



THE GEORGE  
WASHINGTON  
UNIVERSITY  
WASHINGTON DC

The George Washington University  
Dept. of Engineering Management  
and Systems Engineering  
Institute for Crisis, Disaster, and Risk Management

## Graduate Certificate in Emergency Management and Public Health

The Graduate Certificate in in Emergency Management and Public Health is offered by the GW Department of Engineering Management and Systems Engineering (EMSE) and reflects the research and scholarship generated by the GW Institute for Crisis, Disaster, and Risk Management (ICDRM) and the School of Public Health and Health Services (SPHHS). The graduate certificate is awarded upon completion of six (6) graduate courses (see below). Additional information about application procedures and admission requirements may be found at [www.gwu.edu/~icdrm](http://www.gwu.edu/~icdrm)

Students may also enroll in the EMSE Master of Science Degree in Engineering Management with a concentration in Crisis, Emergency, and Risk Management and may transfer the credits for all six courses taken for the HS EPR certificate into their masters degree program of studies.

### Required Course:

#### **EMSE 232: Crisis and Emergency Management**

Concepts, issues and problems of crisis and emergency management are introduced. The development of crisis and contingency plans and systems, such as the National Response Plan and the National Incident Management System are described. Topics include organizing for response, managing the response organization, managing in a turbulent, high stress environment crisis decision making and crisis communication.

#### **EMSE 239: Emergency Management Health and Medical Issues**

The critical health and medical management issues involved in crises and emergencies are presented for the non medical emergency manager. The wide range of medical and health issues inherent to crises and emergencies are described. Methods for integrating medical, public health, and psychological processes into emergency management programs are developed.

#### **PubH 201: Epidemiology and Preventive Medicine**

Principles of epidemiology and preventive medicine including rates of diseases, principles of screening, descriptive epidemiology, and population dynamics. Applications to infectious diseases, chronic disease, and environmental and occupational health epidemiology.

**PubH 202: Biostatistical Applications for Public Health**

Application of biostatistical principles to critical analysis of retrospective studies, prospective studies, controlled clinical trials, and studies in the health services literature. Selection, basic calculations, and interpretation of statistical methods for associations and differences.

**Two Elective Courses:**

Students may select two of the following courses. Note that appropriate electives from other departments will be permitted with advisor's approval.

**EMSE 230: Homeland Security: The National Challenge**

The evolution of homeland security as a concept, a legal framework, a redirection of national policies and priorities is described. The issues and problems of implementation are examined. An overview of the history of the terrorist threat and U.S. responses and an introduction to fundamental policy legislation and documents, such as national security strategies, homeland security decision directives, the National Response Plan, and National Incident Management System is provided.

**EMSE 233: Information Technology in Crisis and Emergency Management**

The role of information in crisis and response management is examined. Topics include the determination of disaster and crisis information requirements; application of information technologies to crisis, disaster and emergency management; and the causes and effects of information breakdowns during crises and disasters

**EMSE 234: Management of Risk and Vulnerability for Natural and Technological Hazards and Terrorist Threats.**

The concepts required for risk-based planning and risk management are developed. Objectives of and methods for vulnerability and risk assessment for natural disaster, technological hazards, and terrorist threats and concepts of risk perception, risk communication, risk mitigation are described.

**EMSE 238: Current Issues in International Disaster Management**

The major international institutions, systems, processes and operational components involved in international crisis and disaster response encompassing natural and man-made disasters are examined. Focus is on the managerial, organizational, logistical, political, and institutional factors which enable international systems to function and provide oversight and assistance in widely divergent crisis scenarios.

**EMSE 240: Management of Mass Terrorism Preparedness and Response**

The assessment and management of vulnerability and risk associated with terrorist acts are examined. The requirements and methods of critical infrastructure protection from terrorism, technological disasters, and natural disasters are described

**EMSE 332: Crisis Management, Disaster Recovery, and Organizational Continuity**

Crisis Management, disaster recovery planning, and business continuity are described. Topics include recovery of information and communication systems, the role of the private sector in mitigation and recovery and public/private partnerships in community reconstruction and recovery.

### **EMSE 333: Hazard Mitigation in Disaster Management**

Hazard mitigation and its role in disaster management is examined. Topics include analysis of past and current government and private sector programs; examination of new approaches; structural versus non structural actions; mitigation of terrorist events.

### **EMSE 334: Environmental Hazard Management**

Geological, meteorological, radiological, chemical and biological hazards facing the U.S. and international communities are analyzed. Topics include organizational responsibilities for hazard identification and management, communication and perceptions of vulnerability, and risk challenges to local governments and communities

## **About The Department of Engineering Management and Systems Engineering (EMSE)**

The Dept. of Engineering Management and Systems Engineering (EMSE) unites the study of the management of technological organizations with mathematical modeling of engineering systems. The GW Engineering Management program, which began in 1953 to satisfy a growing need for both management training of engineers and engineering management research, is the oldest of its kind in the world. Since its creation in 1971, the systems engineering program, has had a strong orientation toward both theoretical and applied study of systems engineering and operations research. The two programs comprise one of the largest engineering management and systems engineering programs in the United States, boasting an enrollment of more than 800 undergraduate and graduate students.

EMSE offers degree concentrations in Crisis, Emergency, and Risk Management; Economics, Finance, and Cost Engineering; Engineering and Technology Management; Environmental and Energy Management; Information Security Management; Knowledge Management; Operations Research and Management Science; Software Engineering and Information Systems Management; and Systems Engineering and Integration. For more details, go to the EMSE website at: [www.emse.gwu.edu](http://www.emse.gwu.edu)

## **About The Institute for Crisis, Disaster, and Risk Management (ICDRM)**

The ICDRM interdisciplinary research institute, chartered by The George Washington University in 1994, and located in the Department of Engineering Management and Systems Engineering in the School of Engineering and Applied Science. The goal of ICDRM is to improve the disaster, emergency, and crisis management plans, actions and decisions of government, corporate, and not-for-profit organizations by transforming theory into practice. The Institute's objectives are to create and teach courses in crisis, disaster, and risk management; conduct research, and create knowledge through its research activities; and disseminate knowledge through educational programs, professional forums, and workshops. The Institute faculty and staff work to facilitate exchanges of crisis management information, knowledge, and best practices among all sectors. The Institute is engaged in both domestic and international endeavors.

The capabilities of the Institute are enhanced by its close links with other GW academic and research centers including the Political Psychology Program, the Aviation Institute, the Transportation Research Institute, and the International Institute for Tourism Studies. The

Institute provides a unique, interdisciplinary environment and has been instrumental in placing graduates in significant positions dealing with crisis, emergency, and risk management issues in public, private, and non-profit organizations.

For more details about the program, its research activities, and full faculty and staff biographical sketches, please go to the ICDRM website at: [www.gwu.edu/~icdrm](http://www.gwu.edu/~icdrm)

### **About The School of Public Health and Health Services (SPHHS)**

The School of Public Health and Health Services is the only school of public health in the nation's capital and the first school in the nation to formally combine public health and health services. Established in 1997, the school brought together three long-standing University programs -- health services, management and policy, public health, and exercise science.

The school encompasses the departments of environmental-occupational health, epidemiology-biostatistics, and health services management and policy, as well as the Center for International Health, the Center for Risk Science and Public Health, and the Center for Prevention Research.

For more information about the School of Public Health and Health Services please go to the SPHHS website at: <http://www.gwumc.edu/sphhs>