

Academic Year 1437- 1438H (2016 – 2017)  
Second Semester

## Radiometric and Geothermal Methods (GPH 390)

Lecture's Time: Sunday & Tuesday: 15:00 -15:50

Lecture's Room: B 80/ 3

**Instructor: Dr. Mahmoud M. ELWAHEIDI**

Office Hours: Sunday, Monday & Tuesday: 11:00 am -12:00 am

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I. COURSE OUTLINES		
Activity	No of Weeks	No. of hours
GENERAL INTRODUCTION	1	2
<u>Part I: Radiometric method</u>	1	2
❖ Mathematical and physical principles	1	2
❖ Radiometric activity	1	2
❖ Radiometric disassembly laws	1	2
❖ Radiometric measurements and instrumentations	1	2
❖ Data processing and interpretation	1	2
❖ The use of radioactivity in modern applications	1	2
<u>Part II: Geothermal method</u>	1	2
❖ Mathematical and physical principles	1	2
❖ Rock-thermo-physical characteristics	1	2
❖ The temperature of the Earth and its variations	1	2

❖ <b>Temperature measurements:</b> ➤ <b>Thermometers</b> ➤ <b>Geophysical methods</b>		<b>1</b>	<b>2</b>
❖ <b>Geophysical-geological-geochemical techniques for geothermal exploration</b>		<b>1</b>	<b>2</b>
❖ <b>The use of geothermal in modern applications</b>		<b>1</b>	<b>2</b>
<b>II. GRADING SYSTEM</b>			
<b>Assessment</b>	<b>Assessment task</b>	<b>Week due</b>	<b>Proportion of Final Assessment</b>
1	<b>Home works 1 through 4</b>		15 %
2	<b>Mid-term exam</b>	<b>Tuesday, 21 March., 2017</b>	25%
3	<b>Attendance, presentations &amp; Quizzes</b>		20 %
4	<b>Final exam</b>		40 %
<b>III. TEXT BOOKS- REFERENCES</b>			
<ul style="list-style-type: none"> <li>• Lectures' notes.</li> <li>• Kearey, Ph., Brooks, M., and Hill, I., An introduction to geophysical exploration, Wiley-Blackwell, 2002.</li> <li>• Naldrett, A., Magmatic sulfide deposits: Geology, geochemistry and exploration, Springer, 2004.</li> <li>• <a href="http://vro.depi.vic.gov.au/dpi/vro/vrosite.nsf/pages/landform_glossary_radio">http://vro.depi.vic.gov.au/dpi/vro/vrosite.nsf/pages/landform_glossary_radio</a></li> <li>• <a href="http://en.openei.org/wiki/Radiometrics">http://en.openei.org/wiki/Radiometrics</a></li> <li>• <a href="http://education.nationalgeographic.com/education/encyclopedia/geothermal-energy/?ar_a=1">http://education.nationalgeographic.com/education/encyclopedia/geothermal-energy/?ar_a=1</a></li> </ul>			