

Theoretical and practical courses-Ilam University of Medical Sciences

- * Course Name: Waste Collection and Disposal
- * Field and Degree: Environmental Health - Bachelor's Degree
- * Day and time: Saturday 16-14
- * Venue: School of Health
- * Number and type of unit (theoretical / practical): 3 units (theoretical and practical)
- * Prerequisite courses: -
- * Name of the person in charge of the course (course instructor): Dr. Seyed Abbas Mirzaei
- * Contact number: 09183459155
- * Office address: Ilam University of Medical Sciences - Faculty of Health - Department of Environmental Health Engineering

General purpose of the lesson:

Familiarity of students with the economic importance of waste, sources of production and rate of waste production and ways to reduce it, physical and chemical properties of waste, methods of waste sampling, methods of waste collection and transportation and methods of waste recycling and disposal

Specific or partial objectives of the lesson: The specific objective is better to be written behaviorally (the behavioral objective has the audience, behavioral verb, degree and criteria of the conditions)

At the end of this course, students should be able to understand the economic importance of waste, waste generation resources in cities, waste production rate and reduction methods, physical and chemical properties of waste, waste sampling methods, various methods of collection and transportation and waste disposal, waste recovery and disposal methods in urban communities are familiar.

Student duties: (Student homework during the semester)

Regular class attendance, student participation in class activities, problem solving

The main sources of the lesson:

- 1- G. Tchobanoglous, H. Theisen, S. A. Vigil. Integrated Solid Waste Management: Engineering Principles and Management Issues. McGraw-Hill, 1993.
- 2- G. Tchobanoglous, F. Kreith. Handbook of Solid Waste Management. McGraw-Hill, 2002.
- 3- Qasem Ali Omrani. Solid waste, Islamic Azad University Press, 1998.

Teaching method + teaching aids used:

Teaching methods include student-centered teaching methods, lectures, group discussions, projects, problem solving (whiteboard and magic)

*** Methods and time of assessment and evaluation of the student and the bar related to each value B:**

Method	Score	Date	Time
Quizzes, problem solving and exercises	2	During semester	
midterm	4		
End of semester	14		

Lesson rules and expectations from students:

- Regular attendance at class and active participation in discussions
- Do homework regularly
- Observance of ethical issues

Schedule for presenting the curriculum for waste collection and disposal in the first semester 2020-2021

Session	Time	Topic	Lecturer	teaching method
1	14-16	Importance of the course and presentation of the course title, how to teach and evaluate, resources used, review of definitions of waste and their classification, sources of production	Dr .Mirzaei	Lectures and group discussions
2		History of Solid Waste Management, Health, Economic and Aesthetic Aspects of Solid Waste Management,		
3		Definition of solid waste, its types, physical, chemical and biological composition of solid waste and sampling methods		
4		How to determine the amount of production waste and per capita waste production of an urban community		
5		Measurement of physical properties of solid waste (density, moisture content, moisture holding capacity)		
6		Measurement of chemical and biological properties of solid waste (density, moisture content, moisture holding capacity)		
7		Methods of collection and transportation of solid waste		
8		Continue the methods of collecting and transporting solid waste		
9		Waste recycling, rules and how to implement it		
10		Different types of waste disposal methods		
11		Compost, its importance and different methods of compost,		
12		Microbiology and quality control tests of compost		
13		Waste incineration, its advantages and disadvantages		
14		Sanitary burial, advantages and disadvantages, leachate control at the burial site		
15		Hazardous waste and its types, radioactive waste and its disposal methods		
16		Biogas, its history in Iran and the world, types of biogas methods and its advantages and disadvantages		
17		National and international waste laws		
18				

		End of semester		
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- For the practical unit of students with sampling methods and quantitative and qualitative analysis of waste, scientific visit to Ilam waste disposal site, hospital waste, flake recycling workshop and compost plant in Kermanshah.