

Emergency Management Technology Program

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Abstract

As natural disasters and man-made incidents pose greater risks to communities, the need for trained professionals who can guide the response and recovery continues to grow. Jackson State University's Emergency Management Technology (EMT) program was developed with assistance from the US Department of Homeland Security (DHS). The EMT program strives to prepare the next generation of emergency management practitioners with the knowledge and skills they need to improve outcomes in disasters of all types.

Introduction

The Industrial Technology Program at Jackson State University (JSU) has established a concentration in Emergency Management Technology to prepare students to be leaders in times of crisis. The university approved the curriculum for the EMT program in the Fall of 2010. The program began admitting students in Spring Semester of 2011. The curriculum focuses on topics such as emergency planning, incident command, disaster response and recovery, hazard identification and mitigation, agency coordination, community emergency response, Geographic Information System (GIS), and technology applications¹.

The EMT program aims to offer an up-to-date curriculum as well as laboratories for its students. In order to attract more support for EMT program, the faculty members have submitted several proposals to local and federal agencies. The grants from Nuclear Regulatory Commission and DHS have allowed the EMT program to provide students with a diverse and newly developed set of courses and course modules as well as an integrated laboratory environment. Students can participate in the activities through coursework, laboratory exercises, professional development workshops, and research, and will later attend conferences to present research results. The EMT program will be continually revamping the curriculum to meet society's expectations by supplying qualified technologists who have extensive practical skills and hands-on experience to tackle all phases of emergencies, disasters, and catastrophes.

Curriculum Enhancement

The primary goal of the EMT program is to help students gain a well-rounded skill set that will allow them to succeed in an emergency management or homeland security position. To reach this goal, the existing courses in EMT have been enriched to induct contents of virtual reality, telecommunication, nuclear emergency preparedness, and atmospheric dispersion model into the curriculum. Besides developing new course and course modules, the project team also revised existing courses.

Establishing and Upgrading Laboratories

It is believed that technology concepts are best learned with hands-on activities. Therefore, along with enhancing EMT's curriculum, the EMT faculty also work on adding and upgrading the

laboratory facilities. The EMT program has purchased equipment to establish an Amateur Radio Station, “Radiation Instrumentation and Measurements” Laboratory, and “Mobile Device Application” Laboratory and has recently acquired drones, 360 degree cameras, and virtual reality headsets. The “GIS and Remote Sensing” Laboratory has also been upgraded. With new technology comes a variety of applications that can have tremendous benefits to our society and the way we handle emergency management. From drones to virtual reality^{2,3}, technology presents the opportunity to transform disaster relief efforts and help communities to develop resilience for when the next disaster strikes.

Conference Participation and Presentation

Student research is invaluable. Students have attended many conferences, such as the Mississippi Academic of Science Annual Meeting, American Meteorological Society Annual Meeting, Emergency Management Higher Education Symposium, International Symposium on Recent Advances in Environmental Health Research, and ADMI Symposium. Research results have been presented on a variety of topics, including the following: Amateur Radio Emergency Communication, HAZMAT Resources for Emergency Responders, Emergency Preparedness Interactive Games, Case Study of Storm Surge for Hurricane Irma, Detect Threats Pre-Incident by Aggregating Data from Twitter, A Virtual Environment for Learning Radiation Emergency Response, Cyber Security Awareness and Community, Recognition of Hazards: Pipeline Safety, and Technology Applications in Emergency Management.

Program Assessments

The objectives of this program are: 1) to introduce new courses and improve laboratories; 2) to recruit students to participate in the EMT program; and 3) to increase students’ research ability and interest in Homeland Security-related STEM fields.

The program development has been successful and is meeting the goals. Our forecast is for continued program growth. The survey regarding student learning outcomes are conducted every year. Student recruitment, retention, and placement have been recorded. Recently, our EMT Program has been selected by Intelligent.com as one of the Best Emergency Management Degree Programs in the nation. Colleges, universities, and institutions which offering emergency management courses can be found at “<https://training.fema.gov/hiedu/collegelist>”.

References

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Dr. HuiRu Shih currently serves as a Professor of Technology at Jackson State University.

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