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**Department of Earth sciences and Petroleum**

**College of Science**

**University of Salahaddin-Erbil**

**Subject: Sedimentary Petrology-Practical**

**Course Book 2nd year Geology**

**Lecturer's name M.Sc. Avin Hameed Abdullah**

**Academic Year: 2022/2023**

***Course Book***

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| **1. Course name** | **Practical Sedimentary Petrology** |
| **2. Lecturer in charge** | **Avin Hameed Abdullah** |
| **3. Department/ College** | **Earth Sciences& Petroleum/ Science** |
| **4. Contact** | **e-mail: avin abdullah@su.edu.krd** |
| **5. Time (in hours) per week**  | **For example Theory: 2** **Practical: 2**  |
| **6. Office hours** | **9am-3pm**  |
| **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** | **Geology, petrology, sedimentary rocks**  |
| **10. Course overview:** The course will cover describing the physical, chemical, and biologic properties of the major types of sedimentary rocks, It covers the mineralogy, chemistry, textures, and sedimentary structures that characterize sedimentary rocks, and relates these features to the depositional origin of the rocks and their subsequent alteration by diagenetic processes during burial. The course will deal with the physical properties of siliciclastic rocks (sandstones, shales, conglomerates) and carbonate rocks (limestones and dolomites), it also discusses evaporites, cherts, iron-rich sedimentary rocks, phosphorites, and carbonaceous sedimentary rocks such as oil shales. |
| **11. Course objective:**Sedimentary petrology is a broad scientific discipline that encompasses study of all kinds of sedimentary rocks, including those that constitute a relatively small volume of total sedimentary rocks. These volumetrically minor rock types nonetheless provide valuable insight into Earth history, and some are economically significant.  |
| **12. Student's obligation** The student should attend all labs and prepare each lab report  |
| **13. Forms of teaching**Different forms of teaching will be used to reach the objectives of the course: power point presentations for the head titles and definitions and typical pictures of rock samples, and the main teaching object: the hand specimens of sedimentary rocks that are prepared, classified, ordered and numbered previously |
| **14. Assessment scheme**The students are required to do two closed book practical exam at end of the semester. The exams have 15marks and the average of these exams is obtained, the attendance, classroom activities 6 and weekly report 8 marks and Quiz 6. There will be a total 35 marks.  |
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| **15. Course Reading List and References‌:** 1 - Boggs, S., Jr., 2009 , Petrology of Sedimentary Rocks: Cambridge University press.2- Pettijohn, F. J., 1975, Sedimentary Rocks, 3rd edn. : Harper and Row, New York, NY.3- Stow, D. A.V., 2005, Sedimentary Rocks in the Field: A Color Guide: Elsevier, Burlington, MA.4-Tucker, M. E, 2003, Sedimentary Rocks in the Field: John Wiley and Sons, Chichester. |
| **16. The Topics:** | **Lecturer's name** |
| *Week1: September 2022* introduction to sedimentary petrology.*Week2: October 2022* Sedimentary structures: classification (depositional, erosional or post-depositional). *Week 3: October2022* Shape, sphericity and roundess of grains. Calculation the degree of sphercity and roundess of sedimentary grains  *Weeks4: October 2022* Conglomerates and breccias: description and classification.*Week 5: October 2022*Sandstones: description and classification. *Week 6: October 2022* Mudrocks: Description . *Weeks 7&8 : November 2022* Carbonate rocks: description.*Week 9: November2022* Mid-semester practical exam. *Week10: November 2022* Evaporates: description.*Week 11: November 2022* Siliceous rocks: description. *Week 12November 2022*Ferruginous and phosphates: description*.**Week13: December 2022* end-semester practical exam. | 2 hrsAvin Hameed |
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| **17. Examinations:**

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| Q1)  a- Name of sedimentary structure………………………… b- current direction……………………………………………….  |
| Q2) Compare between A and B in name and grain size |
| Q3)  a Grain size……………………………………………. b- cement type …………………………………………… c- color…………………………………… |
| Q4)  a- Grain size……………………………………………. b- cement type …………………………………………… c- sorting ………………………………… |
| Q5)  a- Grain size……………………………………………. b- sedimentary structure …………………………………………… c- Mineralogical composition……………………………… |
| Q6)  a – Name ……………………………………………………. b- color …………………………………………… c- mineralogical composition…………………………………… |
| Q7)  b- Color……………………………………………………. c- grain size…………………………………………….. |
| Q8) Define roundess.  |
| Q9)1. Name of sedimentary structure…………………………………..
2. Type of sedimentary structure…………………………….
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| Q10) What is the difference between orthoconglomerate and paraconglomerate? |

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