The University of Jordan
School of Engineering
Civil Engineering Department

M.Sc. Water and Environment
First Semester 2018/2019
Elective course

Air Pollution (0941772)

Course Description

Background and basic definitions, sources of air pollution, atmospheric transport of pollutants, properties' of gaseous and particulate matter, sampling, analysis and design (theory, equipment and techniques) physical analysis of particles and specific tests, acid and alkaline rains and their hazards on public health, particulate and gases control methods and their design, odor control, noise pollution.

Instructor: Dr. Shadi Moqbel
Office hours: Thursday 2-3:30 pm
Textbook:
1- Air Quality , by Thad Godish, 4th edition or 5th edition, Lewis Publishers
2- Reading material handout provided through the UJ e-learning portal

References

1- Atmospheric Pollution : History , Science and Regulation by Mark Jacobson
2- Fundamentals of Air Pollution by Daniel Vallero, 4th Edition, Academic Press.
3- Atmospheric chemistry and physics: From air pollution to Climate Change, by John Seinfeld and Spyros Pandis, (2006).
4- Air Pollution Control: A design approach, by C. Cooper and F. Alley 4th edition, Waveland Press.
5- Indoor Air Quality: A comprehensive reference book, Air Quality Monograph Vol. 3. Edited by M. Maroni, B. Seifert, and T. Lindvall

Learning objectives

1- Discuss the different air pollution effects, control laws and regulations.
2- Explain the chemical processes that govern the formation and destruction of air pollutants
3- Understand air pollutants measurements and emission estimates.
4- Practice on some of the air pollution concentration models
5- Understand air pollution control for major air pollutants

Topics

- Introduction and Historical overview of air pollution problem
- Regulations
- Air pollutants and their characteristics
- Sampling, measurement and analysis
- Atmospheric structure and composition
- Atmospheric motion and pollutant transport
- Stationary pollution sources and emissions
- Particulate pollutants control
- Gaseous pollutants control
- Mobile sources

- Indoor air quality
- Air pollution modeling
- Noise pollution

Grading system

Midterm exam	30%
Short exam and assignments	30%
Final exam	40%

Conduct

This is a graduate course. Mature and responsible behavior is expected all the time. Any misbehavior will be handled according to the University of Jordan regulations