



Week 1

Introduction to Risk Management

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bci Member
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IEEE Senior Member

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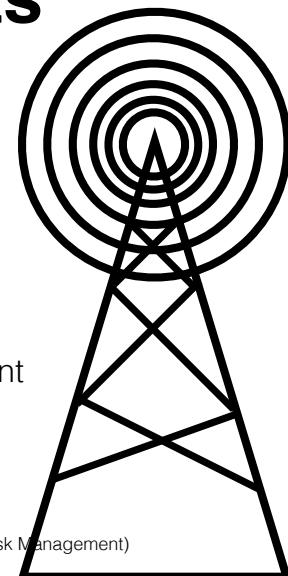
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DES489 Topics in Computer Information Systems III (Topic: Risk Management) :: August 13, 2022

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- Fundamental of Risk Management



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Assoc. Prof. Natt Leelawat, D.Eng., MBCI



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Director of Risk and Disaster Management Program, Graduate School, Chulalongkorn University
Assistant Dean for Communications and International Affairs, Faculty of Engineering, Chulalongkorn University
Head of Disaster and Risk Management Information Systems Research Unit, Chulalongkorn University
Associate Professor in Industrial Engineering, Faculty of Engineering, Chulalongkorn University
IEEE Senior Member
Columnist, Risk Reduction Column of TPA News Magazine, Technology Promotion Association (Thailand-Japan)
Regional Advisory Committee of Asia Oceania Geosciences Society (Singapore)
Moderator of Pood Ja Prasa Chang Program FM 101.5 MHz

Education

Bachelor of Science (1st Class Honours) Information Technology, Sirindhorn International Institute of Technology, TU
Master of Engineering in Industrial Engineering and Management, Tokyo Institute of Technology (Japan)
Doctor of Engineering in Industrial Engineering and Management, Tokyo Institute of Technology (Japan)

Certificates

Member of Business Continuity Institute (0588022) (UK)
Certified AI/OT Fundamental Test Global (0003G) (Japan)
Certified of Business Continuity Institute (0588022) (UK)
Toyota way Management System Grade-4 (TMS4-J203208) (Japan)
Analyse Organisation's Dependencies That May Impact on Business Continuity and Performance
SkillFuture (No. 180000000753567) (Singapore)
DEMO Bachelor Certified Enterprise Engineer, Enterprise Engineering Institute (Netherlands)
Certified Fundamental Information Technology Engineer (THFE08S007) (Thailand)

Work Experience

2007 ~ 2009 Bank of Thailand
System Analyst

2016 ~ 2017 Tohoku University (Japan)
Assistant Professor

2017 ~ present Chulalongkorn University
Lecturer
Assistant Professor
Associate Professor



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Area of Interest



https://www.titech.ac.jp/english/globalization/stories/alumni_story.html



คลิปนี้มีหัวข้อเรื่องเพื่อสอนเรื่องความต้องการของ :: ดร.นัฐ ลีลาวัณน์ :: D.Eng.
(Industrial Engineering and Management) Tokyo Institute of

Disaster and Risk Management

DRM
Statistical analysis in disaster management
Preparedness, response, recovery, and prevention
Potential factors to disaster impact and phenomena

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Management Information Systems

MIS
Data science and data analytics
Simulation and modeling
IT use/acceptance and social network analysis

Business process management

Business Continuity Management

BCM
Area business continuity management
Awareness, dissemination, and training in BCM

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Awards

- 01 2021 Best Paper Award IEEE ICA-SYMP 2021 (Thailand)
- 02 2019 Young Outstanding Alumni Award Tokyo Tech Alumni Association (Thailand Chapter)
- 03 2018 Coastal Engineering Journal Citation Award Japan Society of Civil Engineers (Japan)
- 04 2018 Sakintana's Young Lecturer Award Chula Engineering (Thailand)
- 05 2018 Selected Representatives of Thailand 6th Global Young Scientists Summit (Singapore)
- 06 2016 Finalist of Young Innovator of the Year Falling Walls Lab (Germany)
- 07 2016 3rd PLACE Award Falling Walls Lab Sendai (Japan)



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More info: <https://sites.google.com/site/nattleelawat/awards>

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Course Introduction

- **Course Number:** DES489
- **Course Credit:** 3
- **Course Title:** Topics in Computer Information Systems III (Topic: Risk Management)
- **Instructor:** Assoc. Prof. Natt Leelawat, D.Eng.
Email: natt.aj@siit.tu.ac.th
- **Schedule:** Saturday, 09:00-12:00 (1/2022)
- **Classroom:** RS1-410

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Recent Int. Journal Publications

- A stakeholder analysis approach for area business continuity management:
A systematic review
Journal of Disaster Research, 15 (5), 2020 (Scopus Q2)
- The acceptance of using information technology for disaster risk management: A systematic review
Engineering Journal, 24 (4), 2020 (Scopus Q2)
- Trends of tweets on the Coronavirus Disease-2019 (COVID-19) Pandemic
Journal of Disaster Research, 15 (4), 2020 (Scopus Q2)
- Today in Thailand: Multidisciplinary perspectives on the current tsunami disaster risk reduction
Geological Society, London, Special Publications: Vol. 501, 2020 (Scopus Q1)

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- Disaster emergency response plan of Royal Thai Embassy in Tokyo, Japan: A review
Journal of Disaster Research, 14 (7), 959-971, 2019 (Scopus Q2)
- Factors affecting to long-term relationship of outsourcing: A case study of Thailand
Journal of Administrative and Business Studies, 5 (5), 281-290, 2019
- Load-resistance analysis: an alternative approach to tsunami damage assessment applied to the 2011 Great East Japan tsunami
Natural Hazards and Earth System Sciences, 19, 1807-1822, 2019 (Scopus Q1/ISI)
- Influencing factors of Japanese visitors and non-visitors in visiting Thailand
International Journal of Recent Technology and Engineering, 8(1CR), 864-870, 2019

More info: <https://sites.google.com/site/nattleelawat/publication>

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Course Objectives

- To provide adequate **background on risk management**
- To train students to be able to **identify risks in the enterprise** and **recommend the suitable strategy for the organizations**

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Textbooks

- Main textbook
 - Risk Management: Concepts and Guidance (2015)
by Carl L. Pritchard
- Supplementary books
 - The Orange Book Management of Risk-Principles and Concepts (2004)
by HM Treasury
 - Natural Hazards: Earth's Processes and Hazards, Disasters, and Catastrophes (2015)
by A. K. Keller and D. E. DeVecchio
 - and others

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Evaluation

- Mid-term Examination 30%
- Final Examination 30%
- Participation and Assignment 10%
- Term Project and Presentation
 - Mini Project A: Report & Presentation 10%
 - Mini Project B: Report & Presentation 20%
- Grading: Application of group-based grading criteria

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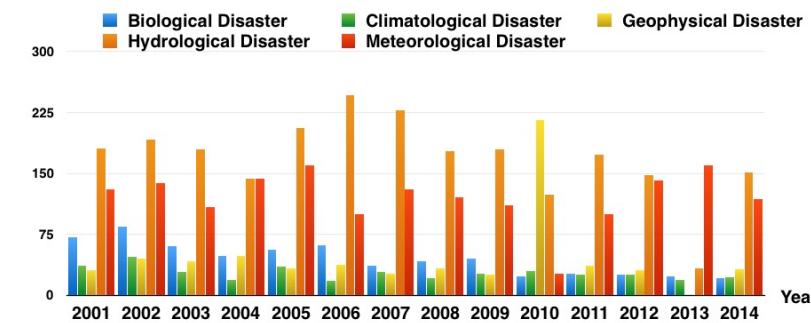
Term Project

- Mini A: Case Study Analysis (Mini Research)
- Mini B: Business Continuity Management

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Natural Disasters in the World

Occurrence (unit: times)



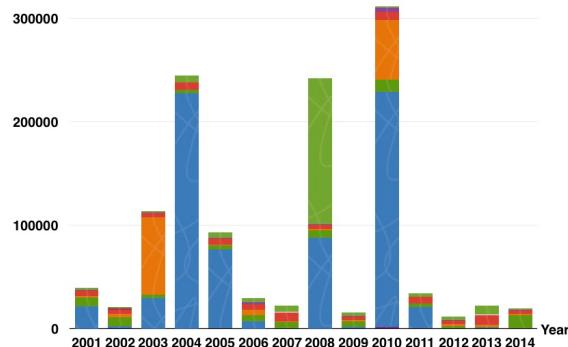
Source: Guha-Sapir et al. (2015)

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Fatalities from Natural Disasters

Number of Deaths (unit: persons)

Drought Earthquake Epidemic Extreme Temperature
Flood Insect Infestation Landslide Mass Movement
Storm Volcanic Activity Wildfire



Source: Guha-Sapir et al. (2015)

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Video created by Kittiya Yampiromsri (2018)

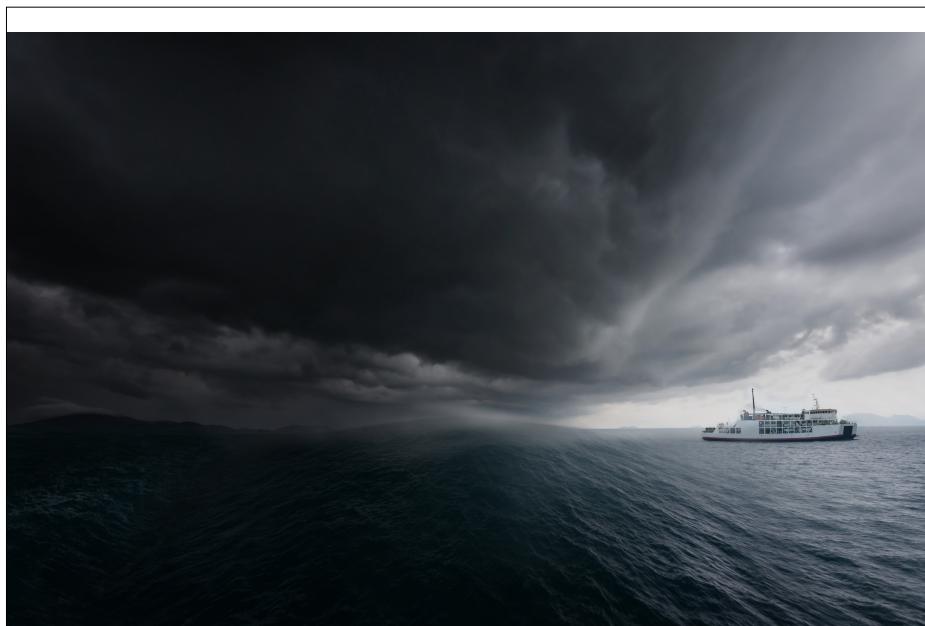
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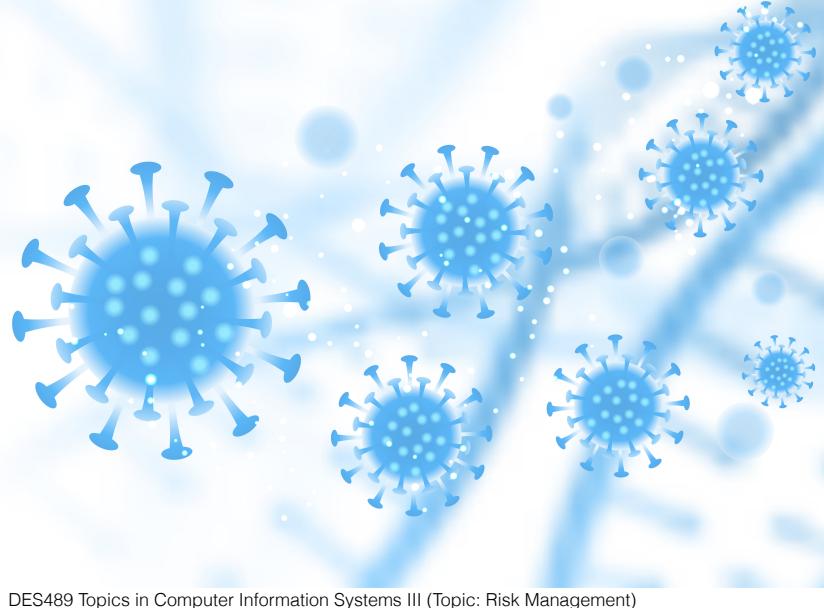
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Risk vs. Uncertainty

- **Risk:** “Cumulative effect of the probability of uncertain occurrences that may positively or negatively affect project objectives”
- **Uncertainty considers only the event and where the probability is completely unknown**

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Source: Pritchard (2015); Ward (2008, p. 353)

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Risk

- **Uncertainty of outcome of actions and events**
- **Positive opportunity or negative threat**
- **Be assessed in respect of the combination of the likelihood of something happening and the impact which arises if it does actually happen**



Source: HM Treasury (2004)

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Airline

- Although the probability of a crash is low, the consequences are generally grave
- Many people feel uncomfortable about flying because of the consequences of failure BUT most people do NOT consider flying a high risk



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Source: Pritchard (2015)
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Nature of Risk

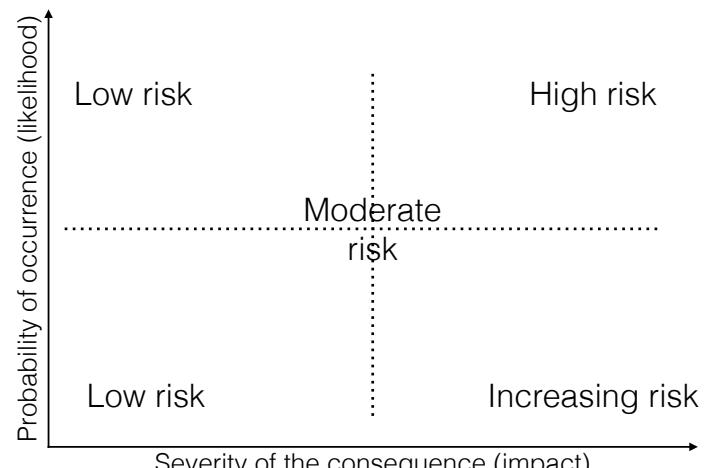
- Event
 - Probability
 - Severity (or impact)
-
- Probability and impact of a plane crash at the gate are far different from the probability and impact of a place crash from an altitude of 30,000 feet

Source: Pritchard (2015)
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Concept of Risk



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Source: Pritchard (2015)
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Nature of Risk

- Event
 - Probability
 - Severity (or impact)
-
- Probability and impact of a plane crash at the gate are far different from the probability and impact of a place crash from an altitude of 30,000 feet



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Homework

- Homework01 Who am I? (Due Aug 14, 2022, 23:59 ICT)

- 1. Write your short profile and information

- Full name

- Student ID

- Expectation of taking this course

- Your interest of recent 2016-2019 risk and disaster case
(Ex. 2018 Tham Luang Cave Rescue, 2018 Sulawesi Earthquake and Tsunami, 2019 Pabuk Tropical Storm, etc.)

- 2. Upload your photo

- Your photo will be presented in the class for attendance checking

- 3. Submit it via <https://forms.gle/QGaPaZoytQDkReRc7>

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Next week: Aug 20, 2022

Contact

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APRU CHULA ENGINEERING RDM Chula

THE 17th APRU MULTI-HAZARDS SYMPOSIUM 2022 (HYBRID)

November 29 - 30, 2022
Mandarin Hotel Bangkok Samyan, Thailand

CALL FOR ABSTRACTS

Theme INNOVATION TOWARD SUSTAINABLE GROWTH AND DISASTER RISK REDUCTION

Topics

- 1. Innovation for Disaster Risk Reduction
- 2. Engineering and Infrastructure for Disaster Risk Reduction
- 3. Community Health and Well-being for Disaster Risk Reduction
- 4. Social and Governing Policies/Socio-economic Issues in Disaster Management
- 5. Building Community Resilience in Disaster Management
- 6. Disaster Communication in Disaster Management

Important Dates

- > Abstract Submission: 1 May - 31 July 2022
- > Acceptance Notification: 16 August 2022
- > Early Bird Registration: 1 - 31 August 2022
- > Normal Registration: 1 - 30 September 2022
- > Event Date: 29 - 30 November 2022

Submission Link

Submit your abstract at the QR code or the link.
shorturl.at/IH28

"As the world is developing, it is our goal to reduce the disaster losses by creating Sustainable Innovations from the multidisciplinary knowledge."

Prof. Supot Techaravasinskun, D.Eng.
Dean of Faculty of Engineering, Chulalongkorn University



Nowadays, our world has been impacted by multiple hazards, including one of the most severe pandemics, COVID-19, since the end of 2019. For each time, the affected countries were facing issues based on lives. Also, the cooperation between people from various fields of knowledge and operation, whether in engineering, social science, communication, and other disciplines, is required to mitigate the impact of these hazards, including preparedness, response, recovery, and mitigation. Therefore, we must mitigate future disasters' impact using innovation toward sustainable growth and disaster risk reduction.

We are pleased to welcome you to the 17th APRU Multi-Hazards Symposium 2022, Bangkok, Thailand.

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