WASTE MANAGEMEN, WASTE DISPOSAL AND RECYCLING
Spring 2022

Course Code:	**ENV –**
Course ID:	
Course Instructor:	**Dr. Kubatbek Muktarbek uulu**
Course Duration:	**18 Weeks**
No. of Credit Units:	**6.0**
Class meeting/Time:	**Tuesday and Thursday 15:35**
Mode:	**ONLINE**
Office Hours	**By appointment**

Course Description

Due to unplanned developmental activities as well as ever-increasing population, which has caused enormous strain on the environmental resources, societies across the world face several problems of environmental degradation. However, it is imperative to maintain a balance between the capacity of the environment and the quantum of sustainable utilization. This is only possible by understanding the environment in its totality and the principles of its scientific management. This course will explore the principles, problems, and fundamentals on Waste Management Disposal and Recycling from a sustainable development and social stability perspective. It will provide an overview examination of waste management including collection, recycling, transfer, and transport, and disposal. Methods of processing, basic disposal facilities, disposal options, and the environmental issues of waste management within the local and regional context will be covered in this course.

We will discuss aspects of recycling, solid waste processing, volume reduction, encompassing typical recyclable materials (paper, plastics, cans, and organics), construction and demolition debris, electronics, and more. The course will also refer to some international practices and local initiatives on techniques, technologies, and programs that address environmental and sustainable issues on waste management.

Learning Objectives/Outcomes:

In this course, students are expected to:

- explore and understand issues, principles, current policies and practices regarding fundamentals of waste management systems and technologies;
- acquire understanding and comparison of different waste management systems and technologies;
- demonstrate analysis, knowledge and understanding of the need to create more advanced waste management systems in society;
- develop frameworks of approaches and analyses toward better waste management systems and technologies that will help societies to minimize or limit the impact of waste on the environment and human health as well resource recovery. Waste prevention and recycling ranked highest.

Readings, Supplementary Materials & Assignments - To be posted on the e-course

Course Requirements and their weight in the final grade:

Attendance/Participation	15%
Presentations on readings (in class)	20%
Midterm Exam	30%
Final Exam	35%
Total:	100%

General Course Outline and Schedule

(subject to change at instructor's discretion)

Week	Topic	Assignments
Week 1	**Introduction to Waste Management Waste Disposal and Recycling** History of Waste Treatment and Disposal. Definition of waste.	Introduction to the course and requirements; Readings & Discussion
Weeks 2-4	**Waste Recycling Management.** Waste recycling, reduction and reuse. Municipal solid waste and industrial and commercial waste recycling in developed countries. Economic considerations of recycling; life-cycle analysis of waste recycling.	Readings & Discussion Student presentations
Weeks 5-6	**Waste Disposal Management.** Site selection and assessment. Landfill design and engineering for operational practice. Types of waste landfilled, inert wastes, bio-reactive wastes. Landfill gas: landfill gas migration, management and monitoring, landfill site completion and restoration.	Readings & Discussion Student presentations
Week 7	**Waste Management Challenges in Developing Countries**	Students Presentations
Weeks 8-10	**Plastics Waste Management. W**ide-ranging properties and a variety of applications and management. **Mid-Term Exam**	Readings & Discussion Student presentations
Weeks 11-12	**Electronics Waste Management.** Technical complexity of eWaste; recovery and reuse of precious materials, the design and treatment of electrical and electronic products.	Readings & Discussion Student presentations
Weeks 13-14	**Automobile Recycling Construction Waste Management.** Recycling and disposal of cars and metals. **Construction Waste Management.** Construction industry is one of the industries that generates and dumps heaps of waste to landfill and thus, one of the major contributors to environment degradation and Pollution.	Readings & Discussion Student presentations

Week 15	**Waste Water Treatment**	Readings & Discussion Student presentations
Week 16	**Summary and Conclusion**	
	Final Exam	