I. INTRODUCTION

A. This course is a study of public safety communication system interactions. Topics include political and policy basis of emergency management, technology, mitigation, and disaster recovery. Includes an overview of incident command systems, emergency management, mitigation for emergency managers, and individual and community disaster education.

B. This course is a required course in the Homeland Security – Emergency Management Associate of Applied Science Degree.

C. This course is occupationally related and serves as preparation for careers in: Homeland Security, Emergency Management, Law Enforcement, Criminal Justice, and Corrections.

D. Prerequisite(s): None

II. LEARNING OUTCOMES

Upon successful completion of this course, Homeland Security Emergency Communications Management the student will:

A. Demonstrate knowledge of the technologies applicable to each phase of homeland security and emergency management.

B. Know the key elements that must be in place for technology to enhance the emergency management process.

C. Understand the applications and tools available to Emergency Managers including Internet, telecommunications, networks, warning systems, radio systems, GIS software, and GPS tools.

D. Review the elements of a hazard model and demonstrate knowledge of the limitations of modeling programs.

E. Prepare a report defining a concept of operations and plan for applying a specific technology to address an assigned scenario.
III. INSTRUCTIONAL MATERIALS

The instructional materials identified for this course are viewable through www.ctcd.edu/books

IV. COURSE REQUIREMENTS:

A. Class preparation:
   Students are required to prepare for class in advance according to the schedule presented in the syllabus. Students should read about the next lesson and come to class ready to enhance that knowledge. In-class time should be spent with the instructor to get as much help and to ask as many questions as possible pertaining to the lesson that was already prepared for at home. Students should ask the instructor questions in class, before or after class, during office hours, or by making an appointment. Students are also strongly encouraged to E-mail the instructor if time is of the essence.

B. Reading Assignments:
   Students are required to read the assigned lessons from the text book. There will be a written quiz on each lesson. Vocabulary from each lesson will be used in oral conversation during the class following the assignment.

C. Homework:
   Will be assigned on a regular basis and students are expected to complete it in a timely fashion. The instructor is under no obligation to accept overdue homework assignments.

D. Project:
   Students may be required to submit one individual and one collaborative project.

E. Assignments:
   Everything submitted to your instructor is graded accordingly and therefore contributes in the outcome of your final grade.

F. Class Performance:
   If a class is missed, it is students’ responsibility to obtain the information missed during the class. The teacher will not repeat instructions or lessons for the classes the student misses. It is the student’s responsibility to make arrangements to take an exam early if he or she will not be able to attend class on one of those days. Failure to notify the instructor will result in a grade of zero on that test/quiz. There are no make-up quizzes.
G. Class Participation:
The percentage of students' grades are based on attendance and participation. The student will practice conversation with a partner during part of each class and will be graded on the effort put into these exercises.

V. EXAMINATIONS

A. There will be at least two exams.

B. A student must be present for all examinations. No make-up examinations will be given. Students who know in advance they will be absent from an examination due to valid reasons, must arrange to take an early examination if allowed by the instructor. Unexpected absences due to illness or extenuating circumstances require the student to see the instructor about individual make-up work in lieu of the missed examination. One exam maximum per semester may be allowed to be made due to valid reasons.

C. Students without excused absences will be given a zero for the examination missed. Quizzes will not be allowed to be made up under any circumstances.

VI. SEMESTER GRADE COMPUTATIONS

A. Your course grade is determined by your performance on assignments, projects, and exams.

B. The possible grades for this course are A, B, C, D, or F. In order to receive transferable for this course, a grade of C or above must be earned. As a rule, D's will not transfer to other colleges. Grading criteria will be based on the http://www.ctcd.cc.tx.us/grades.htm:

<table>
<thead>
<tr>
<th>Grade</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>F</th>
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<tr>
<td>Percent</td>
<td>90-100%</td>
<td>80-89%</td>
<td>70-79%</td>
<td>60-69%</td>
<td>0-59%</td>
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<tr>
<td>Points</td>
<td>900-1000</td>
<td>800-899</td>
<td>700-799</td>
<td>600-699</td>
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VII. NOTES AND ADDITIONAL INSTRUCTIONS FROM THE INSTRUCTOR

A. Course Withdrawal: It is the student's responsibility to officially drop a class if circumstances prevent attendance. Any student who desires to, or must, officially withdraw from a course after the first scheduled class meeting must file an Application for Withdrawal or an Application for
Refund. The withdrawal form must be signed by the student. Application for Withdrawal will be accepted at any time prior to Friday of the 12th week of classes during the 16-week fall and spring semesters. The deadline for sessions of other lengths is as follows: 11-week session Friday of the 8th week; 8-week session Friday of the 6th week; 5½-week session Friday of the 4th week. The equivalent date (75% of the semester) will be used for sessions of other lengths. The specific last day to withdraw is published each semester in the Schedule Bulletin. Students who officially withdraw will be awarded the grade of "W", provided the student's attendance and academic performance are satisfactory at the time of official withdrawal. Students must file a withdrawal application with the college before they may be considered for withdrawal. A student may not withdraw from a class for which the instructor has previously issued the student a grade of "F" or "FN" for nonattendance.

B. Administrative Withdrawal: An administrative withdrawal may be initiated when the student fails to meet College attendance requirements. The instructor will assign the appropriate grade on the Administrative Withdrawal Form for submission to the registrar.

C. Incomplete Grade: The College catalog states, "An incomplete grade may be given in those cases where the student has completed the majority of the course work but, because of personal illness, death in the immediate family, or military orders, the student is unable to complete the requirements for a course..." Prior approval from the instructor is required before the grade of "I" is recorded. A student who merely fails to show for the final examination will receive a zero for the final and an "F" for the course.

D. Cellular Phones and Beepers: Students who receive cellular calls and pages during class disrupt the normal classroom learning environment. To avoid this disruption, students must turn off all cellular phones, pagers, and beepers when entering the classroom.

E. Students are expected to initiate outside help if needed. It is the student’s responsibility to monitor feedback provided by the instructor. There are various possibilities for obtaining outside help. Always see your instructor first for guidance.

F. American’s with Disabilities Act (ADA): Disability Support Services provides services to students who have appropriate documentation of a disability. Students requiring accommodations for class are responsible for contacting the Office of Disability Support Services (DSS) located on the central campus. This service is available to all students, regardless of location. Explore the website at www.ctcd.edu/disability-support for
further information. Reasonable accommodations will be given in accordance with the federal and state laws through the DSS office.

G. Instructor Discretion: The instructor reserves the right of final decision in course requirements.

H. Civility: Individuals are expected to be cognizant of what a constructive educational experience is and respectful of those participating in a learning environment. Failure to do so can result in disciplinary action up to and including expulsion.

VIII. COURSE OUTLINE

A. **Lesson One:** Technology as a Tool

1. **Learning Outcomes:**
   a. How technology can help Emergency Managers and managers in the Homeland Security field be more effective
   b. Evaluate the technology needs of a community/organization
   c. Persuade key stakeholders to commit resources

2. **Learning Activities:**
   a. Read Chapter 1 (C1, F1)
   b. Assignment: Summary Questions 1-5; Review Question #3
   c. Discussion Exercise: (C1, C5, C6, C8)
      - Pick 1 city
        - Burbank, CA
        - Topeka, KS
        - Ft. Lauderdale, FL
        - New York City, NY
   List 3 technologies that the local Emergency Manager would find useful for the city you chose and for EACH technology tell:
      - For what type of disaster might the technology be used
      - What need it meets (e.g. communication, provides a specific piece of information, predicts weather, etc)
      - Whether it is used for planning, response, recovery, and/or mitigation
   Be prepared to share your response during in class discussion, as well submit your written response

3. **Lesson Outline:**
   a. Technology as a homeland security/emergency management tool
   b. Effective use of technology
   c. Completing a Needs Assessment
d. Using ‘windows of opportunity’ and ‘focusing events’ to persuade stakeholders to commit resources

B. **Lesson Two: Emergency Management and the Internet**

1. **Learning Outcomes:**
   a. The value of the Internet for Homeland Security/Emergency Managers
   b. Useful websites for emergency managers
   c. Limitations of the Internet
   d. Forums and Webcasting uses

2. **Learning Activities:**
   a. Read Chapter 2 (omit 2.2 and 2.3) (C1, F1)
   b. Assignment: Review Questions 1, 3, 4, 5, 8, and 11 (C1, C5, C6, C8)
   c. Discussion Exercises: ((C5, C6, C8, C9)
      - Applying this Chapter #2 OR #6
      - Applying this Chapter #8

   Be prepared to share your response during in class discussion, as well a submit your written response

3. **Lesson Outline:**
   a. Case Study: Hurricane Katrina and the Internet
   b. Value of Internet to Homeland Security and Emergency Managers
   c. World Wide Web
   d. Limitations of the Internet
   e. Helpful websites for emergency managers
   f. Uses of forums and webcasting

C. **Lesson Three: Networks and Communication Systems**

1. **Learning Outcomes:**
   a. Role networks play in the Emergency Management process
   b. Types of networks
   c. How trends affect networks
   d. Capabilities, compatibilities, and standardization issues

2. **Learning Activities:**
   a. Read Chapter 3 (C1, F1)
   b. Case Study: Read the identified sections of “Texas Radio Communications Interoperability Plan” ((C1, C5, C6, C8)
      - Challenges to Interoperability in Texas
      - Interoperability Solutions

   (The entire plan is provided as additional reference.)
c. Assignment: Summary Questions 1-9; Review Questions 5-6 (C1, C5, C6, C8)

d. Discussion Exercise: (C1, C5, C6, C8)
   - List 5 key stakeholders with whom you would wish to collaborate with during a disaster if you were the Emergency Manager of a local city or county/parish (i.e. city police, hospitals, etc). For each stakeholder list 1 example of information you would share, what technology you would use to share it
   - Explain why technology standards for a technology tool is important

Be prepared to share your response during in class discussion, as well a submit your written response

3. Lesson Outline:
   a. Define network
   b. Network benefits
   c. Types of networks
   d. Case Study: “Disaster Drill Tests New Wireless Technologies Developed at UCSD and CALIT2”
   e. Communication newtorks
   f. Trends in technology affecting networks

D. Lesson Four: GIS and GPS Tools
1. Learning Outcomes:
   a. Mapping and geographic systems essential to emergency managers
   b. Interpret maps to make planning and response decisions
   c. Use GIS, geo-coding, and GPS tools to plan, respond, recover, or mitigate a disaster

2. Learning Activities:
   a. Read Chapter 4 (C1, F1)
   b. Read Case Study “Rockland County, NY” (C1, F1)
   c. Assignment: Summary Questions 1-11; Review Questions 3, 5, and 7 (C1, F1)
   d. Discussion Exercise: (C1, C5, C6, C8)
      • Pretend you are a citizen of Rockland County, NY. You work at 85 Old Phillips Hill Rd (New City, NY) with a zip code of 10956. Go to http://www.co.rockland.ny.us/Fire/indian_point.htm and click on “Indian Point Interactive Mapping System”. Select streets as the “Active Layer” and click yellow button to start search by provided
address. Use the mapping tool to answering the following questions:

1. Is this location within the 10 mile radius area predefined as the “Response Area”?
2. What is your suggested ‘Reception Area’?
3. To what radio station can you listen to hear warnings and further instructions?
4. Explain how using this website and having instructions prior to a disaster is beneficial to you as a citizen and mitigates additional problems for the emergency responders during an actual disaster.

Be prepared to share your response during in class discussion, as well a submit your written response.

3. **Lesson Outline:**
   a. Geographic Information Systems (GIS)
   b. GIS in Emergency Management
   c. Implementing GIS
   d. Data representation
   e. Geocoding
   f. Global Positioning Systems

E. **Lesson Five:** Direct and Remote Sensing
1. **Learning Outcomes:**
   a. Distinguish between direct and remote sensing to learn the benefits of both
   b. Where to place and how to assess data from weather stations, water sensors, and air sensors to protect a community
   c. Evaluate information obtained from satellite and radar imaging
   d. Assess how access to real-time response data affects emergency management decisions

2. **Learning Activities:**
   a. Read Chapter 5 (C1, F1)
   b. Read articles “BioWatch”, “APDS”, and “HANAA” (C1, F1)
   c. Assignment: Summary Questions 1-14; Review Questions 1 and 8 (C1, F1, C8)
   d. Discussion Exercise: (C1, C5, C6, C8)
      • Applying this Chapter #10

Be prepared to share your response during in class discussion, as well a submit your written response
3. **Lesson Outline:**
   a. Direct sensing and data
   b. Weather stations
   c. Water data sensors
   d. Air data sensors
   e. Evaluating the technology
   f. Remote sensing
   g. Satellites
   h. Using and assessing the data
   i. Trends in technology

F. **Lesson Six:** Emergency Management Decision Support System
1. **Learning Outcomes:**
   a. Understand there is a systematic method to collect, maintain, evaluate, and distribute data and information throughout an organization and emergency management community.
   b. Recognize the uses of the data provided by FEMIS, NEIMS, and CAMEO
   c. Evaluate the design of the Tier 2 structure
   d. Evaluate databases based on data quality, accessibility, relevance, and ease of use

2. **Learning Activities:**
   a. Read Chapter 6 (C1, F1)
   b. Review the FEMA Hazus case studies: “Dam Failure” and “Earthquake”
   c. Assignment: Review Questions 1-7 (C1, F1)
   d. Discussion Exercise: (C1, C5, C6, C8)
      1. Applying this Chapter #4
      Be prepared to share your response during in class discussion, as well a submit your written response

3. **Lesson Outline:**
   a. Emergency management information systems
   b. Evaluating information systems
   c. Accessing federal, state, and local information systems
   d. Using the data
   e. Tier 2 data
   f. Evaluating databases
   g. Using emergency management databases
   h. Obtaining data from public federal sources

G. **Lesson Seven:** Hazard Analysis and Modeling
1. **Learning Outcomes:**
   a. Modeling to simulate real disasters
   b. Different components of SLOSH, ALHOA, and other modeling programs
c. Read outputs of modeling programs in order to make emergency management decisions
d. Evaluate hazard model programs using identified valuable characteristics

2. Learning Activities:
a. Read Chapter 7 (C1, F1)
b. Assignment: Summary Questions 1-13; Applying this Chaper #6 (C1, F1)
c. Discussion Exercise: (C1, C5, C6, C8)
   • Use the provided CAMEO hazmat release modeling scenario and image to answer the following questions. Also, go to http://cameochemicals.noaa.gov/ to search for properties of chlorine.
   1. As an emergency manager, how could having scenarios such as this hazmat model for your community help you plan? How could it help you mitigate a future disaster or deaths/injuries during a disaster?
   2. If the scenario was an actual disaster in the local community in which you are the Emergency Manager, how could you use this information to respond? With what agencies/organizations would you need to collaborate?

Be prepared to share your response during in class discussion, as well a submit your written response

3. Lesson Outline:
a. Modeling and emergency management
b. Using a hurricane model (SLOSH)
c. Using a chemical dispersion model (ALOHA)
d. Assessing HAZUS-MH models
e. Additional models
f. Evaluating hazard models

H. Lesson Eight: Warning Systems
1. Learning Outcomes:
a. Different components of a warning systems
b. Evaluate various ways to detect a disaster
c. Concerns to consider when issuing warnings
d. Types of warning systems
e. Myths of public response to warnings

2. Learning Activities:
a. Read Chapter 8 (C1, F1)
b. Read Case Study “Landslide Warning in Costa Rica” (C1, F1)
c. Assignment: Summary Questions 1-13; Review Questions 1-6 (C1, F1, C8)
d. Discussion Exercise: (C1, C5, C6, C8)
   • You are the emergency manager for a town that is in the path of tornadoes every year. You have been alerted that a tornado is heading for your community. What steps do you take before you issue a tornado warning?
   Be prepared to share your response during in class discussion, as well a submit your written response

3. **Lesson Outline:**
   a. Warning systems
   b. Detection and management
   c. Issuing warnings
   d. Types of warning systems
   e. Response

I. **Lesson Nine:** Operational Problems and Technology
1. **Learning Outcomes:**
   a. How to design technology to fit your organization’s needs
   b. Contingency approach and how to implement it
   c. Common pitfalls of technology and how to overcome them

2. **Learning Activities:**
   a. Read Chapter 9 (C1, F1)
   b. Assignment: Summary Questions 1-10; Review Questions 1-6 (C1, F1, C8)
   c. Discussion Exercise: (C1, C5, C6, C8)
      • Applying this Chapter #4
   Be prepared to share your response during in class discussion, as well a submit your written response

3. **Lesson Outline:**
   a. Examining barriers in implementing technology in emergency management
   b. Enhancing your emergency management organization with technology
   c. Using technology to overcome organizational boundaries
   d. Pitfalls of technology
   e. Managing the Technology

I. **Lesson Ten:** Trends in Technology
1. **Learning Outcomes:**
   a. Types of information exchange
   b. Remote technology
c. Sources of emergency management information on the Web
d. Ways to beneficially manage technology
e. Technology trends

2. Learning Activities:
   a. Read Chapter 10 (C1, F1)
   b. Assignment: Summary Questions 1-8 (C1, F1, C8)

3. Lesson Outline:
   a. Using technology for information exchange
   b. Using remote technology
   c. Managing technology

Other time blocks not specifically allocated above are spent with introductory topics, administrative matters, exams, and review classes (both before and after exams).