M.S. in Critical Infrastructure Systems

Degree Requirements

A minimum of 30 degree credits, not including any bridge courses, is required. Candidates must consult with the graduate advisor (not thesis advisor) in designing appropriate programs of study.

Students must attain a minimum GPA of 3.0 in the core courses listed below, and a minimum overall GPA of 3.0.

Master of Science in Critical Infrastructure Systems

Code	Title	Credits
Core Courses		
4 Core Courses are required and are: [1]		12
CE 671	Performance and Risk Analysis of Infrastructure Systems	
CE 672	Security Management of Critical Infrastructure	
EM 602	Management Science	
MIP 675	Elements of Infrastructure Planning	
Electives		
Select six courses (or 4 courses and a Thesis) from the following:		18
Critical Infrastructure Life-Cycle Management (CILC)		
Planning and Facilities Management:		
CE 602	Geographic Information System	
CE 615	Infrastructure and Facilities Remediation	
Engineered Systems:		
TRAN 705	Mass Transportation Systems	
ECE 610	Power System Steady-State Analysis	
ECE 637	Internet and Higher-Layer Protocols	
ECE 683	Computer Network Design and Analysis	
ECE 673	Random Signal Analysis I	
ECE 642	Communication Systems I	
Program/Impact Management:		
CE 610	Construction Management	
CE 611	Project Planning and Control	
CE 616	Construction Cost Estimating	
IE 651	Industrial Simulation	
IE 605	Engineering Reliability	
IE 614	Safety Engineering Methods	
ENE 662	Site Remediation	
ENE 663	Water Chemistry	
ENE 671	Environmental Impact Analysis	
HRM 601	Organizational Behavior	
Critical Infrastructure Security and Emergency Management (CISE)		
Emergency and Preparedness Management (Joint UMDNJ):		
IS 613	Design of Emergency Management Information Systems	
IS 614	Command and Control Systems	
Enabling Systems and Technologies:		
MIS 648	Decision Support Systems for Managers	
TRAN 615	Traffic Studies and Capacity	
TRAN 752	Traffic Control	
TRAN 755	Intelligent Transportation Systems	
EM 771	Operations Cost and Management Control	
MGMT 635	Data Mining and Analysis	

MGMT 650	Knowledge Management
CS 631	Data Management System Design
CS 632	Advanced Database System Design
CS 782	Pattern Recognition and Applications
IE 706	A Queueing Approach to Performance Analysis
IE 621	Systems Analysis and Simulation
Public Health Systems and Emergency Preparedness:	
RBHS Courses	
Principles and Methods of Epidemiology	
Introduction to Environmental Health	
Public Health Preparedness I:Agents of Mass Injury or Destruction	
Public Health Preparedness II:Emergency Management and Response	
Health/Risk Communications	
Other Electives: Master's Thesis [2]	
Total Credits	30

1 Students receiving financial aid at any point in their studies must complete 6 credits of CE 701 Masters Thesis.

2 Other suitable electives may be taken subject to approval of program advisor, particularly in the area of Public Health Systems and Emergency Preparedness.