

# M.S. in Emergency Management and Business Continuity

For further details, see <http://is.njit.edu/academics/>

## Summary

Code	Title	Credits
Fundamental Courses		12
Elective Courses		6
Specialty Area Courses		12
<b>Total Credits</b>		<b>30</b>

## M.S. in Emergency Management and Business Continuity (courses only)

Code	Title	Credits
<b>Fundamental/Core Courses <sup>1</sup></b>		
IS 613	Design of Emergency Management Information Systems	3
IS 614	Command and Control Systems	3
IS 612	Emergency Management Informatics	3
IS 616	Learning Methodologies and Training Technologies	3
<b>Electives <sup>2</sup></b>		
Select two of the following:		6
HRM 601	Managing Organizational Behavior in Technology-Based Organizations	
CE 602	Geographic Information System	
EVSC 625	Social Dimensions of Risk	
<b>Specialty/Application Area</b>		
Select four courses from the following areas: <sup>3</sup>		12
<b>Critical Infrastructure</b>		
CE 671	Performance and Risk Analysis of Infrastructure Systems	
CE 672	Security Management of Critical Infrastructure	
EM 602	Management Science	
ARCH 675		
<b>Computer Engineering</b>		
ECE 644	Wireless Communications: Fundamentals to 5G	
ECE 645	Design of Wireless Networks: 5G Architecture and Services	
ECE 683	Cloud and IoT Networking and Security	
ECE 637	Internet and Higher-Layer Protocols	
ECE 639	Principles of Broadband Networks	
ECE 789	Selected Topics in Electrical and Computer Engineering II	
<b>Environmental Science</b>		
EVSC 603	Hazardous Waste Operations and Emergency Response	
EVSC 610	Environmental Chemical Science	
EVSC 611	Hazardous Waste Management	
EVSC 612	Environmental Analysis	
EVSC 613	Environmental Problem Solving	
EVSC 614	Quantitative Environmental Risk Assessment	
EVSC 616	Toxicology	
EM 631	Legal Aspects in Environmental Engineering	
<b>Information Systems</b>		
IS 631	Enterprise Database Management	
IS 634	Information Retrieval	

IS 677	Information System Principles
IS 680	Information Systems Auditing
IS 681	Computer Security Auditing
IS 687	Transaction Mining and Fraud Detection
IS 764	Research Methods for Human-Centered Computing and Design
<b>Management</b>	
ACCT 615	Management Accounting
EM 636	Project Management
FIN 600	Corporate Finance I
HRM 630	Managing Technological and Organizational Change
MIS 645	Information Technology and Competitive Advantage
or IS 677	Information System Principles
MIS 648	Decision Support Systems for Managers
MGMT 630	Decision Analysis with Quantitative Modeling
MGMT 650	Knowledge Management
MGMT 635	Data Mining and Analysis
<b>Total Credits</b>	<b>30</b>

- <sup>1</sup> Students may choose core courses in any order but we recommend students take IS 612 Emergency Management Informatics in the first semester.
- <sup>2</sup> Students who have not worked in this area are advised to consider doing a project or thesis.
- <sup>3</sup> Students may take a coherent set of four additional courses in another field that is related to Emergency Management. Usually this would be in their current professional area as specified by their undergraduate or other graduate degrees. Such courses may be applied to a second masters or a Ph.D. program in accordance with NJIT policies and program structure. Students can take all four courses in one specialty area or across several specialties as appropriate to their interests.

## M.S. in Emergency Management and Business Continuity (Master's project)

Code	Title	Credits
<b>Fundamental/Core Courses <sup>1</sup></b>		
IS 613	Design of Emergency Management Information Systems	3
IS 614	Command and Control Systems	3
IS 612	Emergency Management Informatics	3
IS 616	Learning Methodologies and Training Technologies	3
<b>Electives</b>		
IS 700B	Master's Project	3
Select one of the following:		
HRM 601	Managing Organizational Behavior in Technology-Based Organizations	3
CE 602	Geographic Information System	3
EVSC 625	Social Dimensions of Risk	3
<b>Specialty/Application Area</b>		
Select four courses from the following areas: <sup>2</sup>		12
<b>Critical Infrastructure</b>		
CE 671	Performance and Risk Analysis of Infrastructure Systems	3
CE 672	Security Management of Critical Infrastructure	3
EM 602	Management Science	3
ARCH 675		3
<b>Computer Engineering</b>		
ECE 644	Wireless Communications: Fundamentals to 5G	3
ECE 645	Design of Wireless Networks: 5G Architecture and Services	3
ECE 683	Cloud and IoT Networking and Security	3
ECE 637	Internet and Higher-Layer Protocols	3
ECE 639	Principles of Broadband Networks	3
ECE 789	Selected Topics in Electrical and Computer Engineering II	3

<b>Environmental Science</b>	
EVSC 603	Hazardous Waste Operations and Emergency Response
EVSC 610	Environmental Chemical Science
EVSC 611	Hazardous Waste Management
EVSC 612	Environmental Analysis
EVSC 613	Environmental Problem Solving
EVSC 614	Quantitative Environmental Risk Assessment
EVSC 616	Toxicology
EM 631	Legal Aspects in Environmental Engineering
<b>Information Systems</b>	
IS 631	Enterprise Database Management
IS 634	Information Retrieval
IS 677	Information System Principles
IS 680	Information Systems Auditing
IS 681	Computer Security Auditing
IS 687	Transaction Mining and Fraud Detection
IS 764	Research Methods for Human-Centered Computing and Design
<b>Management</b>	
ACCT 615	Management Accounting
EM 636	Project Management
FIN 600	Corporate Finance I
HRM 630	Managing Technological and Organizational Change
MIS 645	Information Technology and Competitive Advantage
or IS 677	Information System Principles
MIS 648	Decision Support Systems for Managers
MGMT 630	Decision Analysis with Quantitative Modeling
MGMT 650	Knowledge Management
MGMT 635	Data Mining and Analysis
<b>Total Credits</b>	<b>30</b>

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## M.S. in Emergency Management and Business Continuity (Master's thesis)

Code	Title	Credits
<b>Fundamental/Core Courses</b> <sup>1</sup>		
IS 613	Design of Emergency Management Information Systems	3
IS 614	Command and Control Systems	3
IS 612	Emergency Management Informatics	3
IS 616	Learning Methodologies and Training Technologies	3
<b>Thesis</b>		
IS 701C	Master's Thesis	6
<b>Specialty/Application Area</b>		
Select four courses from the following areas: <sup>2</sup>		12
<b>Critical Infrastructure</b>		
CE 671	Performance and Risk Analysis of Infrastructure Systems	
CE 672	Security Management of Critical Infrastructure	
EM 602	Management Science	
ARCH 675		

**Computer Engineering**

ECE 644	Wireless Communications: Fundamentals to 5G
ECE 645	Design of Wireless Networks: 5G Architecture and Services
ECE 683	Cloud and IoT Networking and Security
ECE 637	Internet and Higher-Layer Protocols
ECE 639	Principles of Broadband Networks
ECE 789	Selected Topics in Electrical and Computer Engineering II

**Environmental Science**

EVSC 603	Hazardous Waste Operations and Emergency Response
EVSC 610	Environmental Chemical Science
EVSC 611	Hazardous Waste Management
EVSC 612	Environmental Analysis
EVSC 613	Environmental Problem Solving
EVSC 614	Quantitative Environmental Risk Assessment
EVSC 616	Toxicology
EM 631	Legal Aspects in Environmental Engineering

**Information Systems**

IS 631	Enterprise Database Management
IS 634	Information Retrieval
IS 677	Information System Principles
IS 680	Information Systems Auditing
IS 681	Computer Security Auditing
IS 687	Transaction Mining and Fraud Detection
IS 764	Research Methods for Human-Centered Computing and Design

**Management**

ACCT 615	Management Accounting
EM 636	Project Management
FIN 600	Corporate Finance I
HRM 630	Managing Technological and Organizational Change
MIS 645 or IS 677	Information Technology and Competitive Advantage Information System Principles
MIS 648	Decision Support Systems for Managers
MGMT 630	Decision Analysis with Quantitative Modeling
MGMT 650	Knowledge Management
MGMT 635	Data Mining and Analysis

**Total Credits****30**

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**Specialty/Application Area**

There is an advisor for each specialty area that may be contacted for questions on that specialty area and for advice on choosing courses. The specialty areas currently include:

**Critical Infrastructure**

Critical Infrastructure focuses on planning issues, maintainability and safety engineering, vulnerability analysis, hazard/crisis impact analysis and mitigation, infrastructure inter-dependencies, rehabilitation technologies, condition assessment, problem detection, diagnosis and process propagation, and program management. Students with an undergraduate degree in civil engineering and related engineering disciplines would be encouraged to consider this specialty area.

## **Computer Engineering**

The design and assurance of communication infrastructure is critical to all aspects of emergency management. Being able to evaluate and insure the mitigation of vulnerabilities for such systems is an important contribution to the infrastructure survivability of such systems. Students with an undergraduate degree in Computer Engineering are encouraged to consider this specialty area.

## **Environmental Science**

With the increasing complexity of our society comes severe risk of the accidental and deliberate release of a wide range of hazardous materials, both chemical and biological. Those trained to be able to make a meaningful contribution to the understanding of the associated risks, how to detect and track the implications of their occurrence, and how to respond meaningfully to their mitigation represent an important professional talent that needs to be available in the Emergency Management and Business Continuity Area. All organizations dealing with hazardous materials should have this sort of talent in their Emergency Management team.

## **Information Systems**

The application of computing information and communication in the Emergency Management and Business Continuity field represents the potential use of technology to integrate all the functions that must take place before, during, and after the disaster, as well as among the different organizations and units of organizations that must be involved in the preparedness, response, and recovery. Information systems are the glue that puts together planning, mitigation, detection, training, command and control, response, and recovery into one unified process that provides the necessary infrastructure for the overall responsibilities. As such, they must be designed and developed with the evolving needs of the users and the organizations integrated into the development process.

## **Management**

The professionals in Emergency Management must be able to integrate the development of plans for response processes (within their organization and across necessary external organizations). They must also ensure that everyone will receive adequate training and that in times of disaster those involved can work as well motivated and coordinated teams, no matter what degree of heterogeneity of expertise and level of experience exists among respondents. The emergency manager or business continuity professional must be able to be an entrepreneur or champion of emergency preparedness, and to prove and present people the best possible justifications for investing in an organizational function that may not be viewed as absolutely necessary by all those concerned, especially in times of restricted budgets. He or she must be able to stimulate planning, communication, and coordination among all parts of the organization or organizational units necessary to bring about effective crisis planning and response.