

Part IV:

Exhibits D. Sample of course specification

Course Syllabus : GJ112 Gem Identification I 1(1-0-2)

Gems and Jewelry Program
Semester 1, Academic year 2018

Instructor Information

Instructor	Email	Office Location & Hours
Dr.Bhuwadol Wanttanachaisaeng Dr.Bongkot Phichaikumjonwut Asst.Prof.Dr.Amonmat Kiratisin	bhuwadol@g.swu.ac.th bongkotp@g.swu.ac.th ajarnmama@gmail.com	19-1713

General Information

Description

Physical properties of gemstones. Crystallography and mineralogy. Characteristic of gemstones. Group, species, varieties classification. Instruments for gems identification.

Expected Learning Outcomes of Program

ELO 2 Manageable and effectively communicate gems and jewelry knowledge.

ELO 3 Analytical thinking by applying the fundamental skills of research methodology and learning and practicing process, also promptly enhance competences with life-long learning skills.

ELO 5 Intellectually and mentally create gems and jewelry innovation in global level.

ELO 8 Be honest, discipline and punctual.

Course learning outcomes	ELOs
CLO 1 Systematically organize gemology knowledge and effectively communicate them.	ELO2
CLO 2 Able to identify gemstone with the international standard criteria and instruments.	ELO5
CLO 3 Ethically identify gemstone type and quality.	ELO8

Course Materials

Required Materials

Optional Materials

Personal tools (loupe, tweezer, gems cloth)

Required Text

Gemology Handbook and Lecture notes

Optional Text

Advised textbook and journal presented at the Central library of university
GIA handbook

Course Schedule

Day	Time	Topic	Teaching & Learning Methods	Assessment Methods	CLOs
Jan 8	8.30-12.30	Fundamental of gemology : gemstone classification	Active learning and summary lecture after class	Post-test	1
		Physical and optical properties of gemstones	Active learning and summary lecture after class	Post-test	1
Jan 9	13.30-16.30	Popular Gemstone characteristics : Corundum, Beryl, Tourmaline	Active learning, group discussion and summary lecture after class	Assignment and post-test	1,2,3
Jan 10	8.30-17.30	Popular Gemstone characteristics : Garnet, Spinel, Chrysoberyl, Tanzanite, Kunzite, Quartz, Feldspar, Andalusite, Diopside, Turquoise and other opaque gemstone.	Active learning, group discussion and summary lecture after class	Assignment and post-test	1,2,3
Jan 11	8.30-12.30	Fundamental of identification instruments	Active learning, group discussion and summary lecture after class	Assignment and post-test	1,2,3
Jan 14	13.30-16.30	Final Examination		Examination	1,2,3

Additional Information and Resources

Score

Responsible and attention	10
Assignment	15
Post-test	25
Final Examination	50

Evaluation

Grade ranking is given either the group evaluation or the score ranking as follow.

grade	Score ranking
A	≥80
B+	76-79
B	70-75
C+	66-69
C	60-65
D+	56-59
D	50-55
E	≤49

Part IV:

Exhibits D. Sample of course specification

Course Syllabus : GJ113 Gem Identification Laboratory I 2(0-4-2)

Gems and Jewelry Program
Semester 1, Academic year 2018

Instructor Information

Instructor	Email	Office Location & Hours
Dr.Bhuwadol Wanttanachaisaeng	bhuwadol@g.swu.ac.th	19-1713
Dr.Bongkot Phichaikumjonwut	bongkotp@g.swu.ac.th	
Asst.Prof.Dr.Amonmat Kiratisin	ajarnmama@gmail.com	

General Information

Description

Practice to identify species, varieties and quality of popular gemstones by using instruments in laboratory.

Expected Learning Outcomes of Program

ELO 2 Systematically organize gems and jewelry knowledge and effectively communicate them.

ELO 5 Intellectual and mentally create Gems and jewelry innovation in global level.

ELO 8 Honesty, discipline and punctual.

Course expected learning outcomes	ELOs
CLO 1 Systematically organize gemology knowledge to correctly identify and species, varieties and quality of popular gemstones	ELO2
CLO 2 Able to identify gemstone with the international standard criteria and instruments.	ELO5
CLO 3 Ethically identify gemstone type and quality.	ELO8

Course Materials

Required Materials

- Gemology Handbook and slides provided in class
- Advised textbook and journal presented at the Central library of university
- Gemstone samples and identification instruments

Optional Materials

- GIA handbook

Required Text

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Course Schedule

Day	Time	Topic	Teaching & Learning Methods	Assessment Methods	CLOs
Jan 15	8.30-12.30	General observation physical properties of gemstone with naked eye and loupe : color, shape, cutting, luster, dispersion * Able to basically identify gems from physical properties Polariscope : optic characterization of gemstones * Remember optical properties of popular gems	Lab demonstrate, active learning, group discussion, practice and summary talk after class	Lab test	1
Jan 16	13.30-16.30	Refractometer : identify refractive index of faceted gemstones and optic axis types of gemstones * Remember refractive index of popular gems and able to identify refractive index of various cut/shape of gems.	Lab demonstrate, active learning, group discussion, practice and summary talk after class	Lab test	1
Jan 17	8.30-12.30	Refractometer : identify refractive index of cabochon gemstones and optic axis types of gemstones * Remember refractive index of popular gems and able to identify refractive index of various cut/shape of gems.	Lab demonstrate, active learning, group discussion, practice and summary talk after class	Lab test	1
	13.30-17.30	Microscope : how to use microscope, identify popular inclusions. * Correctly apply microscope to identify gemstone species and to identify inclusion types and cause of inclusions (frequently found in natural, synthetic and treated gems).	Lab demonstrate, active learning, group discussion, practice and summary talk after class	Lab test	1
Jan 18	8.30-12.30	Revise main instruments and additional test instruments : purpose of other instruments (spectroscope, dichroscope, hydrostatic balance, Chelsea color filter, UV lamp) * Correctly apply instruments to identify gemstone species or varieties.	Lab demonstrate, active learning, group discussion, practice and summary talk after class	Lab post-test	1
Jan 22	8.30-12.30	Popular Gemstone characteristics : Red, pink, purple gemstones (cover all transparent to opaque, phenomena and frequently found treated and synthetic gems). * Able to correctly identify gems which show similar appearances.	Active learning (lab practice), group discussion and summary talk after class	Assignment presentation	2,3
Jan 23	13.30-16.30	Popular Gemstone characteristics : Blue, violet gemstones (cover all transparent to opaque, phenomena and frequently found treated and synthetic gems). * Able to correctly identify gems which show similar appearances.	Active learning (lab practice), group discussion and summary talk after class	Assignment presentation	2,3
Jan 24	8.30-17.30	Popular Gemstone characteristics : Green,	Active learning (lab	Assignment	2,3

Day	Time	Topic	Teaching & Learning Methods	Assessment Methods	CLOs
		yellow, orange, brown, mixed colors gemstones (cover all transparent to opaque, phenomena and frequently found treated and synthetic gems). * Able to correctly identify gems which show similar appearances.	practice), group discussion and summary talk after class	presentation	
Jan 25	8.30-12.20	Popular Gemstone characteristics : white, black, colorless gemstones (cover all transparent to opaque, phenomena and frequently found treated and synthetic gems). * Able to correctly identify gems which show similar appearances.	Active learning (lab practice), group discussion and summary talk after class	Assignment presentation	2,3
Jan 29	8.30-12.30	Gems identification practice	Active learning (lab practice)	Worksheet	2,3
Jan 30	13.30-16.30	Gems identification practice	Active learning (lab practice)	Worksheet	2,3
Jan 31	8.30-17.30	Gems identification practice	Active learning (lab practice)	Worksheet	2,3
Feb 1	8.30-12.20	Gems identification practice	Active learning (lab practice)	Worksheet	2,3
Feb 5	8.30-12.30	Lab examination (counting time lab test)		Examination	1,2,3
Feb 6	13.30-16.30	Lab examination 1 (10 gemstones)		Examination	1,2,3
Feb 7	8.30-12.30	Lab examination 2 (10 gemstones)		Examination	1,2,3

Additional Information and Resources

Point ratio

Responsible and attention	5
Lab test/Assignment/Worksheet	20
Lab post-test	10
Counting time lab test	15
10 gemstones Lab examination	50

Grade ranking

Grade ranking and the mean point of the class are used to consider the learning result of the class group.

Percentage	grade
≥80	A
70-79	B
60-69	C
50-59	D
≤49	E