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**Department of Earth Sciences and petroleum**

**College of Science**

**University of Salahaddin/Erbil**

**Subject: Invertebrate Palaeontology (Practical)**

**Course Book –Year. 2**

**Lecturer's name: Majeed Toma Hanna (Ph.D.)**

**Academic Year: 2022 - 2023**

**Course Book**

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| **1. Course name** | Invertebrate Palaeontology (Practical) | |
| **2. Lecturer in charge** | Dr. Majeed Toma Hanna | |
| **3. Department/ College** | Earth Sciences and Petroleum/Science | |
| **4. Contact** | e-mail: majeed.hanna@su.edu.krd  Tel: (optional) | |
| **5. Time (in hours) per week** | Practical: 2 | |
| **6. Office hours** | 2 | |
| **7. Course code** |  | |
| **8. Teacher's academic profile** | First assignment in University of Salahaddin/Erbil in 1993 as assistant lecturer.  Attainment of Ph.D. degree and lecturer title in 2008. | |
| **9. Keywords** |  | |
| **10. Course overview:**  Palaeontology means in Greek the science that studies the ancient life, through the remains or traces of prehistoric organisms often preserved within sedimentary rocks. Palaeontology is important because life on the earth has not always been as its now. By studying the fossils in progressively older rocks, the Palaeontologist attempts to establish an account of how all the animals and plants, which make up the modern biosphere evolved from their earliest beginnings.  The field of palaeontology is quite diverse and comprises several sub disciplines, each of which has relevance to different branches of geology and biology.  Fossils are important to geologists for three reasons: they provide age determination of rocks in which they occur, they provide establishment of environment of formation of the sediments of the past in which they occur and hence the key to palaeoecological and palaeogeographical reconstructions, and they provide the raw data for determining the evolution of past organisms. | | |
| **11. Course objective:**  The course aims to give a preliminary and concise knowledge on the invertebrate palaeontology to the undergraduate students as a base for the following courses of biostratigraphy, palaeoecology, sedimentology and geology of Iraq.  Upon completing this course students will be able to use the fossil record for determination the relative age of fossil bearing rocks, and to make inferences about palaeoenvironments. Therefore, it will be required that students demonstrate a general understanding of the various groups of fossil organisms and their stratigraphical occurrence. Specifically, students should:   1. Demonstrate ability to identify fossils of major taxomonic groups. 2. Demonstrate knowledge of morphology of major fossil groups. 3. Demonstrate knowledge of the age and stratigraphical significance of major fossil groups. 4. Be able to collect and interpret palaeontological data from the field. | | |
| **12. Student's obligation**  In this section the lecturer shall write the role of students and their obligations throughout the academic year, for example the attendance and completion of all tests, exams, assignments, reports , essays…etc  لێره‌ مامۆستا به‌رپرسیارێتی قوتابی خوێندکار ڕوونده‌کاته‌وه‌ سه‌باره‌ت به‌ کۆرسه‌که‌ بۆ نموونه‌ ئاماده‌بوونی قوتابیان له‌ وانه‌کاندا، له‌ تاقیکردنه‌وه‌کاندا، راپۆرت و ووتار نووسین... هتد. | | |
| **13. Forms of teaching**  The following are used in teaching the subject:   * Power point program with data show. * White Board. * Hard copy of a Lab. sheet, prepared previously. | | |
| **14. Assessment scheme**  Breakdown of overall assessment and examination  لێره‌ مامۆستا جۆری هه‌ڵسه‌نگاندن (تاقیکردنه‌وه‌کان یان ئه‌زموونه‌کان) ده‌نووسێت بۆ نموونه‌ تاقیکردنه‌وه‌ی مانگانه‌، کویزه‌کان، بیرکردنه‌وه‌ی ڕه‌خنه‌گرانه (پریزه‌نته‌یشن)، ڕاپۆرت نووسین، ووتار نووسین‌ یان ئاماده‌نه‌بوونی خوێندکار له‌ پۆلدا...هتد. ئامانه‌ چه‌ند نمره‌ی له‌سه‌رده‌بێت و مامۆستا چۆن نمره‌کان دابه‌شده‌کات؟‌ | | |
| **15. Student learning outcome:**  پڕکردنه‌وه‌ی ئه‌م خانه‌یه‌ زۆر گرنگه‌، مامۆستا ده‌رئه‌نجامه‌کانی فێربوون ده‌نووسێت. بۆ نموونه‌: ڕوونی ئامانجه‌ سه‌ره‌کیه‌کانی کۆرسه‌که‌ (بابه‌ته‌که‌) بۆ خوێندکار‌  گونجاندنی ناوه‌ڕۆکی کۆرسه‌که‌ به‌ پێویستی ده‌ره‌وه‌ و بازاڕی کار  قوتابی چی نوێ فێرده‌بێت له‌ ڕێگه‌ی پێدانی ئه‌م کۆرسه‌وه‌؟  This should not be less than 100 words | | |
| **16. Course Reading List and References‌:**  **REQUIRED TEXTBOOKS**  Moore, R.C. (ed.) 1953. Treatise on invertebrate Palaeontology. Kansas University Press. A series of volumes each dealing with a major invertebrate group on a detailed and systematic basis.  Murray, J.W. (ed.) 1985. Atlas of Invertebrate Macrofossils. Longman Group Ltd, Harlow. 241p. | | |
| **17. The Topics (practical):** | | **Lecturer's name** |
| **Week.1:** Study and description of bivalve fossils specimens.  **Week.2:** Study and description of bivalve fossils specimens.  **Week.3:** Study and description of gastropod fossils specimens.  **Week.4:** Study and description of cephalopod fossils specimens.  **Week.5:** Study and description of cephalopod fossils specimens.  **Week.6:** Study and description of Echinodermata fossils specimens.  **Week.7:** 1st Practical Exam.  **Week.8:** Study and description of Echinodermata fossils specimens.  **Week.9:** Study and description of Echinodermata fossils specimens.  **Week.10:** Study and description of trilobite fossils specimens.  **Week.11:** Study and description of trilobite fossils specimens.  **Week.12:** Study and description of graptolite fossils specimens.  **Week.13:** Study and description of graptolite fossils specimens.  **Week.14:** 2nd Practical Exam. | | Lecturer's name  ex: (2 hrs)  ex: 14/10/2015 |
| **18. Practical Topics (If there is any)** | |  |
| In this section the lecturer shall write titles of all practical topics he/she is going to give during the term. This also includes a brief description of the objectives of each topic, date and time of the lecture | | Lecturer's name  ex: (3-4 hrs)  ex: 14/10/2015 |
| **19. Examinations:**  ***1. Compositional:*** In this type of exam the questions usually starts with Explain how, What are the reasons for…? Why…?, How….?  With their typical answers  Examples should be provided  ***2.******True or false type of exams:***  In this type of exam, a short sentence about a specific subject will be provided, and then students will comment on the trueness or falseness of this particular sentence. Examples should be provided  ***3. Multiple choices:***  In this type of exam there will be a number of phrases next or below a statement, students will match the correct phrase. Examples should be provided. | | |
| **20. Extra notes:**  Here the lecturer shall write any note or comment that is not covered in this template and he/she wishes to enrich the course book with his/her valuable remarks. | | |
| **21. Peer review:**  Professor Dr. Faraj H. Tobyia  .‌‌ | | |