Course Description: This is an upper-level baccalaureate course for students interested in the management of an Emergency Medical Services (EMS) communications system. This course introduces the EMS professional to the communications systems and methodologies available to governmental and private EMS providers. Students explore issues in EMS communications technology, software, data management, and physical plant considerations.

Prerequisites: None

Course Objectives:

Module 1: History of EMS Communications
1. Chronicle the development of a single universal call number to access emergency assistance:
   a. Internationally.
   b. Nationally.
   c. Locally.
2. Discuss the significance of White House Office of Telecommunications National Policy Bulletin 73-1.
3. Discuss the evolution of 911 as a single call access number to selective routing providing phone and location services.

Module 2: Processing Calls for Service
1. Differentiate the benefits and weaknesses of commercially available call processing EMD programs such as Medical Priority Dispatch System and the Association of Public-Safety Communications Officials (APCO) Criteria-Based Dispatch protocol.
2. Compare and contrast their usage with the benefits and weaknesses of an internally developed community program as needed.
3. Develop a training curriculum for the EMD program utilized or selected by community.

Module 3: Dispatching Calls for Service
1. Compare and contrast the commercially available call processing and computer-aided dispatch programs.
2. Identify the advantages and disadvantages of utilizing a particular program for a community ranging from rural, suburban, urban, Metro city sized, and regional centers.
3. Identify the System Status Management plan for a community and discuss modifications if needed.
4. Discuss priorities of balancing contractually obligated consumers and handling emergency calls for service.
Module 4: Telephony Infrastructure
1. Understand the interrelationships between the competitive local exchange carrier (CLEC) and public safety answering point (PSAP) in relationship to emergency call routing to the emergency call center in regard to call trunking.
2. Identify the routing of the caller utilizing a three-digit emergency access number to their CLEC and then PSAP and subsequent secondary PSAPs.
3. Articulate the advantages and disadvantages of how a caller may access the emergency caller when using a hard-wired landline versus a phone system utilizing voice over internet protocol and/or wireless phone sets.
4. Discuss the use of selective routing in a community and how to properly manage the feature to ensure equal access to emergency service.
5. Discuss the challenges of properly geo-locating a wireless caller according to the latest Federal Communications Commission docket for wireless access to 911.

Module 5: Radio Infrastructure
1. Discuss the different public safety frequencies allocated in the 700 mHz, 800 mHz, and 900 mHz frequency bands.
2. Discuss the commercial very high frequency and ultra high frequency Analog frequency bands available to commercial EMS providers.
3. Discuss the strengths and weaknesses of a trunked versus nontrunked radio system.
4. Articulate the importance of radio interoperability and system design as it relates to APCO P25 and Department of Homeland Security directives regarding emergency radio interoperability.
5. Compare and contrast the use of radio equipment made by different manufacturers.
6. Discuss the use of wireless handsets with direct call capabilities versus radio handsets.
7. Compare and contrast the utilization of hard-wired data cables versus microwave data links to connect base stations to the EMS Communications Center.
8. Be able to develop a communications plan for the center for normal operations.
9. Be able to develop a communications plan for the center for disaster operations.
10. Be able to develop a communications plan for the center for special event operations.

Module 6: Information Network Infrastructure
1. Identify the priorities when directing the development and/or selection of the network software for the EMS Communications Center’s data network.
2. Properly identify the security priorities when directing the development of a network security plan to prevent access by unauthorized users.
3. Articulate the federal, state and local regulations governing the data security of an emergency call center.

Module 7: Physical Plant
1. Be able to articulate the need for redundant systems in telephony, radio infrastructure, and information network services and software.
2. Be able to identify the proper backup systems for mission critical programs in the center.
3. Discuss the need to properly select call center furniture and call processing work stations for personnel in compliance with federal, state and local regulations.
4. Discuss the process to ensure that the communications center is safe from natural disaster.
5. Develop contingency plans for extended operations in the event of a significant event.
Module 8: Quality Assurance (QA)/Quality Improvement (QI)
1. Articulate the priorities and essential qualifications for medical direction of an EMS Call Center.
2. Develop the duties and responsibilities of the EMS Call Center Medical Director.
3. Develop policies and protocols to ensure the confidentiality of the EMD QA/QI process.
4. Develop policies and protocols to reflect local employment regulations and or collective bargaining agreements in relationship to the EMD QA/QI performance improvement process.
5. Discuss the advantages and disadvantages of commercially available EMS QA/QI programs.
6. Develop a risk management protocol for the EMS Communications Center as it relates to call taking, call processing, and call dispatching.

Module 9: Regional Coordination
1. Identify the relationship of the local EMS Communications Center with the Local/County Emergency Operations Center.
2. Identify the relationship of the EMS Communications Center to other emergency communication centers in the community.
3. Articulate the differences in a consolidated regional EMS Communications Center versus separate centers.
4. Discuss the benefits and disadvantages of consolidated regional EMS Communications Centers versus separate centers.
5. Discuss the relationship of the local EMS Communications Center with a Regional Emergency Operations Center.
6. Discuss the relationship of the local EMS Communications Center with a State Communication/Coordination Center.

Outcomes: Upon completion of this course:
The student will be able to:
1. Draw an organizational matrix that is representative of the anatomy of EMS communication.
2. Demonstrate the communication role of EMS from field application to the emergency department.
3. Identify the common terminology used by EMS technicians and paramedics during emergency field operations.
4. Evaluate the role of Geographic Information System mapping and enhanced 911 systems.
5. List the various state and federal regulations that affect the emergency medical communications.
6. Describe the role of call dispatcher as it applies to prehospital emergency medical care.
7. List and describe techniques for relaying clear, effective EMS communications.
8. Identify the technical aspect of how basic radio systems work for use in the public radio system and how they are licensed.
9. Articulate the foundational security concepts and best practice principles of analog and digital public radio systems.
10. Compare and contrast “right to know” information and protected personal and personally identifiable information.

Texts:
TBD

Supporting References:
National EMS Standards
Assessment:
Students will be evaluated for mastery of learning objectives by methods of evaluation to be determined by the instructor.

Method of Instruction:
This class is conducted completely online through the Desire 2 Learn Learning Management System.

Course Grade: The course grade will be based on the following distribution:

Attendance Policy:
The faculty of Southern Illinois University Carbondale affirm the importance of prompt and regular attendance on the part of all undergraduate students. Quality instruction clearly depends upon active participation in the classroom or its equivalent learning environment. This concept is further expounded upon in the Southern Illinois University Carbondale Undergraduate Catalog.
Students who are absent from more than one-third (1/3) of a course’s instructional hours will seriously jeopardize their grade for the course. Students who stop attending or never attend a class without officially dropping that class will be awarded a grade of WF for the class. The WF grade is designed for students who enroll in a course but don’t attend or quit attending and do not drop the course. When awarding the WF grade the last date of attendance or nonattendance must be reported along with the grade.

Academic Dishonesty Policy:
Students may be subject to disciplinary proceedings resulting in an academic penalty or disciplinary penalty for academic dishonesty. Academic dishonesty includes, but is not limited to, cheating on a test, plagiarism, and collusion.

ADA Statement for Students Requiring Special Accommodations:
As per Section 504 of the Vocational Rehabilitation Act of 1973 and the American Disabilities Act (ADA) of 1990, if accommodations are needed, inform your instructor as soon as possible.

Safety Instructions:
Instructors will provide guidance and direction to students in the classroom in the event of an emergency affecting your location. It is important that you follow these instructions and stay with your instructor during an evacuation or sheltering emergency. If you are located on a military installation, and depending on the type emergency a senior military member may take control; of the situation and direct you on the action to take. Please follow their instructions and do as asked. Similarly, if you are at a community college, their security personal may arrive and take control of a situation please follow their instructions as well.