GEOS 240 SEDIMENTARY GEOLOGY Section 1

Course Outline Winter 2005

1. Instructor

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2. Intended Learning Outcomes

After successfully completing all components of this course students will be able to:

1. demonstrate a clear understanding of the processes involved in the formation of the major groups of clastic and carbonate rocks
2. demonstrate a comprehensive understanding of the processes that control sedimentary systems
3. interpret the ancient analogues of sedimentary systems in the geological record
4. describe comprehensive models that have been developed for sedimentary systems.
5. interpret sedimentary rocks in laboratory and field
6. show understanding of the main controls that influence the accumulation of sediment in any particular environment, know how these controls interact and be familiar with their effects (sea level, tectonics, sediment supply, climate and other controls).
7. demonstrate appreciation of the significance of sedimentary structures for palaeoenvironmental interpretation
8. effectively describe rock exposures in the field
9. use a compass/clinometer for measurement of planes and lines
10. effectively record field observations and data in a notebook
11. draw effective sketches in a field notebook
12. plot data and lines on field map
13. recognise a sedimentary bed, noting grain size and identifying sedimentary structures
14. construct a graphic sedimentary log and undertake basic interpretation of the sedimentary processes
15. synthesise sedimentary information in order to interpret depositional environments
16. identify unconformities and evaluate their stratigraphic significance
17. classify sedimentary basins on the basis of their plate tectonic setting
18. analyse provenance and palaeocurrent data related to sedimentary basin fill
19. draw diagrams to account for facies changes in modem and ancient basins

3.Required Materials

(a) Texts: Boggs, Sam Principles of Sedimentology & Stratigraphy 3rd ed
Fichter & Poche Ancient Environments and the Interpretation of Geologic History 3rd ed

(b) Other

Hand lens, protractor, drawing compass, coloured pencils (compass-clinometer)

4. Instruction

Classroom 3 hours, **Lab** 3 hours

14 weeks

5. Assessment

Lab exercises 10 X 2.5%
Lab quizzes 5%, 5%, 10%
Written exams 15%, 15%, 25%
Midterm 1 in week 6, on topics from weeks 1-5
Midterm 2 in week 11 on topics from weeks 6-10

6. Grading system

Letter grades will be assigned, as in the A&S grading system.

7. Sequence of topics (subject to modification):

Introduction

8. Prerequisites

Geos 100