

DISASTER SCIENCE AND EMERGENCY SERVICES

The Department of Disaster Science and Emergency Services offers programs for individuals seeking careers in three in-demand areas: Emergency Management and Homeland Security, Emergency Medical Services, and Fire Protection Technology. Courses are available online, in traditional classrooms, and in distance learning classes. Students gain hands-on, real-world experience through participation in internships, simulations, and field trips.

The Department's programs in **Emergency Management and Homeland Security** (BS) and **Fire Protection Technology** (AAS) are nationally accredited. The **Fire/Medic** option in the **Emergency Medical Services** associate program is in response to a growing demand from emergency service providers.

Training Center for Fire and Hazardous Materials

This training center brings the University, government agencies, and industries together into one comprehensive regional center to integrate educational programs, fire and hazardous materials training, and other related applications of fire and safety technology.

The University of Akron / Summit County Sheriff's Office Police Academy

The University of Akron/Summit County Sheriff's Office OPOTA Certified Training Academy is a unique collaboration in law enforcement training. The instructors consist of both experienced law enforcement officers and well-respected University of Akron faculty members.

2230: Fire Protection Technology

This program prepares persons to serve governmental, industrial, and other fire protection agencies in firefighting and prevention, property protection, and handling emergency situations.

This program is accredited by:

International Fire Service Accreditation Congress (IFSAAC)
Oklahoma State University,
1700 West Tyler,
Stillwater, OK 74078-8075
(405)744-8802
ifsac.org (<https://nam03.safelinks.protection.outlook.com/?url=https%3A%2F%2Fifsac.org%2F&data=02%7C01%7Csjj%40uakron.edu%7Ccc73de4654a0492292ce08d6da19ff65%7Ce8575dedd7f94ecea4aa0b32991aeedd%7C0%7C0%7C636936202523725337&sdata=8WyoUmmoyecWxB6eNaDHcc%2FgSkWmtuUqTJ9pArS4TXM%3D&reserved=0>)

2235: Emergency Management and Homeland Security

Emergency Management and Homeland Security studies events or threats, such as natural disasters, terrorist incidents, and technological hazards. Students will acquire specialized knowledge in disaster management through prevention/mitigation, preparedness, response, and recovery actions utilizing an All-Hazards focused approach. This dynamic discipline prepares graduates for careers in the governmental, corporate, public health, and nonprofit sectors. Emergency Management and

Homeland Security can be a career that makes a difference in people's lives.

The program offers a Bachelor of Science degree, along with a minor and certificate, which is accredited by the International Fire Service Accreditation Congress (IFSAAC). Students can step-up from a responder-related associate degree, such as criminal justice or fire protection.

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Oklahoma State University,
1700 West Tyler,
Stillwater, OK 74078-8075
(405)744-8802

ifsac.org (<https://nam03.safelinks.protection.outlook.com/?url=https%3A%2F%2Fifsac.org%2F&data=02%7C01%7Csjj%40uakron.edu%7Ccc73de4654a0492292ce08d6da19ff65%7Ce8575dedd7f94ecea4aa0b32991aeedd%7C0%7C0%7C636936202523725337&sdata=8WyoUmmoyecWxB6eNaDHcc%2FgSkWmtuUqTJ9pArS4TXM%3D&reserved=0>)

2240: Emergency Medical Services Technology

This program is for Certified National Registry Emergency Medical Technician-Paramedics seeking to better understand social values and to develop technical knowledge and skills.

- Computer Forensics, Certificate (<https://bulletin.uakron.edu/undergraduate/colleges-programs/health-professions/disaster-science-emergency-services/computer-forensics-certificate/>)
- Computer Forensics, Minor (<https://bulletin.uakron.edu/undergraduate/colleges-programs/health-professions/disaster-science-emergency-services/computer-forensics-minor/>)
- Computer Information Systems, Digital Forensics Technology Option, BS (<https://bulletin.uakron.edu/undergraduate/colleges-programs/health-professions/disaster-science-emergency-services/computer-information-systems-digital-forensics-technology-option-bs/>)
- Cyber Disaster Management, Certificate (<https://bulletin.uakron.edu/undergraduate/colleges-programs/health-professions/disaster-science-emergency-services/cyber-disaster-management-certificate/>)
- Emergency Management and Homeland Security, 4-Year Option, BS (<https://bulletin.uakron.edu/undergraduate/colleges-programs/health-professions/disaster-science-emergency-services/emergency-management-homeland-security-four-year-option-bs/>)
- Emergency Management and Homeland Security, Certificate (<https://bulletin.uakron.edu/undergraduate/colleges-programs/health-professions/disaster-science-emergency-services/emergency-management-certificate/>)
- Emergency Management and Homeland Security, Minor (<https://bulletin.uakron.edu/undergraduate/colleges-programs/health-professions/disaster-science-emergency-services/emergency-management-homeland-security-minor/>)
- Emergency Management and Homeland Security, Step-up Option, BS (<https://bulletin.uakron.edu/undergraduate/colleges-programs/health-professions/disaster-science-emergency-services/emergency-management-homeland-security-step-up-option-bs/>)
- Emergency Medical Services Technology, EMT/Paramedic Option, AAS (<https://bulletin.uakron.edu/undergraduate/colleges-programs/health-professions/disaster-science-emergency-services/emergency-medical-services-technology-emt-paramedic-option-aas/>)

- Emergency Medical Services Technology, Fire/Medic Option, AAS (<https://bulletin.uakron.edu/undergraduate/colleges-programs/health-professions/disaster-science-emergency-services/emergency-medical-services-technology-fire-medic-option-aas/>)
- Fire Protection Technology, AAS (<https://bulletin.uakron.edu/undergraduate/colleges-programs/health-professions/disaster-science-emergency-services/fire-protection-technology-aas/>)
- Fire Protection Technology, Certificate (<https://bulletin.uakron.edu/undergraduate/colleges-programs/health-professions/disaster-science-emergency-services/fire-protection-technology-certificate/>)
- Fire Protection Technology, Minor (<https://bulletin.uakron.edu/undergraduate/colleges-programs/health-professions/disaster-science-emergency-services/fire-protection-minor/>)

Fire Protection Technology (2230)

2230:100 Introduction to Fire Protection (4 Credits)

History and philosophy of fire protection; introduction to agencies involved; current legislative developments; discussion of current related problems, expanding future of fire protection and career orientation.

2230:102 Fire Safety in Building Design & Construction (3 Credits)

Exploration of building construction and design with emphasis on fire protection concerns; review of related statutory and suggested guidelines local, state and national scope.

2230:104 Fire Investigation Methods (4 Credits)

History of fire investigation; gathering of evidence and development of technical reports; fundamentals of arson investigation; processing of criminal evidence and procedures related to local and state statutes.

2230:202 Incident Management for Emergency Responders (4 Credits)

Efficient and effective use of human resources, equipment and systems. Emphasis on preplanning, incident management, problem solving related to emergency preparation and response.

2230:204 Fire and Life Safety Education (3 Credits)

Application and analysis necessary for the implementation of the Life Safety Code Handbook.

2230:205 Fire Detection & Suppression Systems (3 Credits)

Design, installation, maintenance and utilization of portable fire extinguishing appliances and pre-engineered automatic systems; fire detection and alarm signaling systems operational capabilities, requirements.

2230:206 Fire Sprinkler System Design (3 Credits)

Design, installation and operation of automatic fire suppression systems. Includes sprinkler, foam, carbon dioxide, dry chemical, halogenated agent systems.

2230:250 Hazardous Materials (4 Credits)

Prerequisite: 2230:100. Study of chemical characteristics and reactions related to storage, transportation and handling of hazardous materials. Emphasis on emergency situations, firefighting and control.

2230:254 Fire Prevention (3 Credits)

Prerequisite: 2230:100. Fire codes and standards relative to fire prevention, inspection, and code enforcement.

2230:257 Fire & Safety Issues for Business & Industry (3 Credits)

Industrial fire and safety issues related to specialized hazards, federal and state regulations. Emphasis on emergency response team preparedness, confined space entry, and rescue.

2230:260 Fundamentals of Firefighting (3 Credits)

Prerequisites: Must be accepted into the Fire Academy, possess a valid driver's license, and permission of the department. Corequisites: 2230:261, 2230:262, and 2230:263. Course 1 of 4: Minimum training level to function as a firefighter in the State of Ohio, identified in the National Fire Protection Association standards, NFPA 1001.

2230:261 Firefighter I (4 Credits)

Prerequisites: Must be accepted into the Fire Academy, possess a valid driver's license, and permission of the department. Corequisites: 2230:260, 2230:262, and 2230:263. Course 2 of 4: Minimum training level to function as a firefighter in the State of Ohio, identified in the National Fire Protection Association standards, NFPA 1001.

2230:262 Firefighter II (4 Credits)

Prerequisites: Must be accepted into the Fire Academy, possess a valid driver's license, and permission of the department. Corequisites: 2230:260, 2230:261, and 2230:263. Course 3 of 4: Minimum training level to function as a firefighter in the State of Ohio, identified in the National Fire Protection Association standards, NFPA 1001.

2230:263 Emergency Vehicle Operations (1 Credit)

Prerequisites: Must be accepted into the Fire Academy, possess a valid driver's license, and permission of the department. Corequisites: 2230:260, 2230:261, and 2230:262. Course 4 of 4: Proper operation of an emergency vehicle is critical for fire service providers. The Ohio Emergency Vehicle Operations Course (EVOC) is designed to enhance safe vehicle operation by stressing theory and principles of defensive driving in both emergency and non-emergency situations. Students will learn safe driving practices, defensive driving principles, the responsibilities of an emergency vehicle driver, how to safely operate emergency vehicles during emergent responses, and the difficulties of driving fire apparatus. The course include hands-on driving exercises that will enhance the ability of a student to operate a vehicle during an emergency situation by teaching personal and vehicle control limitations. The course is a requirement to qualify for Ohio Firefighter I and Firefighter II certification.

2230:280 Fire Service Administration (4 Credits)

Prerequisite: 2230:100. Fire officer professional qualifications; federal, state regulations governing department operations-OSHA, EPA; emergency and non-emergency operations procedures-ICS, IMS, Emergency Operations Center are presented.

2230:290 Special Topics: Fire Science Technology (1-4 Credits)

(May be repeated for a total of four credits) Prerequisite: Permission. Selected topics or subject areas of interest in fire protection technology.

2230:294 Advanced Fire Investigation Methods (3 Credits)

Prerequisites: 2230:100, 2230:104, 2230:205, and 2230:206. Designed to meet student and in service fire investigators need to understand new/ updated technology and methodology in managing fire investigations.

2230:295 Field Experience I (2 Credits)

Prerequisites: 30 credit hours of successfully completed course work in the Fire Protection Technology program which includes 2230:100, 2230:102, 2230:104, 2230:204, 2230:205, and 2230:280 and permission. Course designed to measure the knowledge, skills and abilities required to become a graduate of The University of Akron, Fire Protection Program.

2230:296 Field Experience II (2 Credits)

Prerequisites: 30 credit hours of successfully completed course work in the Fire Protection Technology program which includes 2230:100, 2230:102, 2230:104, 2230:204, 2230:205, and 2230:280. If not currently an active fire fighter, you must take 2230:295 first. Course designed to measure the knowledge, skills and abilities required to become a front line supervisor, work in hazmat bureau or beginning arson investigator.

2230:297 Independent Study: Fire Protection (1-3 Credits)

Prerequisite: 2230:100 and permission. Selected topics and special areas of study in fire protection technology under the supervision and evaluation of a selected faculty who assigns specific arrangements.

Emergency Management and Homeland Security (2235)

2235:100 Introduction to Digital Forensics (3 Credits)

An overview of digital forensics and computer-related issues facing government and businesses. Specific focus on forensic examinations and methodologies used in the field.

2235:105 Introduction to Disaster, Hazards & Risk (3 Credits)

Provides a research based and practitioner overview of how people perceive and react to extreme events before, during, and after disasters.

2235:201 Police Academy: Administration & Legal (3 Credits)

Prerequisite: Acceptance into the Police Academy. Corequisites: 2235:202, 2235:203, 2235:204 and 2235:205. Overview of the administration and legal issues of becoming an Ohio Peace Officer.

2235:202 Police Academy: Homeland Security (3 Credits)

Prerequisite: Acceptance into the Police Academy. Corequisites: 2235:201, 2235:203, 2235:204 and 2235:205. Overview of human relations, civil disorders, investigation, and homeland security involved in becoming an Ohio Peace Officer.

2235:203 Police Academy: Traffic (3 Credits)

Prerequisite: Acceptance into the Police Academy. Corequisites: 2235:201, 2235:202, 2235:204 and 2235:205. Overview of motor vehicle offenses, traffic crash investigation, speed measuring and sobriety testing required to pass the Ohio Peace Officer Training program.

2235:204 Police Academy: Practicals I (3 Credits)

Prerequisite: Acceptance into the Police Academy. Corequisites: 2235:201, 2235:202, 2235:203 and 2235:205. Classroom and practical skills training in firearms, patrol, and driving to satisfy all state requirements for the Ohio Peace Officer Training Program.

2235:205 Police Academy: Practicals II (3 Credits)

Prerequisite: Acceptance into the Police Academy. Corequisites: 2235:201, 2235:202, 2235:203 and 2235:204. Classroom and skills in defense tactics, physical fitness and First Aid/CPR/AED & WMD Awareness to satisfy requirements to become an Ohio Peace Officer.

2235:210 Occupational Safety & Risk (3 Credits)

Introduction to the field of health and safety as related to business and industrial operations. Emphasis is placed on hazard/risk analysis and the regulatory environment.

2235:220 Environmental Law & Regulations (3 Credits)

Introduction to the legal system and to the laws and regulations dealing with water, air, land, noise and other sources of pollution.

2235:221 Environmental Law & Regulations II (3 Credits)

Prerequisite: 2235:220 and permission. Designed to provide students the opportunity to apply common regulatory reporting mechanisms in a practical manner utilizing a variety of software programs recognized in the environmental field.

2235:230 Water & Atmospheric Pollution (3 Credits)

Prerequisites: 2235:105 and 3100:104. Basic concepts of aquatic and atmospheric systems and the processes which pollute them. Emphasis on control and monitoring of cultural, industrial, and agricultural pollution sources. Laboratory.

2235:232 Environmental Sampling Laboratory (2-3 Credits)

Corequisite: 2235:230. Field experience with a wide range of environmental sampling techniques and equipment.

2235:280 Cybercrime (3 Credits)

Examines crime and deviance in cyberspace. Particular focus is on the prevention of computer intrusion in the workplace.

2235:281 Computer Forensic Methods (3 Credits)

Prerequisite: 2235:100. Examination of computer forensic methods employed to identify, collect, recover, authenticate, preserve, analyze, and document electronic evidence for criminal or civil legal purposes.

2235:282 Digital Forensic Imaging (3 Credits)

This course cover the general principles of photography and practical elements and advanced concepts of forensic photography.

2235:283 Cyber Warfare (3 Credits)

Prerequisite: 2235:100 or 3800:100. Examines the participants, tools and techniques in digital conflicts and explores how to defend against espionage, hactivism, non-state actors and terrorists.

2235:284 Windows Forensics (3 Credits)

Prerequisite: 2235:281. An examination of the tools, methodology, and advanced digital forensic analysis of the Windows Registry and the Microsoft Windows operating systems.

2235:285 Disasters in Film and Media (3 Credits)

Examines how contemporary culture perpetuates myths of natural and technological disasters. Students deconstruct and analyze reality from the myths in various types of media.

2235:305 Principals of Emergency Management and Homeland Security (3 Credits)

An overview of emergency management and homeland security history, theory, terms, concepts, organization, and roles. Emphasizes natural and technological hazards, and risk assessment processes.

2235:340 Disaster Research Methods (3 Credits)

Introduction to scientific method and processes, research ethics, and qualitative and quantitative methods. Use of research for appropriate decision making.

2235:350 Disaster Preparedness & Response (3 Credits)

Prerequisite: 2235:305. Legal requirement, planning formats, and response procedures are presented. Special focus community risk assessment: hazard analysis, vulnerability assessment, and community response capability assessment.

2235:360 Introduction to Terrorism (3 Credits)

Corequisite: 2235:305. Examines terrorism from historical, international, transnational, and domestic perspectives. Includes political and religious terrorism along with emergency management considerations.

2235:365 Disaster Mitigation (3 Credits)

Prerequisite: 2235:305. Examines disaster prevention and risk reduction. Focuses on such concepts as sustainability, resiliency, non-structural and structural mitigation and various sectors' responsibilities.

2235:367 Disaster Recovery (3 Credits)

Prerequisite: 2235:305. Provides foundations for disaster relief and recovery planning, stages of recovery, resources used, and formation of public/private partnerships for recovery action and resource allocation.

2235:368 Professionalism in Emergency Management and Homeland Security (3 Credits)

Prepares students for career entry into Emergency Management and Homeland Security areas. Professionalism, resume building, interview techniques, and resource sites will be examined.

2235:370 Hazard Science and Management (3 Credits)

Overview of hazards theory, the science of hazard development, and various hazard types. Emphasis on emergency management and homeland security perspectives in regard to various hazard management related topics.

2235:381 Computer Forensic Methods II (3 Credits)

Prerequisite: 2220:281. Obtaining and analyzing digital information from computer storage media to determine details of origin and content.

2235:382 File System Analysis (3 Credits)

Prerequisite: 2235:281. The analysis of volumes, partitions, and data files to understand the design of file systems and data structures.

2235:383 Ethical Hacking (3 Credits)

Prerequisite: 2235:283. An examination of the tools, methods, and structured approaches to conducting basic security testing to protect computer networks from attacks.

2235:384 Intelligence: Cyber and Homeland Security (3 Credits)

This course introduces students to the role and operation of the intelligence community within the homeland security framework: History, mission, structure, capabilities, and methods.

2235:401 Crisis Leadership (3 Credits)

This course presents leadership research from an interdisciplinary perspective. Content is drawn the fields of business, training, simulation, organizational theory, government, and others. This course covers early leadership theory, horizontal theories, crisis training models and approaches, and crisis cognitive processing strategies. Students will examine the overall system of building better crisis leaders.

2235:406 Disaster Management Technology (3 Credits)

Prerequisite: 2235:305. Provides an overview of the various types of technology utilized in disasters, emergency management and homeland security. Topics include communications, watches, warnings, and operational challenges.

2235:407 Hazardous Weather Observations (3 Credits)

Overview of meteorological variables and weather data useful to EM including meteorological instruments, forecasts, model, radar and satellite imagery, thunderstorms, tornadoes, winter storms and hurricanes.

2235:420 Disaster Vulnerability (3 Credits)

Prerequisite: 2235:305. Analysis of citizen actions regarding major disasters including perspectives of individuals and emergency managers using case studies, theories, and social problems.

2235:425 Private Sector Disaster Applications (3 Credits)

Prerequisite: 2235:305. Examines emergency management and homeland security business components in the private and public sectors. Emphasizes business continuity plans along with case studies in hazards and disasters.

2235:430 Contemporary Issues in Emergency Management and Homeland Security (3 Credits)

Discussion of relevant issues impacting the field of emergency management and homeland security by analyzing various case studies.

2235:435 Cyber Issues in Emergency Management and Homeland Security (3 Credits)

Prerequisite: 2235:305. Discussion and analysis of cyber issues impacting the public, private, and nonprofit sectors of emergency management and homeland security.

2235:440 Intrusion Detection (3 Credits)

Prerequisites: 2440:340 and 2440:388, both with a grade of C or better, and junior or greater standing. This course will introduce students to the various methods used to detect external and internal intrusion of computer systems.

2235:441 Network Forensics I (3 Credits)

Prerequisites: 2220:281 with a grade of C or better and junior or greater standing. This course will provide the student with basic knowledge of surveillance of networking devices, identifying and preventing attacks and incident response.

2235:442 Wireless Forensics (3 Credits)

Prerequisite: 2235:441 with a grade of C or better and junior or greater standing. The forensic identification and tracking of attacks on wireless networks and mobile communications devices.

2235:443 Network Forensics II (3 Credits)

Prerequisite: 2235:441 with a grade of C or better or junior or greater standing. Deployment, building and running an NSM operation using open source software and vendor neutral tools with the Linx Operating System.

2235:480 Emergency Management & Homeland Security Capstone (3 Credits)

Prerequisite or Corequisite: 2235:495. Ties together relevant concepts in emergency management and homeland security to help prepare graduates for professional careers integrating theory and applications.

2235:490 Current Topics in Emergency Management (1-4 Credits)

Prerequisites: 2235:305 and 2235:350. A variety of course topics on current subjects related to emergency management and disaster preparedness. May be repeated for up to 12 credits.

2235:495 Emergency Management & Homeland Security Internship (3 Credits)

Prerequisite: 30 hours in program and permission from program director. Supervised work experience in emergency management and/or homeland security to increase student understanding by applying program education to an applied work experience.

2235:497 Independent Study in Emergency Management (1-4 Credits)

Prerequisites: 2235:305 and 2235:350. Selected topics, special areas of study in emergency management, disaster preparedness under the supervision of a faculty member with whom specific arrangements have been made.

Emergency Medical Services (2240)

2240:100 Introduction to EMT Training (3 Credits)

Corequisites: 2240:101 and 2240:102. Overview of the EMS System, safety/well being of an EMT, medical/legal and ethical issues in providing emergency care.

2240:101 EMT-B Fundamentals (2 Credits)

Corequisite: 2240:100. Develop skills required of EMT-Basic for Assessment, air way management, patient evaluation for shock, trauma/special needs patient, learn appropriate interventions for all situations.

2240:102 EMT-B Fundamentals II (2 Credits)

Corequisites: 2240:100 and 2240:101. Provide students with the tools to start the EMT-Basic course and will prepare students to achieve national certification as an EMT-Basic.

2240:201 Fundamentals of EMT-Paramedic I (3 Credits)

Corequisites: 2240:202, 2240:203, 2240:204, and 2240:205. Introduction to emergency medical care-paramedic, the well-being of the EMT-paramedic, and illness and injury prevention.

2240:202 Fundamentals of EMT-Paramedic II (3 Credits)

Corequisites: 2240:201, 2240:203, 2240:204, and 2240:205. Instruction in medical/legal issues, ethics, and the paramedic, and general principles of anatomy and physiology.

2240:203 Fundamentals of EMT-Paramedic III (3 Credits)

Corequisites: 2240:201, 2240:202, 2240:204, and 2240:205. Instruction in medical math, pharmacology, venous access, and medication administration.

2240:204 Fundamentals of EMT-Paramedic IV (3 Credits)

Corequisites: 2240:201, 2240:202, 2240:203, and 2240:205. Instruction includes therapeutic communications, life span development, and airway management/ventilation.

2240:205 Fundamentals of EMT-Paramedic V (3 Credits)

Corequisites: 2240:201, 2240:202, 2240:203, and 2240:204. Skill Session Practices, competency Testing from skills learned throughout the semester.

2240:206 Fundamentals of EMT-Paramedic VI (3 Credits)

Prerequisites: 2240:201, 2240:202, 2240:203, 2240:204, and 2240:205.
Corequisites: 2240:207, 2240:208, 2240:209, and 2240:211. Instruction is respiratory emergencies and cardiovascular emergencies.

2240:207 Fundamentals of EMT-Paramedic VII (3 Credits)

Prerequisites: 2240:201, 2240:202, 2240:203, 2240:204, and 2240:205.
Corequisites: 2240:206, 2240:208, 2240:209, and 2240:211. Instruction in cardiovascular emergencies, diabetic emergencies, and allergic reactions.

2240:208 Fundamentals of EMT-Paramedic VIII (3 Credits)

Prerequisites: 2240:201, 2240:202, 2240:203, 2240:204, and 2240:205.
Corequisites: 2240:206, 2240:207, 2240:209, and 2240:211. Instruction in paramedic skills, practical trauma, and medical skills practical.

2240:209 Fundamentals of EMT-Paramedic IX (3 Credits)

Prerequisites: 2240:201, 2240:202, 2240:203, 2240:204, and 2240:205.
Corequisites: 2240:206, 2240:207, 2240:208, and 2240:211. Medical skills practical and skills testing.

2240:211 Fundamentals of EMT-Paramedic X (3 Credits)

Prerequisites: 2240:201, 2240:202, 2240:203, 2240:204, and 2240:205.
Corequisites: 2240:206, 2240:207, 2240:208, and 2240:209. Practical skills testing, client orientation, and written skills testing.