

Introduction to Engineering for Water Disaster Mitigation (2112-681)

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Content

- Introduction to water disaster resilience, causes and mitigation of flood disaster, basic concept of designing flood mitigation and beach erosion protection, risk in hydrologic, hydraulic and coastal engineering, field trip to water disaster prone areas

Objectives

Students are expected to gain

- Describe the principles of water disasters occurrences (flood, coastal erosion, landslides etc.);
- Describe the mitigation measures via literature review and field visit;

Course outline

- Introduction to Water Disaster Mitigation Engineering
- Flood Disaster
- Land Subsidence
- Coastal/river erosion
- Geohazard/environment (at Kasertsart U.)
- Project presentation

Evaluation

- Summarized Report-1 50%
- System design report-2 30%
- Presentations 20%

Tentative lecture series

- Introduction to Water Disaster Management subject (A.Sucharit)
- Disaster Management system and conditions in Thailand (A. Sucharit)
- Geohazard and Environment (Kasertsart U.)
- Concept of Probability/risk and its applications (A. Piyatida/A. Anulak)
- Disaster Management System Design (Sucharit)
- Report presentation on Dis. Mgt Term Project (A.Sucharit, A. Anulak, A. Piyatida)

October 14

- Present-1 in group (AES-2/Korea) Oct 14
- Present-2 in group (Nov-Dec Lectures + system design + recommendations) Nov 14
- Report submission within December 14

Disaster issues

- Issues from discussions (Ref 1 คลังสมอง)
- Concept of risk reduction (Ref 6, UNEP)
- Region DPRI :Workshop of Sedpri (Ref 8)

Brief-1

- ปี ๔๘ ความเห็นจากคลังสมอง วปอ
 - ประเมินจากเหตุการณ์จันามิ
 - การปรับองค์กร และระเบียบ
 - การจัดทำคู่มือ
- ปี 2004 Planet earth
 - Geohazard
 - Earth science
 - Risk reduction

Brief-2

- Regional DPRI
 - Main speakers (typhoon, climate change, operational forecasting, database)
 - Outputs
 - i) scientific research for more understanding/sharing
 - ii) information open to publics
 - iii) adaptive coping capacity

วัฏจักรการบริหารจัดการภัยพิบัติ

Definition of Disaster (พ.ร.บ 2550) (Ref 2)

Laws and Master Plan (Ref 2)

Disaster Mitigation Plan (Ref 3)

Disaster Management Cycle (handbook-4)

– Planning for Protection and reduction

– Preparation (page 15, Fig 1) p14

– Responds (อพยพ หนีภัย page 66-67) p53

(ค้นหา ภัย page 108-109) p95, 106

– Recovery (ประเมิน ช่วยเหลือ ฟื้นฟู page 112) p 110

Brief-3

- Masterplan
 - objectives and expected targets
 - strategies
 - towards implementations
- Plan
 - disaster management cycle
- Handbook

international

- Thai and other countries (Ref 5)
- ASEAN Collaboration (Ref 7)

Brief-4

- **Comparisons**

katrina

nagris

tohoku

Thai-tsunami

floods 53

landslides 54

- recommendations

Brief-5

- ASEAN collaborations
 - Bali concord 2
 - AEC B5 and B7
 - ACDM
 - Agreement of emergency response
 - SASOP manual
 - ARDEX (drill)
 - (COP, funding etc., ASEAN+3, ASEAN-EU etc.)

Brief-6

- Roles of Technologies

References

- Materials at AES-2
- Lecture materials in January
- คู่มือการวางระบบบริหารจัดการในภาวะวิกฤตจากภัยพิบัติ
ของ กรมป้องกันและบรรเทาสาธารณภัย ๕๒ (ref 4)
- สภาพัฒน์ ศึกษาเปรียบเทียบ ๕๔ (ref 5)
- แผนแม่บท ปภ (ref 2)
- พรบ ปภ ๕๐ (ref 9)
- แผนป้องกันภัย (ref 3)
- เอกสารคลังสมอง (ref 1)
- http://project-wre.eng.chula.ac.th/watercu_eng/?q=node/21

questions

- Disaster mgt principles
- Disaster mgt cycle
- Laws, procedure (manual)
- Collaborations
- Knowledge/information sharing