

Academic Year 1442H (2020 – 2021)  
Second Semester

## Radiometric and Geothermal Methods (GPH 390)

Lecture's Time: Sunday & Tuesday: 10:00 -11:00

Lecture's Room: Online COVID19

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

Office Hours: Sunday & Monday: 10:00 am -12:00 am

Tuesday: 10:00 am -12:00 am & 8:00 -9:00am

Wednesday: 08:00 -9:00 am

email: [melwaheidi@ksu.edu.sa](mailto:melwaheidi@ksu.edu.sa) Web: <http://fac.ksu.edu.sa/melwaheidi/home>

Office No: BLD.4/ 2B129

Tel. No: 4676205

I. COURSE OUTLINES		
Activity	No of Weeks	No. of hours
GENERAL INTRODUCTION	1	2
<b><u>Part I: Radiometric method</u></b>		
❖ 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
<b><u>Part II: Geothermal method</u></b>		
❖ Mathematical and physical principles	1	2
❖ Rock-thermo-physical characteristics	1	2
❖ The temperature of the Earth and it is 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>2</b>	<b>4</b>
❖ <b>The use of geothermal in modern applications</b>	<b>1</b>	<b>2</b>

**II. GRADING SYSTEM**

Assessment	Assessment task	Week due	Proportion of Final Assessment
1	Home works 1 through 3	3,5,8,11	15 %
2	Mid-term exam	Week 8	30%
3	Attendance, Quizzes, workgroups & presentations	Alternatively, Every two weeks	15 %
4	Final exam		40 %

**III. TEXT BOOKS- REFERENCES**

- Lectures' notes available at: <https://lms.ksu.edu.sa/>.
- Kearey, Ph., Brooks, M., and Hill, I., An introduction to geophysical exploration, Wiley-Blackwell, 2002.
- Naldrett, A., Magmatic sulfide deposits: Geology, geochemistry and exploration, Springer, 2004.
- [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)
- <http://en.openei.org/wiki/Radiometrics>
- [http://education.nationalgeographic.com/education/encyclopedia/geothermal-energy/?ar\\_a=1](http://education.nationalgeographic.com/education/encyclopedia/geothermal-energy/?ar_a=1)

**VI. IMPORTANT NOTES**

- Class attendance is mandatory
- Assignments late delivery will not be accepted.
- Frequent visit to the Learning Management System (LMS) (<https://lms.ksu.edu.sa/>) site is required to keep yourself updated with course materials, activities and announcements.