

Ministry of Higher Education and Scientific research



Department of Environmental Sciences and Health

College of Sciences

University of Salahaddin

Subject: Environmental Policy and Renewable Energy

Course Book – (2nd Year)

Lecturer's name: Dr. Yahya Ahmed Shekha

Academic Year: 2023/2024

Course Book

1. Course name	Environmental policy and Renewable energy
2. Lecturer in charge	Yahya Ahmed Shekha
3. Department/ College	Environmental Sciences and Health - Sciences
4. Contact	e-mail: yahya.shekha@su.edu.krd Tel: (optional) 00964750
5. Time (in hours) per week	For example Theory: 2 Supervision
6. Office hours	Every day before and after the lecture except off day
7. Course code	
8. Teacher's academic profile	<p>I attained a B.Sc. degree in the Biology department college of science in 1992. After three years (1995) I was awarded an M.Sc. degree in Aquatic Microbiology in the same department. On 31-5-2003 I upgrade scientifically to lecturer. The Ph.D. degree was awarded in 2008 in Ecology and Pollution/ Water quality and Pollution, Biology Department, University of Baghdad, Iraq.</p> <p>My academic title to Assistant Professor was attained on 27-3-2009. My scientific upgrade to Professor Degree is under process since 16-4-2016. During these years I taught students (B.Sc., M.Sc., and Ph.D.) in the Biology and Environment departments of different Colleges in many Universities in the Kurdistan Region various topics related to biology and ecology. Now I graduated with four M.Sc. students and now I supervised Ph.D. students in Environmental Sciences Department. I published more than 50 articles in local and international journals and participated in many scientific conferences.</p>
9. Keywords	Environmental policy, Geothermal energy, Biofuel, wind energy,
10. Course overview:	<p>The course will cover principle information about renewable energy types, and understanding of rule of environmental policy A suitable environment is necessary for any organism, since life depends upon the continuance of a proper exchange of essential substances and energies between the organism and its surroundings. And the study of the weather or atmospheric factors such as temperature, pressure, wind, precipitation and sun energy and others. The course will give students a better understanding of the Environment that surrounded us</p>

11. Course objective:

This course book provides comprehensive coverage for a first course in Environmental policy and its rules. Provide information about type of renewable energy and how we can take benefit from it. The book provides guidance on how to determine the proper technique of how extract and take benefit from such sources. with separate and distinct sets of requirements for the three different categories of generators, and gives basic supplemental guidance for transporters, storage, and disposal facilities. It covers proper completion of hazardous waste manifests and reports.

12. Student's obligation

When I ask the student for preparing in class, and in the exam, preparing and writing a report and discusses in class, this stimulate the students to become more active and able to learn more things about environment science.

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 renewable and any other illustrations, besides worksheet will be designed to let the chance for practicing on several aspects of the course in the classroom, furthermore students will be asked to prepare research papers on selective topics and summarise 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, analyse, and evaluate problems sets, and different issues discussed throughout the course.

To get the best of the course, it is suggested that you attend classes as much as possible, read the required lectures, teacher's notes regularly as all of them are foundations for the course. Lecture's notes are for supporting and not for submitting the reading material including the handouts. try as much as possible to participate in classroom discussions, preparing the assignments given n the course.

14. Assessment scheme

Your final grade will be derived as follows:

Quizzes: About 10 quizzes will be given throughout the semester. They

will be given at the beginning of the class period and last 10 minutes.10% of your grade.

Exams: There will be two closed-book exams given throughout the semester. Each test will be scheduled for 90 minutes.30% of your grade.

Final Exam: The Final Exam is Comprehensive in all course outlines.60% of your grade

Mean of two examinations: 50%

Final examination: 50%

Final Exam: The Final Exam is Comprehensive in all course outlines.60% of your grade

Mean of two examinations: 50%

Final examination: 50%

15. Student learning outcome

Environmental energy and renewable energy is one of the most important lectures in the Environmental Sciences Department because the student in this course learn many things about Meteorology and Clean Energy around us and can the student to water management, how to take benefit from such resources, guideline processes that undergoing to form such resources and increase the number of people whom not full-time water can understand and apply its general concepts to a broad range of related disciplines all these things can students apply in our daily life for services the community

16. Course Reading List and References:

1. Demirbas A. Energy concept and energy education. Energy Educ Sci Technol Part B 2009;1:85–101.

2. Kurnaz MA, Calik M. A thematic review of ‘energy’ teaching studies: focuses, needs, methods, general knowledge claims and implications. Energy Educ Sci Technol Part B 2009;1:1–26

3. Ather, G.D. (2005). Essential Meteorology. 3rd Edition. Doubleday and Co., Garden City, NY.

4. Prof. R N Singh, Professor, School of Energy and Environmental Studies, Devi Ahilya Vishwavidyalaya, Indore

5. Prof. J S Saini, Professor Emeritus, Department of Mechanical and Industrial Engineering, IIT Roorkee

6. Dr. R.L. Sawhney, Former Professor, TERI Unievrsity, Delhi; School of Energy and Environmental Studies, Devi Ahilya Vishwavidyalaya, Indore

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 examinations.

Students are encouraged to search for any other materials that may help improve their English language ability in reading, writing, listening and speaking plant communities' texts.

17. The Topics:

Lecturer's name

Week 1:

Introduction

- **Energy: Past, Today, and Future. A brief history of energy consumption.**

Week2:

- **Energy & Environment**
- **Non-renewable energies**

Week 3:

Renewable energy

Week 4 and 5:

Solar Energy

- **Sun and its Energy: Basics of Solar Energy**
- **Solar Energy in the Past**
- **Solar Thermal Energy**
- **Solar Photovoltaic**

Week 6 and 7

Wind Energy

- **Historical Background**
- **Wind Resources**
- **Wind Turbines**
- **Environmental Impact**

Week 8

Ocean Energy

- **Ocean Energy Potential against Wind and Solar**
- **Wave Characteristics and Statistics**
- **Wave Energy Devices**

<p><u>Week 9 and 10:</u></p> <ul style="list-style-type: none">• <u>Tide characteristics and Statistics</u>• <u>Tide Energy Technologies</u>• <u>Ocean Thermal Energy</u>• <u>Osmotic Power</u>• <u>Ocean Bio-mass</u> <p><u>Week 11</u></p> <p><u>Geothermal Energy</u></p> <ul style="list-style-type: none">• <u>Geothermal Resources</u>• <u>Geothermal Technologies</u> <p><u>Further Reading • Aldo V. da Rosa, “Fundam</u></p>	
<p>18. Practical Topics (If there is any)</p>	
<p>19. Examinations:</p> <p>Examples of Examinations</p> <p>First Examination</p> <p>Q1:- Explain geothermal energy.</p> <p>Q2:- Write about wind energy.</p> <p>Q3:- Binary bed process?</p> <p>Q4:- What are Precipitation Processes</p> <p>Q5:- How take benefit from underground energy?</p>	