

King Saud University
College of Sciences
Geology and Geophysics Department



جامعة الملك سعود
كلية العلوم
قسم الجيولوجيا والجيوفيزياء

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Form (O)

Course Specification

Geo 342: Paleoecology

Revised April 2011



Course Specification

Institution: King Saud University
College/Department College of Science / Department of Geology and Geophysics

A Course Identification and General Information

1. Course title and code: Paleoecology (Geo 342)
2. Credit hours 3 (2+0+1)
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) B.Sc. program in Geology
4. Name of faculty member responsible for the course Dr. Osama El-Sayed Ahmed Attia
5. Level/year at which this course is offered Elective course (Level 5, Level 6, Level 7 , Level 8
6. Pre-requisites for this course (if any) Sedimentary and stratigraphy(Geo 234) – Invertebrate fossils (Geo 241)
7. Co-requisites for this course (if any)
8. Location if not on main campus

B Objectives

<p>1. Summary of the main learning outcomes for students enrolled in the course.</p> <ul style="list-style-type: none"> To familiarize students with basic knowledge of paleoecology needed for higher level courses. To develop the students' understanding of the properties of substances in the light of trends in the paleoecology across the fossils. To develop the students' appreciation of paleoecology as an experimental science supported by theory as an interpretive and predictive tool. To develop in the students' an awareness of the application of paleoecology to other strata.
<p>2. Briefly describe any plans for developing and improving the course that are being implemented. (Eg increased use of IT or web based reference material, changes in content as a result of new research in the field)</p> <ul style="list-style-type: none"> Electronic materials and computer based programs have been utilized to support the lecture course material. The course is dynamic in nature especially as what concerns the use of computer soft ware in the practical exercises. Now the students are trained to apply surfer and finite extent programs. The course material was posted on the internet that could be accessed by the students enrolled in the course only. The experimental studies were reviewed. As a result of introducing new equipment and the intention to minimize the paleoecology applications.

C. Course Description (Note: General description in the form to be used for the Bulletin or Handbook should be attached)

1. Topics to be Covered		
Topic	No of Weeks	Contact hours
Paleoclimatology, Paleoenvironment, Paleogeography	1	3
Sedimentary environments: Physical parameters, Chemical parameters, Biological parameters	1	3
Facies, Sedimentary facies parameters	1	3
Mode of life (Locomotion, Nutrition, Reproduction, Growth, Behavior)	1	3
Abiotic factors: Configuration of the earth's surface, Light, Temperature	1	3
Salinity, Oxygenation of water, Currents (Global currents, Local currents) Depth & Bathymetry	1	3
Nutrient elements, Substrate, Water currents (Global currents, Local currents), Water turbidity	1	3

Biotic factors: Competition, Symbiosis, Parasitism, Predator prey - Paleotemperature measurement	1	3
Seasonal cyclicity – Fossiliferous Horizons	1	3
Association of organisms: Palaeobiocoenosis, Thanatocoenosis – Environment Mode of life of fossils - Facies fossils	1	3
General characteristics of Continental environments	1	3
Marine environments	1	3
Classification of Sedimentary environments	1	3
Paleoenvironments of bygone association	1	3
Paleoenvironments identification	1	3

2 Course components (total contact hours per semester):			
Lecture: 30	Tutorial: 15	Practical/Fieldwork /Internship: 48	Other: -

3. Additional private study/learning hours expected for students per week. (This should be an average: for the semester not a specific requirement in each week)

2 hours weekly for the homework and reports assignments.

4. Development of Learning Outcomes in Domains of Learning
For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of student assessment to be used in the course as evaluate learning outcomes in the domain concerned.

a. Knowledge
<p>(i) Description of the knowledge to be acquired</p> <ul style="list-style-type: none"> • List the criteria of Paleocology used in determining the age. • Describe the paleoecology of strata. • Arrange the paleoecology of strata. • Identify the paleoecology. • Identify the change of paleoecology. • Identify evidences of paleoecology.
<p>(ii) Teaching strategies to be used to develop that knowledge</p> <ul style="list-style-type: none"> • In-class lecturing where the previous knowledge is linked to the current and future topics • Homework assignments • Tutorial discussions • Laboratory practice (systematic description and writing reports)
<p>(iii) Methods of assessment of knowledge acquired</p> <ul style="list-style-type: none"> • In class short quizzes • Two midterm and final exams • Evaluation of laboratory reports

b. Cognitive Skills
<p>(i) Cognitive skills to be developed</p> <ul style="list-style-type: none"> • Students will be able to understand the use and application of paleoecology • Students will be able to apply the knowledge have learnt concerning paleoecology in field. • Students will be able to construct paleoecology parameters. • Students will be able to identify the faces fossils.
<p>(ii) Teaching strategies to be used to develop these cognitive skills</p> <ul style="list-style-type: none"> • Homework assignments • Problem solving in the tutorial / recitation sessions • Case studies related to the course topics and relevant field geology
<p>(iii) Methods of assessment of students cognitive skills</p> <ul style="list-style-type: none"> • In class short quizzes • Two midterm and final exams • Checking the problems solved in the homework assignments
c. Interpersonal Skills and Responsibility
<p>(i) Description of the interpersonal skills and capacity to carry responsibility to be developed</p> <ul style="list-style-type: none"> • Work independently and as part of a team. • Manage resources, time and other members of the group • Communicate results of work to others
<p>(ii) Teaching strategies to be used to develop these skills and abilities</p> <ul style="list-style-type: none"> • Lectures are followed by numerous examples, some of which are practical in nature, to illustrate the application and use. • Practical work is planned around a number of paleoecology problems. • Engage students in classroom and in practical session discussion with questions and answers.
<p>(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility</p> <ul style="list-style-type: none"> • Laboratory exams • Assessment of the laboratory reports • Grading homework assignments
d. Communication, Information Technology and Numerical Skills
<p>(i) Description of the skills to be developed in this domain.</p> <ul style="list-style-type: none"> • Use the computer for analysing and processing the data • Use computational tools • Report writing
<p>(ii) Teaching strategies to be used to develop these skills</p> <ul style="list-style-type: none"> • Writing laboratory reports • Incorporating the use and utilization of computer in the course requirements
<p>(iii) Methods of assessment of students numerical and communication skills</p> <ul style="list-style-type: none"> • Evaluating the laboratory written reports

e. Psychomotor Skills (if applicable)
<p>(i) Description of the psychomotor skills to be developed and the level of performance required</p> <ul style="list-style-type: none"> - Field Trips. - Demonstrate cross in the field. - Prepare the students to practice in the field. - Use the geological equipments in the field geology. - How to collect the rock samples in the field.
<p>(ii) Teaching strategies to be used to develop these skills</p> <ul style="list-style-type: none"> - Field work. - Group work in the field. - Cooperation with other group. - Training project.
<p>(iii) Methods of assessment of students psychomotor skills</p> <ul style="list-style-type: none"> - Results of the team work in the field. - Presentation of the results from the field and discuss within all work groups. - Submitting and presenting the work and research and focusing on the difficulties that may face them and trying to find the solutions.

5. Schedule of Assessment Tasks for Students During the Semester			
Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Class activates (in class quizzes, and homework)	weekly	10%
2	First midterm exam	6	10%
3	Second midterm exam	12	10%
4	Final exam	16	40%
5	Lab activates	weekly	30%

D. Student Support

<p>1. Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)</p> <ul style="list-style-type: none"> • Office hours 6 hr/ week • help sessions 1hr/ week aided by two faculty members

E Learning Resources

1. Required Text(s)

* Hecker,R.F., (1965): Introduction to Paleocology

2. Essential References

* Dodd, J.R. (1981): Paleocology Concepts and applications

* Ager, D.V. (1963): Principale of paleocology

3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)

* Reyment, R.A. (1971): Introduction to quantitative paleocology

* Kreps, J.R. and Davies, N.B. (1978): Behavioral ecology

4. Electronic Materials, Web Sites etc

- Websites on the internet that are relevant to the topics of the course

5- Other learning material such as computer-based programs/CD, professional standards/regulations

- Multi media associated with the text book and the relevant websites

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.) <ul style="list-style-type: none">• Lecture room with at least 25 seats• Auditorium of a capacity of not less than 100 seats for large lecture format classes• Geology laboratory with at least 30 places
2. Computing resources <ul style="list-style-type: none">• Computer room containing at least 15 systems
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list) <ul style="list-style-type: none">• Availability of chemicals, glassware and equipment relevant to the course material• Safety facilities

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching <ul style="list-style-type: none">• Course evaluation by student• Students- faculty meetings
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department <ul style="list-style-type: none">• Peer consultation on teaching• Departmental council discussions• Discussions within the group of faculty teaching the course
3 Processes for Improvement of Teaching <ul style="list-style-type: none">• Conducting workshops given by experts on the teaching and learning methodologies• Periodical departmental revisions of its methods of teaching• Monitoring of teaching activates by senior faculty members
4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution) <ul style="list-style-type: none">• Providing samples of all kind of assessment in the departmental course portfolio of each course• Assigning group of faculty members teaching the same course to grade same questions for various students. Faculty from other institutions are invited to review the accuracy of the grading policy• Conducting standard exams such as the other international universities exams.

5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

- The course material and learning outcomes are periodically reviewed and the changes to be taken are approved in the departmental and higher councils.
- The head of department and faculty take the responsibility of implementing the proposed changes.