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**Department of Environmental Science**

**College of Science**

**Principles of Environmental Science**

 **Course book for 1st stage**

**Assistant Lecturer: Rezan Sabah Ahmed**

**MSc. In Environmental microbiology**

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 **Academic Year: 2022-2023**

**Subject: Principles of Environmental Science**

**Class Time: 8:30am- 12:30pm**

**Course Description: Interdisciplinary study of both natural (biology, chemistry, geology) and social (economics, politics, ethics) sciences as they apply to the environment. Focus on current global concerns, including global warming, overpopulation, deforestation, pollution, biodiversity and resource use. Practical laboratory experience emphasizes the application of fundamental principles of environmental science as well as critical thinking and analysis.**

**Course Objectives: Through the course students will be able to:**

**1. Recognize major concepts in environmental sciences and demonstrate in depth understanding of the environment.**

**2. Develop analytical skills, critical thinking, and demonstrate problem solving skills using scientific techniques.**

**3. Demonstrate the knowledge and training for entering professional schools, or the job.**

**Grading: A typical class will be to start with a brief quiz. Every student must have three examinations, the attendance and classroom activities. As well as the final examination of the course will be on 20 marks. So that the final grade will be based upon the following criteria:**

* **Mean of three practical examinations: 30 %**
* **Daily quizzes: 5%**
* **Final practical examination: 35 %.**

**Text Book References:**

1. **Michael Begon, Colin R. Townsend, and John L. Harper (Ecology from individuals to ecosystems).**
2. **Jan J. Boersema and Lucas Reijnders (Principles of Environmental Sciences).**
3. **Michael Allaby (Basics of Environmental Sciences).**

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| ***Course programme:***

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| **Weeks** | **Subjects** |
| **1** | **Preface** |
| **2** | **Introduction to Environmental Science** |
| **3** | **Some principles and terms of environmental science** |
| **4** | **Sampling methods and Strategy** |
| **5** | **Metrology** |
| **6** | **Air, Water and Soil temperature** |
| **7** | **Water and Soil pH** |
| **8** | **First practical examination** |
| **9** | **Water and Soil Electrical conductivity (EC)** |
| **10** | **Alkalinity** |
| **11** | **Acidity** |
| **12** | **Determination water color** |
| **13** | **Determination water odor** |
| **14** | **Turbidity** |
| **15** | **Second examination** |
| **16** | **Aquatic ecology** |
| **17** | **Dissolved solid (D.S.)** |
| **18** | **Study of aquatic microbiology** |
| **19** | **Hardness** |
| **20** | **Dissolved solid** |
| **21** | **Third examination** |

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