

## SAFM 640 Safety Instrumentation for Managers Industrial Hygiene

Ava Winn

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### Course Coordinator:

Ava C. Winn, Instructor

Office hours by appointment

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### Philosophy of the Course:

The philosophy of the course is to teach students the basic tenets of industrial hygiene and to impress upon them their responsibility as health and safety professionals to anticipate, recognize, evaluate and control those environmental factors or stresses, arising in or from the workplace, which may cause sickness, impaired health and well-being, or significant discomfort and inefficiency among workers or among the citizens of the community.

### Method of Instruction:

The online class will be supplemented with “online laboratories.” The majority of the laboratory experiences are hands-on while a few experiences are by demonstration. (e.g. measuring ionizing radiation). Students will develop, coordinate and/or participate on multidisciplinary teams using case studies or problem-based learning to protect people, property and the environment.

### Texts:

Lecture Text: Fundamentals of Industrial Hygiene, 6<sup>th</sup> Edition (2012). National Safety Council. ISBN: 978-0879123123. Alternatively, you may use the older 5<sup>th</sup> Edition (2001), edited by B. A. Plog, J. Niland and P. J. Quinlan.

### Grading Elements and Weighting:

1 <sup>st</sup> Exam	120 pts
Homework	275 pts
Final Exam	120 pts
Labs	250 pts

### Statement on Social Justice:

West Virginia University is committed to social justice. I concur with that commitment. I expect to foster a nurturing learning environment that is based upon open communication, mutual respect, nondiscrimination. Our University does not discriminate on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color or national origin. Any suggestions as to how to further such a positive and open environment in this class will be appreciated and given serious consideration.

### Statement on Disability Accommodation:

If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class, you must make appropriate arrangements through Disability Services (293-6700). They will identify the nature of the accommodation your disability requires and inform me of appropriate accommodations.

WVU recognizes the diversity of its students, many of whom must be absent from class to participate in religious observances. I will make reasonable accommodation for tests that you miss as a result of religious observance.

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<b>Timeline</b>	<b>Topic</b>	<b>Reading Assignments</b>	<b>Homework/Activities</b>
Week 1	<ol style="list-style-type: none"> <li>1. Introduction to Industrial Hygiene</li> <li>2. Basics of hazard recognition</li> <li>3. SDSs</li> <li>4. Acronyms</li> </ol>	<ol style="list-style-type: none"> <li>1. FIH Chapters 1, 15, 24, 25</li> <li>2. OSHA.gov industrial hygiene resources</li> </ol>	<ol style="list-style-type: none"> <li>1. Hazard evaluation assignment               <ol style="list-style-type: none"> <li>a. Windmill hazards, 50 pts</li> </ol> </li> <li>2. Acronyms, 25 pts</li> </ol>
Week 2	Regulations overview	FIH Chapters 1, 30	Chemicals in your household SDSs – 50 pts
Week 3	Toxicology and industrial hygiene	FIH Chapter 6	Toxicology homework, 50 pts
Week 4	Lungs and Particulates	FIH Chapters 2, 8, 17	Particulates homework, 50 pts
<b>Midterm examination, 120 pts</b>			
Week 5	<ol style="list-style-type: none"> <li>1. Air Sampling</li> <li>2. Evaluation of gases and vapors</li> </ol>	FIH Chapters 7, 8, 15, 16	Personal sampling for total dust exposure lab and analysis homework, 50 pts
Week 6	Solvents and Chemistry	FIH Chapter 7	Chemistry homework, 50 pts
Week 7	<ol style="list-style-type: none"> <li>1. Physical hazards</li> <li>2. Noise and hearing</li> <li>3. Ionizing and non-ionizing radiation</li> </ol>	FIH Chapters 4, 9, 10, 11, 12	<ol style="list-style-type: none"> <li>1. Noise assessment, 50 pts</li> <li>2. Measurement of home equipment with noise app, 50 pts</li> </ol>
Week 8	<ol style="list-style-type: none"> <li>1. Dilution and local exhaust ventilation</li> <li>2. Respiratory protection programs</li> </ol>	<ol style="list-style-type: none"> <li>1. FIH Chapters 18, 19, 20, 21, 22</li> <li>2. 1910.134 OSHA Respiratory Standard</li> </ol>	<ol style="list-style-type: none"> <li>1. Ventilation measurements, 50 pts</li> <li>2. OSHA respiratory etool, 50 pts</li> </ol>
<b>Final Examination, 120 pts</b>			

NOTE: Instructor reserves the right to revise the syllabus in cases of opportunities for plant tours, field exercises, etc.