

Course number		U-LAS63 10010 LE24						
Course title (and course title in English)		Emergency Management-E2 Emergency Management-E2			Instructor's name, job title, and department of affiliation		Graduate School of Agriculture Distinguished Visiting Associate Professor,Edirisinghe Jayalath AG Hemasiri Graduate School of Agriculture Professor,FUJIHARA MASAYUKI	
Group	Interdisciplinary Sciences			Field(Classification)		Other Interdisciplinary Sciences		
Language of instruction	English			Old group		Number of credits		2
Hours	30	Class style	Lecture (Face-to-face course)			Year/semesters	2025 • Intensive, First semester	
Days and periods	Intensive		Target year	All students		Eligible students	For all majors	
[Overview and purpose of the course]								
Course Description:This course focuses on developing essential emergency management skills required for effectively responding to disasters and crises. Through interactive lectures, practical exercises, and real-world case studies, students will gain a comprehensive understanding of disaster risk assessment, emergency planning, crisis decision-making, and coordinated response efforts. The course covers key topics such as types of disasters, emergency management frameworks, resource allocation, and historical case studies to highlight best practices and challenges in disaster response. Emphasis will be placed on proactive planning, rapid decision-making, and inter-agency collaboration to enhance resilience and efficiency in emergency situations.								
[Course objectives]								
The Emergency Management course equips students with essential skills for handling disasters and crises. Through a blend of theory and practice, students will learn risk assessment, disaster preparedness, response coordination, and recovery planning.								
By course completion, students will develop critical decision-making, resource management, and teamwork skills for crisis situations. The course emphasizes emergency planning, situational analysis, crisis leadership, and inter-agency coordination. Through interactive lectures, hands-on exercises, and case studies, students will gain practical insights into disaster response and resilience strategies.								
[Course schedule and contents)]								
Course Outline: Sessions 1-2: Introduction to Emergency Management <ul style="list-style-type: none"><li>• Definition and Scope of Emergency Management</li><li>• Types of Disasters and Emergencies (Natural, Technological, Human-Made)</li><li>• Emergency Management Frameworks (FEMA Model, UNISDR, Sendai Framework)</li><li>• Historical Case Studies of Emergency Response Failures and Successes</li></ul> Sessions 3-4: Risk Assessment and Hazard Analysis <ul style="list-style-type: none"><li>• Identifying Hazards and Risks</li><li>• Quantitative vs. Qualitative Risk Assessment</li><li>• Probability and Statistics in Risk Analysis</li><li>• Use of Geographic Information Systems (GIS) in Emergency Management</li><li>• Case Study: Risk Assessment of Earthquakes, Floods, and Industrial Accidents</li></ul> Sessions 5-6: Decision-Making under Uncertainty								
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## Emergency Management-E2(2)

- Decision Trees and Expected Monetary Value (EMV) Analysis
- Bayesian Analysis in Emergency Management
- Game Theory in Disaster Response Scenarios
- Case Study: Decision-Making for Evacuation Planning

### Sessions 7-8: Critical Path Method (CPM) in Disaster Recovery Planning

- Basics of Project Management in Emergencies
- Understanding the Critical Path Method (CPM)
- Constructing CPM Networks for Disaster Recovery
- Optimizing Response and Resource Allocation using CPM
- Hands-on Exercise: Developing a CPM Model for Post-Disaster Reconstruction

### Sessions 9-10: Program Evaluation and Review Technique (PERT) for Emergency Response

- Introduction to PERT and Its Applications in Emergency Management
- Activity Sequencing and Time Estimation in PERT
- Probabilistic Analysis of Emergency Response Time Using PERT
- Comparison of PERT vs. CPM in Crisis Situations
- Hands-on Exercise: Creating a PERT Chart for Disaster Recovery Efforts

### Sessions 11-12: Logistics and Resource Optimization in Emergencies

- Supply Chain Management during Disasters
- Optimization Models for Resource Distribution (Linear Programming Basics)
- Network Flow Models for Disaster Relief Operations
- Case Study: Food and Medicine Supply Distribution in a Disaster Zone

### Sessions 13-14: Communication and Coordination in Crisis Management

- Importance of Communication in Disaster Response
- Crisis Communication Strategies and Psychological Preparedness
- Application of Social Media and AI in Emergency Management
- Game-Theory-Based Coordination of Emergency Services

Session 15 : Feed back and Evaluations

### [Course requirements]

Basic ability in English language, fair knowledge on computer literacy

### [Evaluation methods and policy]

Assessment includes i) in-class activities, such as scenario-based simulations, risk assessment drills, and crisis decision-making exercises [ 20%]. ii) Students will engage in team-based simulations, case study analysis, and practical exercises on emergency communication and resource management[ 30%]. Group projects and presentations will evaluate teamwork and strategic planning skills [ 20% ], end-semester exam will assess theoretical understanding and application of emergency management principles.[ 30% ]

### [Textbooks]

William L. Waugh Jr., Kathleen J. Tierney 『Emergency Management: Principles and Practice for Local Government (2nd Edition)』 ( International City/County Management Association (ICMA) ) ISBN:978-0873267199

Havidán Rodríguez, Enrico L. Quarantelli, Russell R. Dynes, 『Handbook of Disaster Research』 ( Springer ) ISBN:978-3319632537

『The Sendai Framework for Disaster Risk Reduction 2015-2030』 ( United Nations Office for Disaster Risk Reduction (UNDRR) )

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## Emergency Management-E2(3)

### [References, etc.]

#### ( References, etc. )

George Haddow, Jane Bullock, Damon P. Coppola 『Introduction to Emergency Management (7th Edition)』  
( Butterworth-Heinemann (Elsevier) ) ISBN:978-0128171394  
Larry R. Collins 『Disaster Management and Preparedness』 ( Lewis Publishers ) ISBN:9781138581715  
Louise K Comfort 『Crisis and Emergency Management: Theory and Practice (2nd Edition)』 ( CRC Press )  
ISBN:9781420013672

#### ( Related URL )

<https://www.fema.gov>

<https://www.undrr.org>

### [Study outside of class (preparation and review)]

short news clip on a recent emergencies in Japan, Read assign chapters of books mentioned and prepare a brief report, Watch a disaster documentary

### [Other information (office hours, etc.)]

May follow FEMA Emergency Management Institute (EMI) Online Courses :<https://training.fema.gov/is/>

### [Essential courses]