

## SENG 310/680 Syllabus, Fall 2015

Course: SENG 310/680 Industrial Hygiene Engineering (3)  
Class Schedule: TR 3:55-5:10 pm (Location: CHEN 106, Jack E. Brown Building)

### Instructor

Noor Quddus  
Office hour: Wednesday 10:00 am to 12:00 pm  
Office: 418 Jack E. Brown Building (JEB)  
Email: nooralquddus@tamu.edu  
Phone: 979-985-1330

### Teaching Assistant

Yizhi Hong  
Graduate Student at MKOPSC  
Email: hongcome@tamu.edu

### Textbook

Basic Concept of Industrial Hygiene by Ronald Scott (ISBN-10: 1566702925 or ISBN-13: 978-1566702928)

### Description

Application of scientific and engineering principles in the selection and design of control systems related to chemical, physical and ergonomic exposures in the process and manufacturing industries; relationships of criteria, analysis and specifications for the assessment and control of occupational related illnesses.

### Course Objectives

1. To introduce industrial hygiene engineering field from a historical standpoint and to describe the legal basis of health and safety in the U.S.
2. To focus on the chemical hazards (the problems arise from skin contact/inhalation of chemicals, the detection and control of airborne contaminants, and the thread of fire or explosion are discussed)
3. To discuss injuries as a result of sound, radiation, heat, biological agents, and accidents, and to introduce ergonomics.
4. To introduce important industries and application of safety principles.

### Course Topics

- Introduction to Industrial Hygiene
- Federal Regulations
- Hazard Communication
- Basics of Toxicology: Toxic Effects
- Basics of Toxicology: Measuring Toxicity
- Basics of Toxicology: Toxicokinetics
- Dermatitis and Eye Hazards
- Inhalation Toxicology
- Monitoring Atmosphere
- Clean Air
- Fire and Explosion
- Protection from Chemicals in special situation
- Hearing Loss
- Radiation
- Working in Extreme Temperature

- Prevention of Accident
- Cumulative Trauma
- Bio-Hazards

### Methods of Evaluation

	In-Class	Distance Learning (DL)
Exam 1	20%	20%
Exam 2	20%	20%
Exam 3	25%	25%
Homework	10%	15%
Attendance + In-Class Practice + Quiz	15%	-
Project	10%	20%

### Grades

Total Marks	Grade
90 - 100	A
80 - 89	B
65 - 79	C
50 - 64	D
< 50	F

### Class Policies

**Exams:** Each of the three exams will be based on the class lectures, homework, and material covered, distributed, or assigned in class. Exam I is scheduled on Sept 29<sup>th</sup> (Monday) and Exam II on Oct 29<sup>th</sup> (Wednesday) during the regular class time. Final exam will be held on the officially assigned time slot and location. *For the DL students*, exams will be held on the same day but at a different time.

**Make-Up Policy:** There will be no make-up exams or quizzes UNLESS the student has an official excuse or permission from the instructor prior to the exam. Student will be given zero credit for the examination that is missed.

**Attendance, In-class practices and Quizzes:** The quizzes and in-class practices may be unannounced. In-class practices will be used to evaluate students' participation in the class. Most quizzes will be about 10 minutes long. Attendance will be taken at the beginning of the class.

**Homework:** Homework sets will be assigned as needed (could be on weekly basis), and will be due at the beginning of class of the assigned day. Homework will be performed and submitted by students in teams assigned by the instructor. Late homework will not be accepted, except that prior approval has been obtained. Homework is generally not accepted after one week from the due date and will be considered zero point.

**Project:** Students will participate in a team project assigned by the instructor. Each team will be formed with three to four members. The grading of the project will be based on project report and presentation. Presentation will be arranged one week before the finals. Please be aware that the presentations may be arranged outside scheduled class time, depending on the availability of the room. The format of the report and presentation will be provided in the class.

### Notices

1. Americans with Disabilities Act (ADA) Policy Statement

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities, in Room 118 of the Wofford Cain Hall or call 845-1637.

2. Academic Integrity Statement

**“An Aggie does not lie, cheat, or steal or tolerate those who do.”**

Please consult the Honor Council Rules and Procedures on the web at <http://www.tamu.edu/aggiehonor>

### Tentative Course Schedule

Date		Topics		Note
Sep	1	Ch.1 Introduction and Historical Review	T1	
	3	Ch.1 Introduction and Historical Review	T1	
	8	Ch.2 Government Regulation	T2	
	10	Ch.2 Government Regulation	T2	
	15	Ch.3 Toxic effect	T3	
	17	Ch.4 Measuring Toxicity and Assessing Risk	T3	
	22	Ch.5 Toxicokinetics	T3	
	24	Ch.5 Toxicokinetics	T3	
	29	Exam I		
Oct	1	Ch.6 Occupational Dermatoses and Eye Hazard	T4	Project topics assigned
	6	Ch.7 Inhalation Toxicology, Review	T5	
	8	Ch.8 Protecting the Worker I	T6	
	13	Ch.9 Protecting the Worker II	T7	
	15	Ch.10 Fire and Explosion	T8	
	20	Ch.10 Fire and Explosion	T8	
	22	Ch.11 Protection from Chemical in Special Situations	T9	
	27	Ch.12 Occupational Hearing Loss	T10	
	29	Exam 2		
Nov	3	Ch.13 Radiation	T11	Project outline due
	5	Ch.14 Working in Extreme Temperatures, Review	T12	
	10	Ch.15 Prevention of Accidents	T13	
	12	Ch.16 Cumulative Trauma	T14	
	17	Ch.17 Biohazard	T15	
	19	Ch.18 Metals I	T16	
	24	Ch.19 Metals II	T16	
	26	Ch.20 Polymers	T17	Final project report due
Dec	1	Project presentations		Attendance required
	3	Project presentations		Attendance required
	8	Course review		
	15	<b>Final exam , Time: x:xx xm -x:xx xm</b>		
	22	Final grade submission		