CH 244 August 3:0

Treatment of drinking water

Instructor

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Teaching Assistant

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Department: Chemical Engineering

Course Time: Mon., Wed., Fri., 12 noon -1 p.m.

Lecture venue: class room in the Chemical Engineering department

Detailed Course Page:

Announcements

Brief description of the course

For postgraduate and advanced undergraduate students who wish to know about methods for treating drinking water. A familiarity with calculus and undergraduate level chemistry would be helpful.

Prerequisites

calculus and undergraduate level chemistry

Syllabus

Availability of water; contaminants and their effects on human health; quality standards; removal of contaminants by various processes: chlorination; filtration; coagulation and flocculation; reverse osmosis; adsorption and ion-exchange; rainwater harvesting; Sodis

Course outcomes

Students will learn about the availability and distribution of water, different methods of treating water to make it potable, and mathematical models for some of the processes

Grading policy

20 % for assignments/tutorials (about 6 in a semster)

5 % for a term paper or a term project

25 % for tests (two in a semster)

50 % for the final examination

Assignments

Every fifth lecture will be a tutorial in which the students try to solve one or two problems, with assistance from the instructor and by discussion among themselves. The rest of the problems given in the tutorial will be solved by the students at home and submitted in about a week to ten days. In every tutorial, a brief biography of one of the scientists whose work is relevant to the course will be presented.

Resources

Books: Droste, R.L., Theory and Practice of Water and Wastewater Treatment, John Wiley (1997)

Sawyer, C.N., McCarty, P.L., Parkin, G.F., Chemistry for Environmental Engineering and Science, Tata McGraw-Hill (2003)

World Health Organization, Guidelines for Drinking-water Quality (2011)

Lecture notes

Current literature