Course Syllabus (Academic Year 2021)

School of Interdisciplinary Studies, Kanchanaburi Campus, Mahidol University

1. **Course No. and Title** : KAED 354 Emergency Response

   Credit (study hours) : 3 (3-0-6)

2. **Program Name** : Bachelor of Engineering Program in Environmental Engineering and Disaster Management

3. **Course Module** : Major Required Courses

   Pre/co-requisite : None

4. **Class Semester** : ☐ 1st Semester ☑ 2nd Semester Academic Year 2021

5. **Class Schedule & Venue** : 09:00 – 12:00, Room L-xxx

6. **Class Coordinator** : Sirinon Suwanmolee, Ph.D. Contact No. : 081-428-2303

   Email: sirinon.suw@mahidol.edu

7. **Course Description**

Definitions and types of crisis from natural hazards or industries; concepts and principles of safety and emergency response management; emergency preparedness plans; action plans on emergency response; decision making and complying with the plans; forming of emergency coordination centers and commanding system; ICT in emergency response; crisis management and rehabilitation; case studies of crisis management and emergency response.

8. **Course Objectives / Course Learning Outcomes (CLOs)**

No.	Objectives / CLOs	Expected Skills / Knowledge			PLOs
		Specific	Generic	Knowledge	
8.1	CLO1 is able to explain the principles of crisis response and emergency management from natural disasters and industrial plants.			✓	1.1, 1.2, 3.4, 5.1
8.2	CLO2 is able to evaluate the situation, communication, coordination, and incident control regarding the Incident command system (ICS) principles.		✓		2.1, 2.2, 3.4, 5.2, 5.3, 5.4, 5.5

8.3	CLO3 is able to decide and implement contingency plans in responding a crisis until initial recovery phase.		✓		2.1, 2.2, 3.4, 5.2, 5.3, 5.4, 5.5
8.4	CLO4 is able to do basically design preparedness plan and emergency action plan.	✓			2.1, 2.2, 3.4, 4.2, 4.3, 6.1, 6.2

9. Class Instructor List

Sirinon Suwanmolee, Ph.D. Contact No. : 081-428-2303 Email: sirinon.suw@mahidol.edu

10. Course Outline

Teaching Period	Topics/Details	Number of hours		Methods: Teaching Media	Lecturer
		Theory*	Practice**		
1	Emergency response and Emergency management	1:00		Lecture: ppt	SS
			1:00	Roleplay: serious game on crisis management	
			1:00	Group discussion: playing result	
2	Incident Command System (ICS), Amateur *radio*, Radio code, Network Analysis	1:00		Lecture: ppt	SS
			2:00	In-Class practice: CB, Voxer	
3	Psychological first Aid, Gender based Violence	1:00		Lecture: ppt	SS
			2:00	Roleplay: guidline , checklist , toolkit	
4	Damage and Need Assessment (DANA), Shelter Set up, design Recovery Plan, preparedness plan and emergency action plan.	1:00		Lecture: ppt	SS
			1:00	Roleplay: serious game on DANA and recovery	
			1:00	Group discussion: planning the preparedness plan and emergency action plan.	
5	Hazardous Materials (Haz-mat)'s principle	1:30		Lecture: ppt	SS
			1:30	In-Class practice: PPE suite	
6	Basic Hazardous Materials (Haz-mat) Incident Response	1:00		In-Class practice: Hazmat zonning	SS
			2:00	Group discussion: result of response	
7	Indoor Fire Response	1:00		Lecture: ppt type of fire extinguise	SS
			2:00	In-Class practice: Fire evacuation	
8	Basic Fire Response skill	1:00		Lecture: ppt Fire control	SS
			2:00	practice: Fire control	
9	Week 9 Midterm Examination Period				SS
10	Basic Rope Rescue and Water Awareness	0:30		Lecture: ppt	SS
			2:30	In-Class practice: Rope, climbing equipment	
11	Swift water Rescue	0:30		Lecture: ppt	SS
			2:30	In-Class practice: Vest, rope	
12	Medical Emergency Response	1:30		Lecture: ppt	SS

Teaching Period	Topics/Details	Number of hours		Methods: Teaching Media	Lecturer
		Theory*	Practice**		
			1:30	In-Class practice: PPE suite	
13	Basic life support	1:30		Lecture: ppt	SS
			1:30	In-Class practice: AED, BLS practice equipment	
14	Triage and Mass casualty	0:30		Simulation: serious game	SS
			2:30	Group discussion: playing result	
15	Industrial Emergency Response case study	0:30		Lecture: ppt	SS
			2:30	Group project presentation: ppt	
16	Top-Table Exercised (TTX)	0:30		Simulation: ICS, Emergency operation center	SS
			2:30	Group discussion: playing result	
	Total hours of the entire semester	**14**	**31**		

11. Course Assessment

No.	Methods / Activities	Regulations	CLOs	Week	Weight Distribution (%)
11.1	MCQ	Posttest in class	CLO3	1-4	10
11.2	MEQ	Learner need to give reflection during class activity	CLO1	1-4	20
11.3	practice exams	Learner need to achieve in class activity's mission	CLO2,3	3-13	50
11.4	Presentation-design planning	Planning Presentation must reflect summative knowledge	CLO4	14-16	20
				Total	**100**

12. Grading System

Criterion-referenced evaluation

Grade	Score	Grade	Score	Grade	Score	Grade	Score
A	≥ 80 %	B	70 – 74.99%	C	60 – 64.99%	D	50 – 54.99%
B+	75 – 79.99%	C+	65 – 69.99%	D+	55 – 59.99%	F	< 50 %

Norm-referenced evaluation

*If use both criterion and norm-referenced evaluation, please tick two boxes.

13. References

1) กรมป้องกันและบรรเทาสาธารณภัย. (2557). ระบบบัญชาการเหตุในฐานะเครื่องมือบริหารสถานการณ์ฉุกเฉิน.

2) กรมควบคุมมลพิษ (2550). แผนปฏิบัติการฉุกเฉินจากสารเคมีและวัตถุอันตราย. แผนปฏิบัติการฉุกเฉินจากสารเคมีและ

วัตถุอันตรายรองรับนโยบายเตรียมความพร้อมแห่งชาติ

3) สำนักงานสาธารณสุขจังหวัดเชียงใหม่. (2559). Mini Medica Emergency Response Team.

4) George Haddow, Jane Bullock, D. P. C.-. (2007). Introduction to Emergency Management, Third Edition. (Homeland Security Series). Butterworth-Heinemann.

5) Norwegian Refugee Council. (2008). Camp Mangement toolkit (Norwegian Refugee Council (ed.)

6) Paul, C., Clarke, C. P., & Grill, B. (2010). Evaluating the Reliability of Emergency Response Systems for Large-Scale Incident Operations. RAND. www.rand.org

7) Sene, K. (2010). Flood Warning, Forecasting and Emergency Response. Springer.

8) Shan, S., & Yan, Q. (2017). Decision Support System Model. Springer. https://doi.org/10.1145/3029387.3029402

9) Thomas D. Phelan. (n.d.). Emergency Management and Tactical Response Operations Bridging the Gap. In Butterworth-Heinemann Homeland Security.

10) Oxfam GB. (2007). Building trust in diverse teams: the toolkit for emergency response. In Oxfam GB for the ECB Project.

11) Valcik, N. A., & Tracy, P. E. (2013). Case studies in disaster response and emergency management. In Case Studies in Disaster Response and Emergency Management. https://doi.org/10.1201_/b16245

12) Cashman, J. R. (2008). Emergency Response Handbook for Chemical and Biological Agents. In Analisis Standar Pelayanan Minimal Pada Instalasi Rawat Jalan di RSUD Kota Semarang (Vol. 3). CRC.

13) David A. McEntire. (2014). Disaster Response and Recovery_ Strategies and Tactics for Resilience Wiley