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**Department of Soil and Water**

**College of Agricultural Engineering Science**

**University of: Salahaddin University-Erbil**

**Subject: Soil Genesis and Morphology/Theoretical**

**Course Book : 3rd Year Student**

**Lecturer's name: Hawar Abdulrzaq Sadiq Razvanchy**

**Academic Year: 2022-2023**

**Course Book**

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| **1. Course name** | **Second semester/ Spring semester** |
| **2. Lecturer in charge** | **Hawar Abdulrzaq Sadiq Razvanchy** |
| **3. Department/ College** | **Soil and Water science/** **Agricultural Engineering Science** |
| **4. Contact** | **e-mail: hawar.sadiq@su.edu.krd****Tel: 0750 454 2683** **0770 064 8281** |
| **5. Time (in hours) per week**  | **Practical: 2**  |
| **6. Office hours** | **6 hours**  |
| **7. Course code** | **-** |
| **8. Teacher's academic profile**  | **He finished his BSc in Salahaddin University-Erbil college of agricultural engineering science soil and water department in 2008 and worked as a demonstrator in the same department in 2009. Also, he obtained an MSc degree in Remote Sensing in 2014. In 2022 he finished his PhD in Soil Survey and Classification. Now he is a lecturer and teaching staff member in the same department.** |
| **9. Keywords** |  |
| **10. Course overview:** With a focus on identifying diagnostic horizons, Soil Genesis will provide students with a fundamental understanding of how soils develop over time as influenced by physical, chemical, biological, and climatic factors. The natural processes that take place in soils and produce distinctive soil morphology are discussed. There will be classroom discussion as well as field observations of processes like weathering, illuviation, podsolization, reduction/oxidation reactions, and erosion/deposition. |
| **11. Course objective:**1. Weathering processes and nature of parent material.
2. Soil genesis, soil forming factors, and processes.
3. Soil morphology and soil properties used to identify the soil.
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| **12. Student's obligation**In this course the student at every lecture should ready to quick test (quiz) of previous lectures. Whereas they asked about what we talked and studied in previous lecture. |
| **13. Forms of teaching*** Data show or projector for learning videos
* Presentation for the main content
* Real soil and rock examples
* White board
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| **14. Assessment scheme**‌

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| First examination  | 15 |
| Second examination | 15 |
| Quiz  | 5 |
| Activity  | 5 |
| Final assessment  | (15+15/2)+5+5= final mark |

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| **15. Student learning outcome:*** Understand different processes and factors affecting the rate of weathering and production of parent material.
* Study the key soil properties such as texture, structure, color, pH, parent material etc. which are used in soil morphology
* Identify and differentiate soil horizons.
* Learn about basic approaches to interpret soil and landscape features for various land uses.
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| **16. Course Reading List and References‌:*** Soil Survey Division Staff, (2017). Soil Survey Manual. In: DITZLER, C., SCHEFFE, K. and MONGER, H. (eds.) USDA Handbook 18. Government Printing Office, Washington D.C., USA.
* WEIL, R. R. & BRADY, N. C. (2017). Soil erosion and its control. FOX, D. (ed.) The nature and properties of soils. Global edition. Edinburgh Gate, Harlow, Essex CM20 2JE, England: Pearson Education Limited.
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| **17. The Topics:** | **Hawar Razvanchy** |
| **Weathering** |  |
| **What environmental factors influence soil formation?** |  |
| **Classification of Parent Materials** |  |
| **Classification of Parent Materials** |  |
| **Classification of Parent Materials** |  |
| **How does time affect soil formation?** |  |
| **Soil Forming Process** |  |
| **The Soil Profile** |  |
| **Specific soil formation processes** |  |
| **Lessivage, Gleization, Podzolization , Pedoturbation, Calcification, Salinization.** |  |
| **Horizons**  |  |
| **Subordinate and Transitional Horizons** |  |
| **Diagnostic Horizons** |  |
| **Soil Color** |  |
| **Soil Consistence** |  |
| **Soil Texture** |  |
| **18. Practical Topics**  | **Hedi Halo** |
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| **19. Examinations:*****Q/*** What is the kind of climate in a landscape that may be increase weathering? ***Typical answer/*** Warm and dry***Q/*** Streams discharged into the lake, reservoir, or ocean.***Typical answer/*** Delta Deposits |
| **20. Extra notes:** |
| **21. Peer review پێداچوونه‌وه‌ی هاوه‌ڵ**   |