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**Department of Earth Sciences and Petroleum**

**College of Science**

**University of Salahaddin-Erbil**

**Subject: Stratigraphy-Practical**

**Course Book – (2nd year)**

**Lecturer's name: Avin Hameed Abdullah**

**Academic Year: 2022/2023**

**Course Book**

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| **1. Course name** | **Stratigraphy** |
| **2. Lecturer in charge** | **Avin Hameed Abdullah** |
| **3.Department/ College** | **Geology/ science** |
| **4. Contact** | **e-mail: avin.abdullah@su.edu.krd** |
| **5. Time (in hours) per week**  | **Practical: 8** **Hour 2** **Four group**  |
| **6. Office hours** | **9 Hour** |
| **7. Course code** |  |
| **8. Teacher's academic profile**  | \***Graduated at the Department of Geology, Salahaddin University/ College of Science (2004-2005).****\* M.Sc. in Stratigraphy and sedimentary, Geology Department, College of Science, Salahaddin University-Erbil, Iraq.****\*Assistant lecturer in Geology Department, Salahaddin University-Erbil, teaching practical to undergraduate students in the laboratory of subjectsStratigraphy and sedimentary** |
| **9. Keywords** | **Relationships, Map, Correlation, unite, stratigraphy ,law** |
| **10. Course overview:**This course focuses on the study of introduction to Stratigraphy.1-Introduction-Standard Symbols for measuring stratigraphic section 2-Sequencing of geological events Categories of Stratigraphic Units; -Rock Stratigraphic(Lithostratigraphic) Units -Time Stratigraphic(Chronostratigraphic) Units -Geologic Time (Geochronologic) Units3-Correlation of Lithostratigraphic Units-Correlation of Biostratigraphic Units -4 Measuring and describing stratigraphic section 5-Development and movement of sedimentary Facies |
| **11. Course objective:** Regular attendance is the best way to assure a good grade in this class. Different form of teaching is illustrated to gain best results, and it is much easier to absorb the information in lecture than to try and learn it on your own from the text. As an incentive to come regularly, quizzes will be given every lab Also, it is the purpose of this course to assemble and integrate the facts, principles, and hypothesis bearing upon stratigraphy and sedimentation in a form that may be studied and assimilated in an efficient manner.Prerequisites include the normal sequence of undergraduate courses in geology and related sciences. .  |
| **12. Student's obligation*** Always, be present in the hall before the instructor.
* You must close mobile before entering the hall. come to class regularly
* be willing to become involved in the course
* complete on-line exercises and quizzes
* collaborate with your neighbours to exchange ideas and learn new concepts
* hand in your own work on the in-class exercises
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| **13. Forms of teaching**Teaching includes different manners|: Power point presentations Explanations on blackboard Classroom discussions |
| **14. Assessment scheme** Daily activities and Seminar 6 mark, Quiz 6 mark , reports 8mark  Exam 15 marks  Total 35 Marks  |
| **15. Student learning outcome:** Most of the graduated student s followed the oil companies those work in the Kurdistan Region especially in the last years.  |
| **16. Course Reading List and References‌:** 1-Boggs,Jr,S.,2006.Principles of Sedimentology and tratigraphy.Prentice-Hall, New York,662p2-Krumbein,W.C.andSloss,L.L.,1963.Stratigraphyand Sedimentation. Freeman and Company, San Francisco,660p. 3-Nichols,G.,2009.Sedimentology and Stratigraphy. Second Edition.4-Wiley-Blackwell,419p. 2- Boggs, S. J, 2006, Principles of Sedimentology and Stratigraphy.4th ed., Prentice-Hall, 662P.3- Folk, 5-R. L., 1974, Petrology of Sedimentary Rocks, Hemphill Publication Company, Texas, 170P.4- Nichols, G., 1990, Sedimentology and stratigraphy, Black Well Science, 355P.6- Pettijohn, F. J., Potter, P. E., and Seiver, R., 1987, Sand and sandstone, Springer-Verlag, New York, 553P.7- Selley, R. C., 2000, Applied Sedimentology, Academic Press, 521P.8- Tucker, M.E., 1981, Sedimentary petrology an introduction, Volume 3, Blackwell scientific Publications, 252P. |
| **17. The Topics:** | **Lecturer's name** |
| Week1introduction to Stratigraphy.-Introduction-Standard Symbols for measuring stratigraphic section -Lithologic Symbols -Fossil Symbols -Sedimentary Structures SymbolsWeek 2 Sequencing of geological events Principle of uniformitarianism Principle of original horizontality Law of lateral continuity Law of superposition Law of cross-cutting relationships Principle of inclusions Law of founal successionWeek3Stratigraphic  -Categories of Stratigraphic Units;  -Rock Stratigraphic(Lithostratigraphic) Units (Group, Formation, Member, Lens and Tongue, Bed)  Time Stratigraphic(Chronostratigraphic) Units Definition (System, Series Stage) -Geologic Time (Geochronologic) Units Definition (Eon, Era, Period ,Epoch, Age)  Weeks 4 Definition -Correlation of Lithostratigraphic Units Week 5 -Correlation of Biostratigraphic Units and -Time Stratigraphic Correlation Methods of biostratigraphical correlationWeek 6 Measuring and describing stratigraphic section Surface stratigraphical section subsurface stratigraphical section a-Geophysical methods b-well dataWeek 7 Development and movement of sedimentary Facies1-Facies pile up vertically -Facies show a transgressive onlap pattern –Facies show a regressive offlap pattern Lateral Relationships among Lithosomes -Combined Lateral and Vertical Relationships Transgression and Regression Overlap and Offlap Onlap and OverstepWeek 8Stratigraphic Maps  -Classification of Stratigraphic Maps Structure Contour Maps Isopach Maps Isopach Maps Week 9  Facies Maps  Paleogeomorphologic Maps Paleogeologic Maps    | Avin Hameed2 hour |
| Week 10 – Examination18. Examinations:Note: Each question equals (10) degrees 1.What are the basic principles (Laws) of stratigraphy? Explain and Draw.2. Which factor was used in classification the shapes of Lithosomes? Show 3-What are the specification of preferred measured stratigraphic section.4-Why the subsurface studies are less accurate and less reliable than those based on outcrop?5-Compare between Topographic and Structure-contour maps? 6-Compare between Isochore and Isopach maps?7-Interpret the stratigraphic sequence in transgressive facies pattern fines upward?  8. List the methods and problems of rock-unit nomenclature and  correlation.9. Write, in the form of table, classification of stratigraphic maps   |
| **19. Peer review** Dr **Ali Ashoor Abid** |