

科目ナンバリング		U-LAS63 10010 LE24							
授業科目名 <英訳>		Emergency Management-E2 Emergency Management-E2			担当者所属 職名・氏名		農学研究科 農学研究科 特別招へい准教授 Edirisinghe Jayalath AG Hemasiri 教授 藤原 正幸		
群	統合科学科目群			分野(分類)	その他統合科学			使用言語	英語
旧群		単位数	2単位	時間数	30時間	授業形態	講義（対面授業科目）		
開講年度・ 開講期	2025・ 前期集中		曜時限	集中		配当学年	全回生	対象学生	全学向
【授業の概要・目的】									
<p>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.</p>									
【到達目標】									
<p>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.</p> <p>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.</p>									
【授業計画と内容】									
<p>Course Outline:</p> <p>Sessions 1-2: Introduction to Emergency Management</p> <ul style="list-style-type: none"> • Definition and Scope of Emergency Management • Types of Disasters and Emergencies (Natural, Technological, Human-Made) • Emergency Management Frameworks (FEMA Model, UNISDR, Sendai Framework) • Historical Case Studies of Emergency Response Failures and Successes <p>Sessions 3-4: Risk Assessment and Hazard Analysis</p> <ul style="list-style-type: none"> • Identifying Hazards and Risks • Quantitative vs. Qualitative Risk Assessment • Probability and Statistics in Risk Analysis • Use of Geographic Information Systems (GIS) in Emergency Management • Case Study: Risk Assessment of Earthquakes, Floods, and Industrial Accidents <p>Sessions 5-6: Decision-Making under Uncertainty</p> <ul style="list-style-type: none"> • 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 <p>Sessions 7-8: Critical Path Method (CPM) in Disaster Recovery Planning</p> <ul style="list-style-type: none"> • Basics of Project Management in Emergencies 									
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Emergency Management-E2(2)

- 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

【履修要件】

Basic ability in English language, fair knowledge on computer literacy

【成績評価の方法・観点】

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%]

【教科書】

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))

【参考書等】

(参考書)

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

Emergency Management-E2(3)へ続く

Emergency Management-E2(3)

(関連 U R L)

<https://www.fema.gov>

<https://www.undrr.org>

【授業外学修（予習・復習）等】

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

【その他（オフィスアワー等）】

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

【主要授業科目（学部・学科名）】