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**جامعة الملك سعود King Saud University**

**كلية العلوم College of Sciences**

**قسم لجيولوجياوالجيوفيزياء Geology and Geophysics Department**

**Historical geology (Geo 106) 3 (2+1)**

**Instructor:** Prof. Abdelbaset El-Sorogy

**Contributor:** Mr. Mohamed Saad

**Room:** Building 4, 1b59

**Office Hours:**

Monday: 10:00 Am - 12:00 Am

Tuesday: 10:00 Am - 12:00 Am

Wednesday: 10:00 Am - 12:00 Am

Thursday: 10:00 Am - 12:00 Am

**Syllabus:**

Essentials of earth history – uniformitarianism - the low of superposition – unconformities - mountain building – stratigraphic unities – fossil and fossilization - correlation – relative and absolute ages - plate tectonics – evolution of lithosphere and biosphere through geologic time (One day field trip).

**Geo 106: Historical geology 3(2+1)**

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| **Topic** | **No of**  **Weeks** | **No of**  **hours** |
| **Essentials of earth history: Subdivisions of geologic history into Eons, Eras, Periods, life pattern, Questions** | 1 | 2 |
| **Relative age: Definition, superposition, intrusive relationships, cross-cutting relationships, fossil succession and unconformities, Questions** | 3 | 6 |
| **absolute ages: Definition, Rate of sedimentation of delta deposits, radioactive isotopes, half-life, Questions** | 1 | 2 |
| **Evolution of lithosphere and biosphere through geologic time** | 1 | 2 |
| **Uniformitarianism: Definition, taxonomic uniformitarianism, Questions** | 1 | 2 |
| **Mountain building: Definition, deformation, folds, faults, joints, mountain building at convergent boundaries, the principle of isostasy, Questions** | 1 | 2 |
| **Stratigraphic unites: Definition, lithostratigraphy, biostratigraphy, magnetostratigraphy, seismic stratigraphy, correlation of stratigraphic units, Questions** | 1 | 2 |
| **Extinction events: Definition, Permo-Triassic extinction, Cretaceous-Tertiary extinction, Dinosaurs extinction, Questions** | 1 | 2 |
| **Continental drift: Definition, paleoclimate, Late Paleozoic glaciation, ancient evaporites, ancient coral reefs, fossils and mountain chain similarity, Questions** | 1 | 2 |
| **Plate tectonic: Definition, divergent plate boundary, convergent plate boundary, transform plate boundary, Questions** | 1 | 2 |

**Evaluation (100 marks):**

First test (quiz): 5th week, 10 marks

Second test (quiz): 10th week, 10 marks

Practical exam: 14th week, 30 marks

Assignments: 10 marks

Final exam: 40 marks

**Reference Books for Geo 106:**

• Bemhard Kummel (1961) History of the earth: An introduction to historical geology. W. H. Freeman & Co. Ltd., London, 610 pp.

• Historical geology: interpretation and application.

• Principals of historical geology.

• Boardman, R. S., A. H. Cheetham and A. J. Rowell. (1987): Fossil Invertebrates.- Blackwell Scientific Publications, 713p.