

# 國立臺北大學自然資源與環境管理研究所

## 102 學年度第二學期 『環境災害與風險管理』

課程講義 (1)：課程簡介、基本定義與相關概念  
Introduction, Fundamental Definitions, and Related Concepts

- INTRODUCTION TO THIS COURSE

- 進度安排
- 作業、考試與評分方式
- 參考書籍與資料
- 講義提供: <http://web.ntpu.edu.tw/~yml/download/risk2014s/>  
<https://www.box.com/ntpu-inrm-prof-lee-classes> => risk2014s

### Part One: The Nature of Hazard

1. Hazard in the Environment
2. Dimensions of Disaster
3. Complexity, Sustainability and Vulnerability
4. Risk Assessment and Management
5. Reducing the Impacts of Disaster

### Part Two: The Experience and Reduction of Hazard

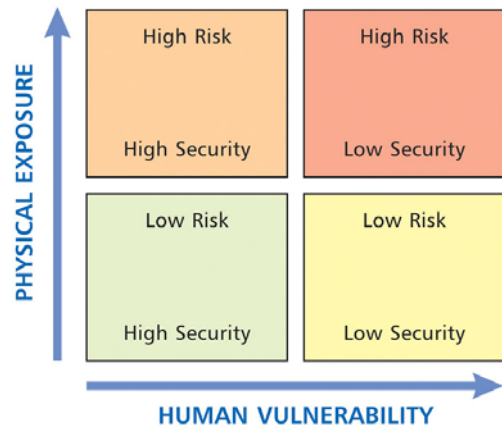
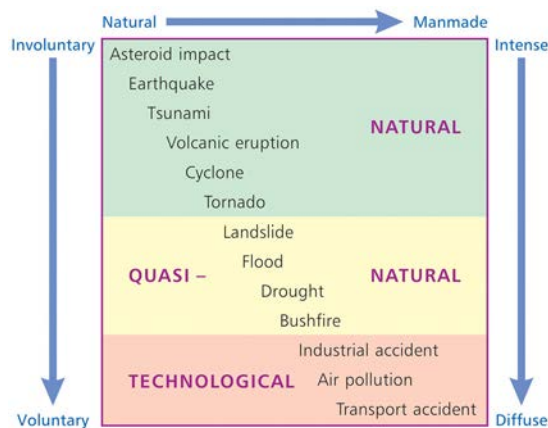
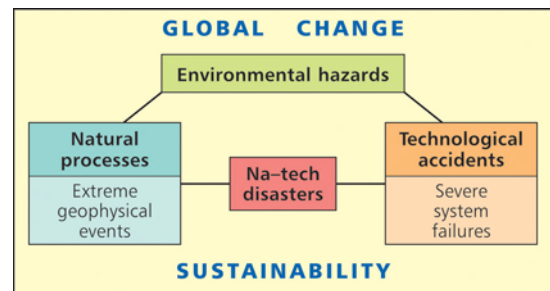
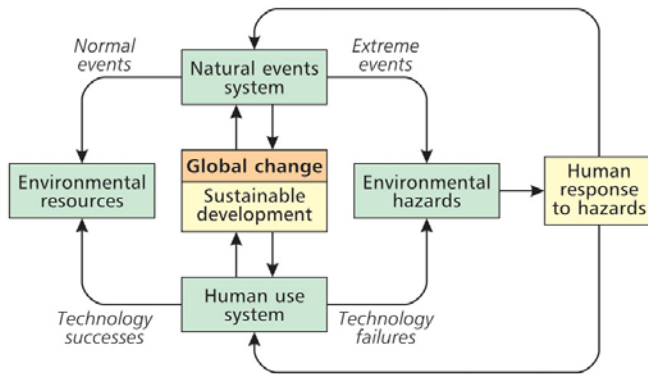
6. Tectonic Hazards - Earthquakes and Tsunamis
7. Tectonic Hazards - Volcanoes
8. Landslide and Avalanche Hazards
9. Severe Storm Hazards
10. Weather Extremes, Disease Epidemics and Wildfires
11. Hydrological Hazards - Floods
12. Hydrological Hazards - Droughts
13. Technological Hazards
14. Environmental Hazards in a Changing World

- DEFINITIONS OF HAZARD, DISASTER AND RISK

- Hazard 危害、Risk 危機/風險、Disaster 災害 (S. p.11)
  - ⇒ **Hazard (cause)** -- a potential threat to humans and their welfare arising from a dangerous phenomenon or substance that cause loss of life, injury, property damage and other community losses or damage.
  - ⇒ **Risk (likely consequence)** -- the combination probability of a hazardous event and its negative consequences.
  - ⇒ **Disaster (actual consequence)** -- a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses or impacts which exceed the ability of the affected community or society to cope using its own resources.
  - ⇒ “Risk is opportunity” (Risk or Crisis) = (Danger + Opportunity)
  - ⇒ RISK = Hazard Probability × Elements at Risk × Vulnerability (S.p.71)

- ENVIRONMENTAL HAZARDS AND RISK ASSESSMENT

- The Evolution of Environmental Hazard Paradigms
  - ⇒ Engineering, Behavioural, Development, and Complexity
- Natural Hazards and Technological Hazards => Na-Tech Disasters (Context Hazards)
- Voluntary vs. Involuntary; Natural vs. Manmade; Intense vs. Diffuse
- Risk Assessment: Safety, Health, Ecological, Public Welfare, and Financial
- Exposure and Vulnerability
  - ⇒ ‘End-Points’ vs. Scales (Temporal, Spatial, etc.): Chronic vs. Acute
  - ⇒ Risk vs. Security
- Vulnerability to Disasters
  - ⇒ Vulnerability and Resilience => Reliability



- Homework Assignment #1 (2014/03/07 Due)

1. 請用你自己的文字定義說明“Hazard, Risk and Disaster”及“Vulnerability, Resilience and Reliability”。
2. 請比照上述組合方式提出一組與風險管理相關之名詞組合，並定義說明之。
3. 請比較說明 Na-Tech Disasters、Context Hazards 與「複合式災害」之差異。