

Industrial Ventilation OEHS 6753 -- 3 Credit Hours

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Dates See Page 2, Outline and Schedule. Class schedule: Wednesday, 9:30 a.m. We may change some times and dates to accommodate instructor and student needs.

Package TD with *AutoCalc Spreadsheet Programs, PPT Presentations and Handouts*. Textbooks / Workbooks: *Industrial Ventilation (IVW); IAQ and HVAC (IAQW)*; Binder w/ Handouts; Lab materials and equipment. All materials are available through the instructor.

CM points Course can be approved for about 10 ABIH CM points (for those already CIH)

Course Overview The course covers special topics of industrial ventilation engineering, testing, equipment, troubleshooting, and modeling/design as they effect IH needs. It also covers HVAC systems as they apply to occupant exposure control, comfort and IAQ.

At most Sessions we will have a quiz, a review, work problems and exercises, and have a Ppt Preview of the upcoming week's studies. (PPs overviews are also on the TD.)

At home you will study specified topics by (1) viewing PPs overviews (as needed, e.g., if you or the instructor miss class), (2) reading Chapters in the Workbooks, and (3) working through the Workbook examples + exercises. See Page 2 for week-by-week details.

Lab. The course will include hands-on P&S and ventilation testing/measurement labs. (Sessions 11 and 13.)

Tests Six Quizzes Two Midterms and a Final Exam. Quizzes and exams are open book.

Objectives: Students will be equipped to:

- understand practical applications of fluid mechanics to industrial ventilation and HVACsystems
- characterize emission sources, employee behavior, and air movement
- select, operate, manage and maintain appropriate IV and HVACsystems
- help design, select, and operate exhaust hoods, ducts, stacks and fans
- test and measure the performance of ventilation systems; use testing equipment
- review the plans, specifications and designs of others
- model, troubleshoot, and correct deficiencies in existing IV systems
- design simple industrial duct systems
- determine emission rates and appropriate dilution ventilationflowrates
- determine the amount of outside air being delivered to a space for IAQ

Grading	Weekly quizzes	= 20% of grade
	Completed workbooks, lab reports, exercises	= 10% of grade
	Midterms at 20% each	= 40% of grade
	Final Exam	= 30% of grade

Final Grading = Typically, about 60-80% of class in the "A" categories, about 20-40% of the class in the "B" categories.* (There are exceptions.... Instructor will explain as needed.)

*Note: If your cumulative average on midterms and quizzes is less than 80% going into Week 14, extra-credit can usually be earned so that you can qualify for a "B." See instructor for extra-credit work.

Attendance Attendance at class is highly recommended. If you must miss class, see instructor regarding missed materials, view the PPs, and work the class exercises at home. Quizzes cannot be made u You should attend lab sessions and must take Midterms and the Final Exam.

Note 1: in the event the instructor cannot make it to a class, go forward with the scheduled work on your own.

Note 2: Instructor's email address: jeff@eburton.com Call/Text: 801-455-1168

Schedule and outline may be modified as needed to accommodate students/instructor.

Week Session	Date	Quiz? * /Session Covered	Class Activities and Exercises (Page no's refer to HO Binder.)	Preview of and homework** for the week after class: New Topics to Study.
1	Jan 12	Pretest	Intro to spreadsheets and various ventilation modes. Preview of IVW 1-3..	IVW 1-3 --> Problem characterization; physics of air.
2	Jan 19	No	Session 1 Appl. Exer. Page 1	IAQW 1-5: IAQ/HVAC/Psychrometrics.
3	Jan 23 **** Jan 26	#1 Yes / 1	Session 2 Appl. Exercise	IVW 4; IAQW 8 - Dilution Ventilation
4	Feb 2	#2 Yes / 2	Session 3 Appl. Exercises	IVW 5-6 (pp 6-1 to 6-11) LEV Systems; hoods
5	Feb 9	#3 Yes / 3	Session 4 Exercises Midterm Review and Practice Exercises	Prepare for Mid-term. (Covers Sessions1-5)
6	Feb 16	No	Midterm # 1 -- Covers materials in Sessions 1-5 Open Book - 75-90 min	IVW 6 (pp 6-11 to 6-23) IVW 7 Advanced hood design; ductwork
7	Feb 23	No	Session 6. Appl. Exer.	IVW 8 Fans
8	Mar 2	#4 Yes / 6	Session 7. Appl. Exer.	IVW 9 LEV system modeling/design
10 ¹	Mar 16	#5 Yes / 7	Session 8 Appl. Exer. Introduction to Report Writing.	IVW 17 + IAQW 6, 11 SGP and Reading Plans and Specifications (Lab on March 19)
9 ¹	Mar 9	No	Spring Break	Study for Midterm #2?
11	Mar 23	No #6 Yes / 8	P&S Exercises and Lab Management Reports	Work on lab worksheets, due April 1. Prepare for Mid-Term (Covers Sessions 6-11)
12	Mar 30	No	Midterm # 2: about 60 minutes; Covers IVW Chap. 6-9,17 plus IAQW Chap 6, 11	IVW 15 + IAQW 18 Vent Systems Testing, Airflow for IAQ
13	Apr 6	No	Session 11: Testing Lab.+ Exercises. Complete and turn in Lab worksheets and "Management Report" on April 15.	IAQW 12-17: ASHRAE 62 & More
14	Apr 13	No	Session 13 Appl. Probs (Note: Testing Lab Worksheets and Mngt Report due next week.)	IVW 10, 12-14, 16, 18 Non-STP, Stacks, Rules of Thumb, Troubleshooting, etc.
15	Apr 20	No	Session 14 Appl. Probs "Prepare for Final Exam" Exercises (Note: Testing Lab Worksheets and "Mngt Report" due today.)	Workbook check for completeness.***
16	Apr 27	No	Final Exam? Date and time to be determined.	Re: Final Exam – Covers: All materials covered in course.

1. Weeks 9 and 10 are reversed on the schedule as printed.

Some Sessions have a short quiz (15-20 minutes) as a review of a previous week's study and exercises: See Column 3.

** "Homework" means to read the chapters listed and read/work US-units Examples/Exercises in the appropriate workbooks. Also review the TD PPs presentations and the Spreadsheet applications, as needed.

We will complete Workbook Exercises and other applied problems during the following class Session.

*** Your Workbooks and Lab Worksheets should be available for checking/review at Session 15.