

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