Course Specifications

Programme(s) on which the course is given: Post-Graduate (Mineralogy & Petrology; Stratigraphy & Sedimentation; Geophysics)
Major or Minor element of programmes: Major.
Department offering the programme: Geology
Department offering the course: Geology
Academic year / Level: /Post Graduate
Date of specification approval:

a- Basic Information

Title: Remote Sensing Applications **Code:** G696

Credit Hours: 2 Credit Hour **Lecture:** 2 Credit

Tutorial: **Practical:** ------ **Total:** 2 Credit Hour

b- Professional Information

1 – Overall Aims of Course:

- To introduce the basic principles and methodology of remote sensing techniques.
- To give initial training in the applications of remote sensing in geological sciences

2 – Intended Learning Outcomes of Course (ILOs)

a- Knowledge and Understanding: By the end of this course, the student should be able to:
a1- Understand the most recent advances in remote sensing instruments.
a2- Familiarize with the remote sensing applications.

b- Intellectual Skills: By the end of this course, the student should be able to:
b1- Apply advanced digital image processing,
b2- Analyze and interpret digital images
b3- Compare between different application using remote sensing techniques.

c- Professional and Practical Skills: By the end of this course, the student should be able to:
c1- Draw the raw data from the remote sensing measurements.
c2- Perform the remote sensing field measurements.

d- General and Transferable Skills: By the end of this course, the student should be able to:
d1- Work as a part of team.
d2- Solve remote sensing problems.

3. Contents

Topic	Credit hours	Lecture
Remote sensing techniques	4	4
Remote sensing and its applications on ore-deposits	2	2
Remote sensing and its applications on desertification	4	4
Remote sensing and its applications on geological hazards (Flooding, salinity, sand dunes, earthquakes, dust storms, rock falls)	8	8
Remote sensing and its applications on geomorphologic maps	2	2
Remote sensing and its applications on structure features	2	2
Remote sensing and its applications on lithologic mapping	2	2
Remote sensing and its applications on groundwater investigation	2	2
Volcanicity as an example of real time geology monitoring by	2	2

remote sensing		
Total	**28**	**28**

4 – Teaching and Learning Methods

4.1- lectures.

5- Student Assessment Methods

5.1- Regular written exam.	to assess a1, a2
5.2- Mid-term exam.	to assess a2, c1
5.3- At the end of term exam.	to assess a1-a2, b1-b2, c1-c2
5.4- Reports and discussions	to assess d1-d2

Assessment Schedule

Assessment 1: short exam (class activities)	every two weeks
Assessment 2:mid-term exam (written)	week 7
Assessment 3: final-term exam (written)	week 15-16

Weighting of Assessments

Written

Mid-Term Exam:	20%
Final-term Exam:	60%
Semester Work (including reports, oral and discussion):	20%
Total:	100%

6- List of References

6.1- Course Notes:

6.2- Essential Books (Text Books): Jensen, J. R. 2004. *Introductory Digital Image Processing*. 3rd ed.

6.3- Recommended Books:

6.4- Periodicals, Web Sites, … etc

7- Facilities Required for Teaching and Learning

Data show and Lab. equipments , computers, recent remote sensing programmers.

Course Coordinator: Dr. Hani Ibrahim

Head of Department: Prof. Ahmed Al-Boghdady

Date: / /2012