



**Lifelong Learning Programme:
Introductory Course to Minerals and Rocks Identification
礦物與岩石辨別概論課**

Sessions 課節	Topics 主題
1	<ul style="list-style-type: none">• Introduction• What is a mineral?• Crystalline and amorphous solids <ul style="list-style-type: none">• 課程介紹• 甚麼是礦物• 結晶質與非晶質的物質
2 and 3	<p><u>Mineralogy</u> Properties of minerals (part 1).</p> <ul style="list-style-type: none">• Physical and chemical properties that can be used to determine the identity of a mineral: crystal shape (or habit or form), luster, color, streak, cleavage, fracture, hardness, specific gravity, magnetism, acid reaction, taste, smell and touch, etc.• Hands-on exercises on mineral identification <p><u>礦物學</u> 礦物的特性(一)</p> <ul style="list-style-type: none">• 能用來辨識礦物的物理及化學特性：晶形、光澤、顏色、條痕、解理、裂口、硬度、比重、磁性、酸反應、味覺、嗅覺及觸覺等• 礦物判別實習
4	<ul style="list-style-type: none">• Mineral Classes: Native elements, Sulfides, Sulfates, Oxides and Hydroxides



	<ul style="list-style-type: none">• Hands-on exercises on mineral identification• 礦物課程：自然元素、硫化物、硫酸鹽、氧化物及氫氧化物• 礦物判別實習
5	<ul style="list-style-type: none">• Mineral Classes: Carbonates, Halides• Hands-on exercises on mineral identification• 礦物課程：碳酸鹽、鹵化物• 礦物判別實習
6	<ul style="list-style-type: none">• Silicates: Structure and chemical formulas: Nesosilicates, Sorosilicates, Cyclosilicates, Inosilicates, Inosilicates, Phyllosilicates, Tectosilicates.• Brief approach to gem minerals.• Hands-on exercises on mineral identification• 矽酸鹽：結構及化學式：島狀矽酸鹽、雙島狀矽酸鹽、環狀矽酸鹽、單鏈狀矽酸鹽、雙鏈狀矽酸鹽、片狀矽酸鹽及層狀矽酸鹽• 寶石礦物的簡介• 礦物判別實習
7	<p><u>Field trip to Coloane</u></p> <ul style="list-style-type: none">• Identification of the outcropping rocks of Macau and brief approach the geological history of Macao.• Collecting samples for later identification. <p><u>路環野外實習</u></p> <ul style="list-style-type: none">• 澳門出露之岩石及其組成礦物之判別及對澳門地質歷史作簡單介紹



	<ul style="list-style-type: none">● 樣品採集及後期辨識
8 and 9	<p><u>Petrology</u></p> <ul style="list-style-type: none">● Geological Cycle● Types of rocks: igneous, sedimentary, and metamorphic● Practical identification <p><u>岩石學</u></p> <ul style="list-style-type: none">● 地質循環● 岩石的種類：火成岩、沉積岩及變質● 岩石辨別實習
10	<ul style="list-style-type: none">● Summary and conclusion.● Outdoor activity: identifying common rocks and minerals used in construction in Macao <ul style="list-style-type: none">● 總結● 戶外活動：辨認澳門建築工程常用之岩石及礦物

**Sessions and contents are subject to change.*



Sessions	Date	Time	Location
Session 1	2018-01-24 Wednesday	18:30 - 21:30	USJ-NAPE Campus
Session 2	2018-01-25 Thursday	18:30 - 21:30	USJ-NAPE Campus
Session 3	2018-01-29 Monday	18:30 - 21:30	USJ-NAPE Campus
Session 4	2018-01-31 Wednesday	18:30 - 21:30	USJ-NAPE Campus
Session 5	2018-02-01 Thursday	18:30 - 21:30	USJ-NAPE Campus
Session 6	2018-02-05 Monday	18:30 - 21:30	USJ-NAPE Campus
Session 7	2018-02-07 Monday	18:30 - 21:30	USJ-NAPE Campus
Session 8	2018-02-08 Thursday	18:30 - 21:30	USJ-NAPE Campus
Session 9	2018-02-10 Saturday	09:00 - 12:00	Field Trip
Session 10	2018-02-12 Monday	18:30 - 21:30	USJ-NAPE Campus

Last updated: 29 December 2017