



## Course Syllabus (Academic Year 2020)

School of Interdisciplinary Studies, Kanchanaburi Campus, Mahidol University

1. **Course No. and Title** : KAGS 216 Petrography and Ore Microscopy  
**Credit (study hours)** : .....2 (2-0-6).....
2. **Program Name** : Bachelor of Science in Geoscience program
3. **Course Module** : Year 2  
**Pre/co-requisite** : KAGS 214 Petrography and Ore Microscopy Laboratory
4. **Class Semester** :  1<sup>st</sup> Semester  2<sup>nd</sup> Semester Academic Year 2020
5. **Class Schedule & Venue** : Thursday (09:00 – 11:00 & 13:30 – 15:30)  
on 21 January – 11 February 2021 (Online)  
Thursday (09:00 – 11:00) on 25 February – 15 March 2021

6. **Class Online**  
(9:00) <https://mahidol.webex.com/mahidol/j.php?MTID=m80dd284b6e65e8fb3a1ea9f4ae5ea907>  
(13:20) <https://mahidol.webex.com/mahidol/j.php?MTID=m016cd393184fe8a832dd4827876c021c>  
**Password: KAGS216**

### 7. Course Description

Introduction to X-ray crystallography, optical properties of none opaque and opaque substances and application of optical properties to the identification of none opaque and opaque minerals and their paragenesis under the polarized light and reflected light microscope. The classification, formation, occurrence and identification of the important minerals. Mineral crystals and their chemistry.

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

No.	Objectives / CLOs	Expected Skills / Knowledge		PLOs
		Specific	Knowledge	
8.1	Describe light properties and optical properties		Physical science	1
8.2	Classification and describe Isotropic & Anisotropic	General Geoscience		1
8.3	Explain how identifies mineral under microscopy	General Geoscience		1

### 9. Class Instructor List

9.1 Name : Piyatida Sangtong

Contact No. : 091-8354852

## 10. Course Outline

Week	Date	Contents	Instructor's Names	Teach
1	21 Jan	Class organization; Introduction to Properties of light	Piyatida Sangtong	Online Webex Google Classroom
2		Optical Properties	Piyatida Sangtong	Online Webex Google Classroom
3	28 Jan	Mineral group under Microscopy	Piyatida Sangtong	Online Webex Google Classroom
4		Isotropic	Piyatida Sangtong	Online Webex Google Classroom
5	4 Feb	Exam I	Piyatida Sangtong	Online Webex Google Classroom
6		Anisotropic mineral	Piyatida Sangtong	Online Webex Google Classroom
7	11 Feb	Uniaxial Minerals	Piyatida Sangtong	Online Webex Google Classroom
8		Biaxial Minerals	Piyatida Sangtong	Online Webex Google Classroom
9	Mid-term Examination			Classroom
10	25 Feb	Minerals Classification Under microscopy	Piyatida Sangtong	Classroom
11	4 Mar	Minerals Classification Under microscopy	Piyatida Sangtong	Classroom
12	11 Mar	Crystal System and Mineral Group related to microscopy	Piyatida Sangtong	Classroom
13	18 Mar	Rock forming mineral under microscopy	Piyatida Sangtong	Classroom
14	25 Mar	Exam II	Piyatida Sangtong	Classroom
15	1 Mar	Mineral character under microscopy: Ultramafic	Piyatida Sangtong	Classroom
16	8 Mar	Mineral character under microscopy: Mafic	Piyatida Sangtong	Classroom
17	15 Mar	Mineral character under microscopy: felsic	Piyatida Sangtong	Classroom
18	Final Examination			Classroom
19				Classroom

## 11. Course Assessment

No.	Methods / Activities	Regulations	CLOs	Week	Weight Distribution (%)
11.1	Exam I	Writing (close book)		5	20
11.2	Exam II	Writing (close book)		9	20
11.3	Mid-term Exam	Writing (close book)		11	20
11.4	Final Examination	Writing (close book) & VDO		18-19	30
11.5	Class participation			1-17	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 %

Norm-referenced evaluation

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

## 13. References

- 13.1 ยืนยง ปัญจสวัสดิ์วงศ์, 2537. ผลิตศาสตร์ทางแสง, ภาควิชาธรณีวิทยา คณะวิทยาศาสตร์ มหาวิทยาลัยเชียงใหม่, เชียงใหม่, 94 หน้า.
- 13.2 Deer W.A., Howie R.A. and Zussman J., 1992, An introduction to the rock-forming minerals, 2<sup>nd</sup> (edition), China, 695 p.
- 13.3 Hurlbut, C.S., 1998. Dana's Minerals and how to study them, 4th (edition), John Wiley and Sons Inc., New York, 326 p.
- 13.4 Klein, C. and Hurlbut, C.S., 1999. Manual of Mineralogy (after James D. Dana), 21<sup>st</sup> (revised edition), John Wiley and Sons Inc., New York, 681 p.
- 13.5 Nesse, W.D., 1986. Introduction to optical mineralogy, Oxford University Press, New York, 325 p.
- 13.6 <http://webmineral.com>
- 13.7 [http://www.minsocam.org/msa/OpenAccess\\_publications/Craig\\_Vaughan/](http://www.minsocam.org/msa/OpenAccess_publications/Craig_Vaughan/)