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**Department of ……Earth Sciences and Petroleum.**

**College of …Science…………………………….**

**University of …Salahaddin……………………….**

**Subject: …Principle of Paleontology**

**Course Book – (Year 2)**

**Lecturer's name Sazan Maghded Ahmed Msc.**

**Academic Year: 2022/2023**

**Course Book**

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| **1. Course name** | **Principle of Paleontology** |
| **2. Lecturer in charge** | **Sazan Maghded Ahmed** |
| **3. Department/ College** | **Earth Science and Petroleum/ Science** |
| **4. Contact** | **e-mail: sazan.ahmed@su.edu.krd****Tel: (optional)** |
| **5. Time (in hours) per week**  | **For example Theory: 2** **Practical: 2**  |
| **6. Office hours** | **Wednesday, 2hours** |
| **7. Course code** |  |
| **8. Teacher's academic profile**  | **Bsc.2003,Msc.2014,all from college of science, university of Salahaddin, Assistant lecture 2015.** |
| **9. Keywords** |  |
| **10. Course overview:** This subject deals with the nature of macrofossils This subject deals with the nature of Macrofossils. **Macrofossils**, also known as mega fossils, are preserved [organic](https://en.wikipedia.org/wiki/Life) remains large enough to be Visible without a [microscope](https://en.wikipedia.org/wiki/Microscope). but some of its features can be seen under the microscope  The term macrofossil stands in opposition to the term [macrofossil](https://en.wikipedia.org/wiki/Microfossil). Macrofossils, by contrast, Require substantial magnification for evaluation by [fossil](https://en.wikipedia.org/wiki/Fossil)-hunters or professional [paleontologists](https://en.wikipedia.org/wiki/Paleontology). As a result,Most fossils observed in the [field](https://en.wikipedia.org/wiki/Field_research) and most" museum-quality" specimens are macrofossils.We envisioned a college-level introductory text, including all macrofossil groups used in The study of the marine environment. We hoped to provide a source for basic information on each group, for comprehension of the type of reasoning applied to the study of microfossils and their use in (paleo) oceanography, and for locating essential background material and References necessary to pursue any group further. As recent advances in macro paleontology continue to transform what was predominantly a descriptive to a more interpretive sciencevital to (paleo)oceanography research, the number of researchers interested in its applications, Especially in the age determination of sediments has increased. Thus in several graduate Schools of Earth Sciences and Oceanography. |
| **11. Course objective:** By definition **macro paleontology**,the study of macroscopic fossils, cuts across Many classificatory lines. It includes within its domain the study of large numbers of taxonomically unrelated groups united solely by the fact that they must be examined with or Without microscope. The practical value of marine macrofossils in various fields of historical Geology is enhanced by their large size, abundant occurrence and wide geographic Distribution in sediments of all ages and in almost all marine environments. Due to their large size and large numerical abundance.  |
| **12. Student's obligation*** You must be ready to hear the lab explanation
* You must discuss and ask about all information that you can’t understand
* Always, you must read the required or text books to compare with lab that you receive

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| **13. Forms of teaching*** Power point presentations
* Laboratory discussions
* Sample diagnosis and prepared the report
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| **14. Assessment scheme**practical part equals **35%;** this degree will be approached byat least two examinations In addition to quizzes. Sometimes the activity of the students within the lab is evaluated And counted with the above-mentioned degree. ‌ |
| **15. Student learning outcome:**We can work in oil companies or any government departments and work in the field geology |
| **16. Course Reading List and References‌:****Main Text Books****Principle of Invertebrate Paleontology,** Robert R. Shrocj, William H. TwenhofelNew York Toronto London, 1953**Treatise on Invertebrate Paleontology ,** Raymond C. MooreThe geological Society of America and the university of Kansas press,1964**Journals and Bulletins****Macro Paleontology,** **Palaeogeography, Palaeoclimatology, Palaeoecology****Journal of Sedimentary Petrology****Journal of Geology, Nature, Proceedings of the Conferences** |
| **17. The Topics:** | **Lecturer's name** |
| In this section the lecturer shall write titles of all 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 Each term should include not less than 16 weeks  | Dr.Majeed Tomaex: (2 hrs)ex: 14/10/2015 |
| **18. Practical Topics (If there is any)** |  |
|     **Course Program****Week 1,2 – Preservation** Introduction; Importance of Macropaleontology; how can fossils Be Preserved? Why do you need to preserve? Types of Preservation. **Week 3,4- phylum: porifera (sponges)**Introduction ; Type of skeleton, Shape of skeleton, Ostia, Centeral Cavity, Canal system, Type of Spicules, Classification and age.**Week 5**- **Class: Demospongia** **Stromotoporoidea**Introduction of sponge, Coenesteoum shape, Surface Marking, Microstructure, Appearance in vertical thicknes, classification**.****Week 6 – Phylum: Bryozoa**Introduction; Shape of Zoarium, Autozooecium, Mesozooecium, Shape of aperture, Diaphragm in both Autozooecia and Mesozooecia,Acanthostyles, Monticulae and Macula, Classification**Week 7- First Examination****Week 8,9- Phylum Brachiopoda**Orientation, Shape, Outline of brachial view, LateralDimension (L:W:T) in mm., Hinge line, Commissure, Pedicle openings, Interarea, Surface sculpture, Classification**Week 10,11 - Rugosa corals**Orientation: Corallum , Solitary, Compound, Septa, Carinae,Fossula, Tabulae, Axial structure, Calice, Marginarium, Classification**Week 12,13 - Phylum Mollusca Class Bivalalvia**Orientation, Outline of the valve, Symmetry, Dimensions(mm), Umbo direction, Ligament pit, Adductor muscle scars (Myostracum) Dentition, Hing line, Pallial line, Commissure, Sculpture, Classification   **Week  14 -  Second   Examination** | Sazan Maghded Ahmedex: (2hrs)ex: 9/10/2022 |
| **19. Examinations:****We put two examples of the questions :**

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| **Name: Second class** **Group:**  |

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| **Q-1** **I -Phylum:****II-Shape of the aperture****III- Name:**  |
| **Q-2**  **I- Hing line****II- Umbo direction****III-Age** |
| **Q-3**  **I-Coiling****II- Suture****III-The spire** |
| **Q-4** **I- Aductor muscle scars****II- Pallial line****III-Ligament pit****IIII-Name** |
| **Q-5**  **I-Shape****II- Hing line****III-Sculpture** |
| **Q-6**  **I- Shape****II- Size of the last whorl****III- Name** |

**GOOD LUCK** **Lecturer of pract.** **Sazan Maghded Ahmed**

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| **Name: Group:**  **Practical Principle of Paleontology Exam 4/1/2022**   |

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| **Q-1** I – Form of Corallum:II- Order: |
| **Q-2**  Write the form of Corallum for the followings:**A- B-** |
| **Q-3** I – Form of Corallum:II- Septa: |
| **Q-4** I- Name:II- Order: |
| **Q-5** I- Autozooecium:II- Shape of Aperture:  |
| **Q-6** I- Shape of Zoarium:II-Phylum: |
| **Q-7**  I- Shape of Aperture:II- Phylum: |
| **Q-8**  Shape of Zoarium for the followings:**A-** **B-** |
| **Q-9**I- Autozooecium:II –Mesozooecium: |
| **Q-10** I – Shape of lateral view:II- Hinge line: |
| **Q-11** I- Shape of lateral view:II- Commissure: |
| **Q-12** I– Hinge line:II- Shape of outline: |
| **Q-13** I- Inter area:II- Surface Sculpture: |
| **Q-14** I- Dimention:II- Name:  |
| **Q-15**  I- Commissure:II- Hinge line: |
| **Q-16** I- Surface Sculpture:II- Age:  |
| **Q-17**  I- Commissure:II- Hinge line: |
| **Q-18** Write the phylum for the following:**A-** **B-**  |
| **Q-19**  I- Pedical opening:II-Shape of lateral view: |
| **Q-20** Differences between **A** and **B** in order:**A-** **B-**  |

 **GOOD LUCK** **Lecturer of pract.** **Sazan Maghded Ahmed** |
| **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 پێداچوونه‌وه‌ی هاوه‌ڵ** This course book has to be reviewed and signed by a peer. The peer approves the contents of your course book by writing few sentences in this section.*(A peer is person who has enough knowledge about the subject you are teaching, he/she has to be a professor, assistant professor, a lecturer or an expert in the field of your subject).*ئه‌م کۆرسبووکه‌ ده‌بێت له‌لایه‌ن هاوه‌ڵێکی ئه‌کادیمیه‌وه‌ سه‌یر بکرێت و ناوه‌ڕۆکی بابه‌ته‌کانی کۆرسه‌که‌ په‌سه‌ند بکات و جه‌ند ووشه‌یه‌ک بنووسێت له‌سه‌ر شیاوی ناوه‌ڕۆکی کۆرسه‌که و واژووی له‌سه‌ر بکات.هاوه‌ڵ ئه‌و که‌سه‌یه‌ که‌ زانیاری هه‌بێت له‌سه‌ر کۆرسه‌که‌ و ده‌بیت پله‌ی زانستی له‌ مامۆستا که‌متر نه‌بێت.‌‌  |