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**Department of Science and environmental health**

**College of Sciences**

**University of Salahaddin**

**Subject: Soil pollution**

**Course Book – *For example* ( Year 4)Second semester**

**Lecturer's name Prof.Dr. Dalshad Azeez Darwesh**

**Academic Year: *2022-2023***

**Course Book**

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| **1. Course name** | **Soil sciences**  |
| **2. Lecturer in charge** | **Dr.Dalshad A.Darwesh** |
| **3. Department/ College** | **Sciences and Environmental health/Science** |
| **4. Contact** | **e-mail: dalshas.darwesh@su.edu.krd****Tel: (optional)** |
| **5. Time (in hours) per week**  | **Theory: 2** **Practical: 2**  |
| **6. Office hours** |  **Every days from 10:30 to 12:30 .Availability for students during the week** |
| **7. Course code** |  |
| **8. Teacher's academic profile**  | **My academic life beginning when BC.s was obtained in biology department college of education during the years 1991-1994, after that the first job was determined as assist biology for me in the same department and college as mentioned above , while the MS.c degree was obtained in the plant nutrition in the college of sciences , biology dept. during years 1998-1999, Where as the Ph.D degree was completed in soil and water department , college agriculture during years 2004-2007 in soil and plant nutrition specialty, in 2010 my job title translocated to environmental sciences from biology department, because my speciality present in the former department .** |
| **9. Keywords** | **Soil science , encyclopedia of soil , soil pollution , environmental index ….?** |
| **10. Course overview:** The course will involved soil pollution texts of selective topics together with print media or internet articles which deal with current soil issues." Instructional strategies attempt to strike a balance between developing the students' ability to cope with soil pollution texts, extending their general academic reading skills, and increasing their basic knowledge and understanding of soil contamination. The course will give students a better understanding of a number of soil pollution topics, the their properties and classification in of soil, with some extra topics that will be indentified as the course progress. students will be asked to prepare research papers on selective topics and summarize articles contents published in English into either Kurdish or Arabic language, those articles need to be from printed media or internet articles. There will be classroom discussions and the lecture will give enough background to translate, solve, analyze, and evaluate problems sets, and different issues discussed throughout the course. |
| **11. Course objective:**The course will cover soil pollution texts of selective topics together with print media or internet articles which deal with current soil issues." Instructional strategies attempt to strike a balance between developing the students' ability to cope with soil contaminates texts, extending their general academic reading skills, and increasing their basic knowledge and understanding of soil. The course will give students a better understanding of a number of soil pollution topics, the followings are examples but not restricted to: those alter the soil profile soil mineral and some chemical properties of soil, with some extra topics that will be indentified as the course progress. |
| **12. Student's obligation**students will be asked to prepare research papers on selective topics and summarize articles contents published in English into either Kurdish or Arabic language, those articles need to be from printed media or internet articles. There will be classroom discussions and the lecture will give enough background to translate, solve, analyze, and evaluate problems sets, and different issues discussed throughout the course. |
| **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 summary of conclusions, classification of materials and any other illustrations, besides worksheet will be designed to let the chance for practicing on several aspects of the course in the classroom |
| **14. Assessment scheme**The students are required to do one closed book exam at the mid of the semester besides other assignments including class room activity and solving statistics problem. The exam has 30 marks, the attendance, classroom activities; count 10 marks. There will be a final exam on 60 marks. So that the final grade will be based upon the following criteria:Mid-semester exam: 30%Classroom participation and assignments 10%Final exam: 60%‌ |
| **15. Student learning outcome:**The main object of this course is to give the student the information about the soil pollution and the pollutants ( physical , chemical , and biological ) properties and these properties in relation to land use and management , as well as find out the relation between soil pollutants with plant growth , organisms , building ,road and dam construction, however explain the main role of soil in another science such as geology , biology , agriculture and environmental science , However we try to describe the main function of soil in biogeochemical cycle of nutrient, stability and support , purification of water , detoxification and degradation of toxic materials that come from different source , I think that soil is very important I both sector prime and governorate sectors  |
| **16. Course Reading List and References‌:**Mirsal.I.A (2008) Soil pollution monitoring, remediation and origin . Springer-Velarg-Berlin . P:310.Yaro.B ;Prost .R; and Calvet .P (1996)Soil pollution Processes and Dynamic . Springer-Velarg-Berlin.P:516..And any other **soil pollution textbook** published in 21'*t* century.The core materials of the course consists of the above book, articles from media and Internet, and lecture's notes, make sure you read all the materials and prepare well before going for the exams. |
| **17. The Topics:** | **Lecturer's name** |
| **Week 1:** **Explain Course book****Week 2:****Introduction, soil pollution and some terminology ?** **Weeks 3:****Soil degradation****Week 4:** **Ion exchange** **Week 5:****Nitogen****Week 6:** **phosphorus*****Week7:******Agrochemical pollution fertilization*** **Week 8:****Organic pollutants (pesticides)** **Week 9:****Inorganic pollutants trace metals** **Week 10:** **Essential trace metals Non -essential trace metals****Week 11:*** + **Wastes** Oil and fuel dumping
	+ Direct discharge of [industrial wastes](https://en.wikipedia.org/wiki/Industrial_waste) to the soil
	+ Discharge of [sewage](https://en.wikipedia.org/wiki/Sewage)

[Landfill](https://en.wikipedia.org/wiki/Landfill) and [illegal dumping](https://en.wikipedia.org/wiki/Illegal_dumping)**Week 12:** **Radio nuclear pollution** [**Nuclear wastes**](https://en.wikipedia.org/wiki/Nuclear_waste)**Week 13:** **Biological pollutants , Bacteria , fungi …edt****Week 14****Soil quality index** | Lecturer's nameex: (2 hrs) |
| **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 nameex: (3-4 hrs) |
| **This lesson is new to this course, so there are no exam questions yet?** |
| **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**   |