



Course Syllabus (Academic Year 2022)

School of Interdisciplinary Studies, Kanchanaburi Campus, Mahidol University

1. **Course No. and Title** : KAGS 202 Aerial Photography, Remote Sensing, and Geomorphology
(Lab and Lecture)
2. **Credit (study hours)** :3(2-3-5).....
3. **Program Name** : Bachelor of Science in Geoscience
4. **Course Module** : no
Pre/co-requisite : no
5. **Class Semester** : 1st Semester 2nd Semester Academic Year 2022
6. **Class Schedule & Venue** : Tuesday 10.30-12.30, Lecture Room 2313, Lab 13.30-16.30
Lab Room L-310: Aug 8 – Sep 26, 2023
Lab Room Computer Laboratory: Oct 10 – Nov 21, 2023
7. **Class Coordinator** : Dr. Patchawee Nualkhao
Contact No.: 0956324244 Email: patchawee.nua@mahidol.edu

8. Course Description

Introduction to photogrammetry and geologic interpretation of aerial photographs and satellite image and study of landforms in relation to tectonics, climatic environments, geological processes

Course Objectives / Course Learning Outcomes (CLOs)

No.	Objectives / CLOs	Expected Skills / Knowledge			PLOs
		Specific	Generic	Knowledge	
8.1	Can explain principal terms, definitions and theories (e.g. conceptual approaches in geomorphology)	√		√	1
8.2	Can describe landforms and landforming processes in different climate zones and tectonic regimes	√		√	2
8.3	Can explain different theories and models for landscape evolution	√		√	1, 2, 3, 4
8.4	Can discuss the development of micro to mega scale landforms and their lifespans	√		√	1, 2, 3,

					4, 5
8.5	Can assess the mode of formation, age and history for landforms in Thailand	√		√	1, 2, 3, 4, 5

9. Class Instructor List

9.1 Name: Dr. Parisa Nimnate Contact No. : 0879924245 Email : parisa.nim@mahidol.edu

9.2 Name: Dr. Patchawee Nualkhao Contact No. : 0956324244 Email : patchawee.nua@mahidol.edu

10. Course Outline

Week	Date	Contents	CLOs	Instructor's Names
1	Aug 8, 2023	Lecture: Introduction to geomorphology Lab: Introduction to Aerial photo lab	1, 3	Parisa Nimnate
2	Aug 15, 2023	Lecture: Introducing process and form of geomorphology Lab: Geological structure in Aerial photo	1, 3	Parisa Nimnate
3	Aug 22, 2023	Lecture: Glacial landforms Lab: Aerial photo interpretation (Drainage pattern and density)	3	Parisa Nimnate
4	Aug 29, 2023	Lecture: Aeolian landforms Lab: Aerial photo interpretation (Resistance/ Vegetation /Color or tone)	3	Parisa Nimnate
5	Sep 5, 2023	Lecture: Fluvial landforms, Coastal landforms Lab: Landforms in Australia	3	Parisa Nimnate
6	Sep 12, 2023	Lecture: Karst landforms Lab: Landforms in Australia	3	Parisa Nimnate
7	Sep 19, 2023	Lecture: Principle of aerial photograph interpretation Lab: Aerial photo interpretation assignment 1	3	Parisa Nimnate
8	Sep 26, 2023	Lecture: Principle of aerial photograph	3	Parisa Nimnate

		interpretation Lab: Aerial photo interpretation assignment 2		
9	Mid-term Examination (Oct 2-6, 2023)			
10	Oct 10, 2023	Lecture: Process and Tectonic Geomorphology Lab: Geomorphology investigation using Google Earth	1, 2, 3, 4	Patchawee Nualkhao
11	Oct 17, 2023	Lecture: Constructional Landforms: Tectonic and Volcanic Lab: Geologic map interpretation using Google Earth	1, 2, 3, 4	Patchawee Nualkhao
12	Oct 24, 2023	Lecture: Introduction to Remote Sensing, EM wave properties Lab: Topography and rock bodies using Google Earth	1, 2, 3, 4	Patchawee Nualkhao
13	Oct 31, 2023	Lecture: Geometric Correction Lab: Stream and rivers on Earth & Mars using Google Earth	1, 2, 3, 4	Patchawee Nualkhao
14	Nov 7, 2023	Lecture: Image Enhancement Lab: Structure Geology by using Google Earth	1, 2, 3, 4	Patchawee Nualkhao
15	Nov 14, 2023	Lecture: Visual Interpretation Lab: Fault identification using Google Earth	1, 2, 3, 4	Patchawee Nualkhao
16	Nov 21, 2023	Lecture: Interpretation with Computer Lab: Active tectonic behavior in a continental region using Google Earth	1, 2, 3, 4	Patchawee Nualkhao
17	Final Examination (May 1-12, 2023)			

11. Course Assessment

No.	Methods / Activities	Regulations	CLOs	Week	Weight Distribution (%)
11.1	Mid-term exam	- Content week 1-8 - Close book	1, 2, 3	9	30
11.2	Final exam	- Content week 10-16 - Close book	1, 2, 3	17	30

11.3	Quiz	- Quizzes will be given in class and cover the content from the previous weeks. There will be no make-up quizzes	1, 2, 3	1-16	10
11.4	Reports / Assignments / Presentations	- Report submissions are due 2 weeks after the end of the presentation	1, 2, 3	1-16	20
11.5	Class participation	- Students should attend at least 80% of the course class	1, 2, 3	1-16	10
				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) มนตรี ชูวงศ์. ธรณีสัณฐานวิทยาพื้นฐาน = Basic Geomorphology. พระนครศรีอยุธยา เทียนวัฒนาพริ้นท์ติ้ง, 2554. 202 หน้า.
- 2) Bloom, A. L., 1978. Geomorphology: A systematic analysis of late Cenozoic landforms, Prentice-hall, Inc., New Jersey, 510p.
- 3) Paine, D. & Kiser, J. D., 2003. Aerial photography and image interpretation 2nd, John Wiley & Sons, 632p.
- 4) Rivard, L.A., 2011. Satellite Geology and Photogeomorphology: An Instructional Manual for Data Integration, Springer, 270p.
- 5) Small, R. J., 1978. The study of landform; a textbook of geomorphology 2nd ed., Cambridge university press, Cambridge, 502p.
- 6) Thornbury, W. D., 1969. Principles of geomorphology 2nd., John Wiley and Sons Inc., London, 583p.