Course Syllabus (Academic Year 2020)

School of Interdisciplinary Studies, Kanchanaburi Campus, Mahidol University

1. **Course No. and Title** : KAGS 214 Petrography and Ore Microscopy Laboratory
   Credit (study hours) : .....1 (0-3-3).....
2. **Program Name** : Bachelor of Science in Geoscience program
3. **Course Module** : Year 2
   Pre/co-requisite : KAGS 216 Petrography and Ore Microscopy
4. **Class Semester** : ☐ 1st Semester ☑ 2nd Semester Academic Year 2020
5. **Class Schedule & Venue** :

   Thursday (11:30 – 12:30) on 21Jan – 11 Feb 21 **online WebEx**

   https://mahidol.webex.com/mahidol/j.php?MTID=m63a9e133b8a1df3969c547981b9076a4

   Password: KAGS214Lab

   Thursday (12:00 – 14:00 & 14:30 – 16:30) at L202 on 25 Feb - 15 Mar 2021

6. **Course Description**

ปฏิบัติการที่เกี่ยวกับเนื้อหาในภาคบรรยาย การตรวจสอบและจำแนกชนิดแร่โปร่งใสและทึบแสง และลำดับการตกผลึกของแร่ต่างๆ ภายใต้กล้องจุลทรรศน์ แร่ชนิดโปร่งแสง ไม่โปร่งแสงและทึบแสง ผลึกแร่กับองค์ประกอบทางทางเคมี ฝึกทักษะการสังเกตและแปรความ

Laboratory exercises related to the lecture, i.e. and identification and classification transparent and opaque minerals and minerals paragenesis, mineral crystals and chemical composition; observation, interpretation, and identification skills.

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

No.	Objectives / CLOs	Expected Skills / Knowledge		PLOs
		Specific	Knowledge	
8.1	Can used the Polarizing Microscope.	General Geoscience	Physical science	1
8.2	Classification and describe Isotropic & Anisotropic	General Geoscience	Physical science	1
8.3	Identifies mineral under microscopy	General Geoscience	Physical Chemical science	1

8. **Class Instructor List**

   8.1 Name : Piyatida Sangtong Contact No. : 091-8354852

   8.2 Name : Pramote Nontarak

9. Course Outline

Week	Date	Contents	Instructor's Names
1	21 Jan	Introduction; Polarizing Microscope components	Pramote Nontarak
2	28 Jan	Mineral group under Microscopy	Pramote Nontarak
3	4 Feb	Isotropic Vs Anisotropic mineral	Pramote Nontarak
4	11 Feb	Anisotropic mineral	Pramote Nontarak
5	Feb	Exam I	Piyatida Sangtong
6	18 Feb	Minerals Classification Under microscopy; Relief	Pramote Nontarak
7	25 Feb	Minerals Classification Under microscopy; Pleochroism	Pramote Nontarak
8	4 Mar	Minerals Classification Under microscopy; interference colour	Pramote Nontarak
9	Mid-term Examination		Piyatida Sangtong
10	11 Mar	Minerals Classification Under microscopy; interference figure	Pramote Nontarak
11	18 Mar	Minerals Classification Under microscopy; Twining	Pramote Nontarak
12	25 Mar	Minerals Classification Under microscopy; Extinction angle	Pramote Nontarak
13	1 April	Rock forming mineral under microscopy	Pramote Nontarak
14	April	Exam II	Piyatida Sangtong
15	8 April	Mineral character under microscopy: Ultramafic	Pramote Nontarak
16	15 April	Mineral character under microscopy: Mafic	Pramote Nontarak
17	22 April	Mineral character under microscopy: felsic	Pramote Nontarak
18	Final Examination		Piyatida Sangtong

10. Course Assessment

No.	Methods / Activities	Regulations	CLOs	Week	Weight Distribution (%)
11.1	Exam I	Lab (Open book) & VDO		5	20
11.2	Exam II	Lab (Open book) & VDO		9	20
11.3	Mid-term Exam	Writing, Lab (Open book) & VDO		11	20
11.4	Final Examination	Writing, Lab (Open book) & VDO		18-19	30
11.5	Class participation			1-17	10
				Total	**100**

11. 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.

12. References

12.1 ยืนยง ปัญจสวัสดิ์วงศ์, 2537. ผลิกศาสตร์ทางแสง, ภาควิชาธรณีวิทยา คณะวิทยาศาสตร์ มหาวิทยาลัยเชียงใหม่, เชียงใหม่, 94 หน้า.

12.2 Deer W.A., Howie R.A. and Zussman J., 1992, An introduction to the rock-forming minerals, 2nd (edition), China, 695 p.

12.3 Hurlbut, C.S., 1998. Dann's Minerals and how to study them, 4th (edition), John Wiley and Sons Inc., New York, 326 p.

12.4 Klein, C. andHurlbut, C.S., 1999. Manual of Mineralogy (after James D. Dana), 21st (revised edition), John Wiley and Sons Inc., New York, 681 p.

12.5 Nesse, W.D., 1986. Introduction to optical mineralogy, Oxford University Press, New York, 325 p.

12.6 http://webmineral.com

12.7 **http://www.minsocam.org/msa/OpenAccess_publications/Craig_Vaughan/**