



**Course Syllabus (Academic Year 2020)**  
**School of Interdisciplinary Studies, Kanchanaburi Campus, Mahidol University**

- 1. Course No. and Title** : KAGS 474 Geoscience and Environmental Management  
**Credit (study hours)** : 3 (3-0)
- 2. Program Name** : Bachelor of Science in Geosciences
- 3. Course Module** : Year IV  
**Pre/co-requisite** : KAGS 313 Hydrogeology and  
KAGS 381 Introduction to Geochemistry
- 4. Class Semester** : 1<sup>st</sup> Semester of Academic Year 2020
- 5. Class Schedule & Venue** : Online on Wednesday and Friday at 09.00-12.00
- 6. Class Coordinator** : Dr. Patchawee Nualkhao

**7. Course Description**

Basic principle of household waste and industrial waste management, selection of waste disposal sites based on geological information, solving problems that caused by waste disposal, contamination of groundwater aquifer from waste disposal and protection, management of waste disposal system and EIA studies on the waste disposal projects.

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

No.	Objectives/CLOs	PLOs
8.1	Identify geology impact to environment problems and policy.	2
8.2	Use all acquired knowledge and technology in various types of reasoning as appropriate to the situation and problems solving for environment impact.	2, 3
8.3	Exercise flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal.	5

**9. Class Instructor List**

Name : Dr. Patchawee Nualkhao

Email : patchawee.nua@mahidol.edu

Mr. Phuriwit Sangsiri,

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Mr. Surachat Munsmat

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Mr. Suttipong Habangkham

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## 10. Course Outline

Week	Date	Contents	Instructor's Names
1	1 July	Introduction to Geology Environment and Management	Dr. Patchawee Nualkhao
2	3 July	Introduction to Mining Exploration	Mr. Phuriwit Sangsiri, Mr. Surachat Munsmmai
3	8 July	Introduction to Mine Wastes	Mr. Phuriwit Sangsiri, Mr. Surachat Munsmmai
4	10 July	Cyanidation Wasters of Gold-Silver Ores	Mr. Phuriwit Sangsiri, Mr. Surachat Munsmmai
5	15 July	Environmental Impacts of Mineral Exploration	Mr. Phuriwit Sangsiri, Mr. Surachat Munsmmai
6	17 July	Environmental Regulations and the Mining Industry	Mr. Phuriwit Sangsiri, Mr. Surachat Munsmmai
7	22 July	Managing the Mining Environment for Sustainable Development	Mr. Phuriwit Sangsiri, Mr. Surachat Munsmmai
8	24 July	Environmental impact of coal mining	Dr. Patchawee Nualkhao
9	29 July	Mid-term Examination	
10	31 July	Environmental impact of the petroleum industry	Dr. Patchawee Nualkhao
11	5 Aug	Environmental impact of Coastal Erosion, Flooding, Land Subsidence	Dr. Patchawee Nualkhao
12	7 Aug	Environmental Impact Assessment (EIA)	Mr. Suttipong Habangkham
13	14 Aug	Evaluation of the environmental problems in the industrial and landfield	Mr. Suttipong Habangkham
14	19 Aug	The management of the environmental problems in dams and canal work	Mr. Suttipong Habangkham
15	21 Aug	The management of the environmental problems in mining work	Mr. Suttipong Habangkham
16	26 Aug	Recovering of the areas after finishing industrial activities	Mr. Suttipong Habangkham
17	28 Aug	Final Examination	

## 11. Course Assessment

No.	Methods / Activities	Regulations	Week	Weight Distribution (%)
11.1	Mid-term exam	Online Exam by Cisco WebEx Meeting and Google Classroom	9	30
11.2	Final exam	Online Exam by Cisco WebEx Meeting and Google Classroom	4-15	30
11.3	Quiz / Reports / Present	Report & Online Presentation	16	30
11.4	Class participation	Must be greater than 80%	15	10
			<b>Total</b>	<b>100</b>

## 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 %

## 13. References

- 1) Bernd G. Lottermoser (2010). Mine Wastes. Characterization, Treatment, Environmental Impacts. Second Edition. 410p.
- 2) Edward A. Keller (2008). Introduction to Environmental Geology. 4th ed. Pearson International Edition. 661p.
- 3) Montgomery, Carla W. (2011). Environmental Geology. 9th ed. New York: McGraw-Hill. 511p.