant to our program and needs of the community.

Weaknesses of the program include:

1. A percentage of necessary equipment is reaching end of life. Replacement will be necessary.
2. Program review indicates the program administrative support is understaffed.
3. Not all students and instructors feel there is an adequate amount of time spent on psychomotor skills practice. Limiting factors include:
   * + Availability of equipment.
     + Adequate amount of assisting instructional help
4. Students say having multiple advisors is confusing and provides them conflicting information for certificate/degree completion.
5. Opportunities for the program include:
6. Expansion of EMS 131 course offerings have proven to be necessary.
7. Additional need for EMT refresher course offerings outside of the Flagstaff area.
8. Previous Recommendations and Results
9. Increasing the 68% first attempt pass rate for Emergency Medical Technician has been an ongoing goal. There has been no appreciable change in this metric.
10. Additional Sim Lab facilities and equipment has been a positive factor but without additional budgeted monies for assisting personnel the lab space cannot be properly staffed.

**VI. Recommendations**

1. Curriculum changes
   * 1. Add Physical and Biological Science (4 credits) to the AAS degree General Education requirements. Recommend BIO 160 (Anatomy and Physiology). Drop one of the social science GE requirements to maintain total credit hours.
     2. Evenly distribute the credit load hours between EMS 262A, EMS 262B and EMS 262C to 16, 16 and 15 credits respectively.
2. Five Year Plan
   * 1. Staffing and budgeting dependent, we plan on solidifying the instruction of EMS related courses in Page and other remote areas of the county (Tusayan, Williams, Blue Ridge, etc).
     2. Staffing and budgetdependent, we plan on enhancing hands on training for ambulance and emergency vehicle driver operator with a grant funded driver simulator. This will increase skill proficiency for future and current responders while reducing the actual exposure on the road.
     3. Develop and support EMS program instructors and support staff with the intent of having a ready pool of qualified personnel.
3. Action Plan/Recommendations
4. It is impossible to offer anticipated completion dates for these plans without knowing funding priorities and availability.
   * + - 1. Monies must be allocated for additional workload in curriculum work.
         2. Grant funding is needed for the purchase of the driver simulator.
5. **General budget funding is needed to provide for a FT EMS Coordinator**.

**Appendix**