

# Course Specifications

Programme(s) on which the course is given: Post-Graduate (Mineralogy and Petrology)  
Major or Minor element of programmes: Major  
Department offering the programme: Geology  
Department offering the course: Geology  
Academic year / Level: 00/Post Graduate  
Date of specification approval:

## a- Basic Information

**Title:** Advanced Plate Tectonics

**Code:** G641

**Credit Hours:** 2 Credits

**Lecture:** 2 Credits

**Tutorial:**

**Practical:** -----

**Total:** 2 Credit Hours

## b- Professional Information

### 1 – Overall Aims of Course

- Introducing some basic concepts of plate tectonics
- Studying the principles of plate movement.

### 2 – Intended Learning Outcomes of Course (ILOs)

- c- Knowledge and Understanding:** By the end of this course, the student should be able to:
- a1-** Understand the theory of plate tectonics
  - a2-** Understand terminology, nomenclature used in plate tectonics.
- d- Intellectual Skills:** By the end of this course, the student should be able to:
- b1-** Discuss mantle convection and the various mechanism proposed to explain plate motion.
  - b2-** Differentiate between different types of plates
  - b3-** Compare the distribution and geologic characteristics of tectonic plate boundaries.
- e- Professional and Practical Skills:** By the end of this course, the student should be able to:
- c1-** Explain how plate motion is measured
- f- General and Transferable Skills:** By the end of this course, the student should be able to:
- d1-** Critically use the internet as a mean of communication and as a source of information.
  - d2-** Communicate effectively to a variety of audiences in written, verbal and graphical forms.

### 3. Contents

Topic	Credit hours	Lecture
Geological evidence for Continental drift	2	2
The Framework of plate tectonics,	2	2
Divergent plate boundaries (Mid-Ocean Ridges)	4	4
Sea floor spreading:	4	4
Differences between Oceanic and Continental crust	4	4
Isostasy,	4	4
Convergent plate boundaries (subduction zones).	6	6
Sedimentation, and metamorphism along Convergent plate boundaries	2	2
<b>Total</b>	<b>28</b>	<b>28</b>

### 4 – Teaching and Learning Methods

- 4.1- Professorial lectures
- 4.2- Class discussions
- 4.3- Preparation of scientific reports during the semester.

### 5- Student Assessment Methods

- 5.1- Regular written exam to assess a1-a2
- 5.2- Mid-term exam to assess a1-a2, b1-b3
- 5.3- At the end of term exam to assess a1-a2, b1-b3, c1
- 5.4- Reports and discussions. to assess d1-d2

#### Assessment Schedule

- Assessment 1: Short exam (class activities) every two weeks
- Assessment 2: Mid-term (written) week 7
- Assessment 3: Final-term (written and verbal) week 15-16

#### Weighting of Assessments

- Semester work : 20%
- Mid-Term Exam: 20%
- Final-term Exam: 60%
- Total: 100%

### 6- List of References

- 6.1- All course topics will be given from published international journals
- 6.2. Essential Books (Text Books):  
Kent C.,Condie (1997). Plate Tectonics, 4<sup>th</sup> edition, Butterworth-Heinemann; 288 p.
- 6.3- Periodicals, Web Sites, ... etc  
Journal of African Earth Sciences (Elsevier)  
Gondwana Research (Elsevier)

### 7- Facilities Required for Teaching and Learning

Laptop, data show, computers, internet, international journals.

**Course Coordinator:** Prof. Ibrahim khalaf

**Head of Department:** Prof. Ahmed Al-Boghdady

**Date:** / /2012