

BSCI 7106 – Mechanical & Plumbing Systems in Buildings

3 credit-hours

Instructor: Scott W. Kramer, Ph.D.
Office: 332 Gorrie Center
E-mail: kramesw@auburn.edu

Phone: 334-844-5376
Office Hours: As posted and by appointment

Textbooks: *Mechanical and Electrical Systems for Construction Managers, 3rd Edition*
ATP, American Technical Publishers, Orland Park, IL, 2013

Course Objectives:

- ³⁵/₁₇ To identify and understand the function of the components and operation of common mechanical and plumbing systems found in buildings.
- ³⁵/₁₇ To understand the basic construction sequencing and coordination issues related to the installation of mechanical and plumbing systems in buildings.
- ³⁵/₁₇ To reinforce the skills of reading and interpreting mechanical and plumbing drawings and specifications.

Attendance: Class attendance is *required*. More than 1 unexcused absence during the semester will result in a letter grade reduction for the final course grade. More than 2 unexcused absences during the semester will result in a two letter grade reduction for the final course grade. Make up exams/quizzes will be given for excused absences only. Absences will be excused in accordance with University Policy as stated in the *Auburn Tiger Cub*. Written documentation for excused absences will be presented to the instructor the first class period following the absence; otherwise, the absence is not excused. The student is responsible for any missed class material. Class participation is encouraged and expected from students during class lectures.

Assignments: All student work shall be completed in accordance with the Student Academic Honesty Code as stated in the *Auburn Tiger Cub*. **NO LATE ASSIGNMENTS WILL BE ACCEPTED.**

Classroom Behavior: Professional behavior is expected during class. Behavior that disrupts the class is unacceptable and will not be tolerated. All cell phones and pagers must be turned off (not silent mode) during class. According to Auburn University guidelines, behavior in the classroom, (and online) that impedes teaching and learning and creates obstacles to the goal of fostering an environment conducive to higher learning is considered disruptive. Disruptive behavior can assume many forms. The following are examples:

- 1.1. Arriving after a class has begun;
- 1.2. Use of tobacco products;
- 1.3. Monopolizing discussion;
- 1.4. Persistent speaking out of turn;
- 1.5. Distractive talking, including cell phone usage;
- 1.6. Audio or video recording of classroom activities or the use of electronic devices without the permission of the instructor;
- 1.7. Refusal to comply with reasonable instructor directions;
- 1.8. Employing insulting language or gestures; and
- 1.9. Verbal, psychological, or physical threats, harassment, and physical violence.

Attitude, demeanor, and participation: Your participation in and contribution to group and classroom activities involves you in the process of learning. Active and enthusiastic participation in project presentations and class discussion is important and affects your grade.

Special Needs: Students who need accommodations are asked to arrange a meeting during office hours the first week of classes, or as soon as possible, if accommodations are needed immediately. If you have a conflict with your instructors' office hours, an alternate time can be arranged. To set up this meeting, please contact your instructor by e-mail. Bring a copy of your Accommodation Memo and an Instructor Verification Form to the meeting. If you do not have an Accommodation Memo but need accommodations, make an appointment with The Program for Students with Disabilities, 1244 Haley Center, 844-2096 (V/TT).

Email / N: drive: Email is recognized as the official means of communication by the University. You are responsible for any class requirements and schedules that are altered in a timely manner using email. Your student email account must be activated. Check it daily. You are also responsible for requirements and schedules that are posted in the BSCI 7106 class folder on the N: drive and/or AU Canvas.

Course Topics & Class Schedule:

The Scope and Impact of Mechanical & Plumbing Systems
 HVAC Fundamentals
 Cooling & Heating Production Equipment & Systems
 Air-Handling Units, Ductwork, and Air Devices
 HVAC Air Delivery Systems
 Fire Protection Equipment and Systems
 Plumbing Equipment and Systems

Date	Day	Time (CDT)	Site	General Topic
August 12	Tuesday	8:00am-5:00pm	Gorrie	Introductions & class overview, Gorrie MEP Systems, AU District Energy Plant Field Trip
August 13	Wednesday	8:00am-5:00pm	Gorrie	Research Paper, Electronic Searches & References
August 27	Wednesday	6:00-7:00 p.m.	online	Module 1 – HVAC Fundamentals
September 3	Wednesday	6:00-7:00 p.m.	online	Module 2 – Cooling & Heating Production Equipment
September 10	Wednesday	6:00-7:00 p.m.	online	Module 3 – AHU, Ductwork & Air Devices (Quiz 1 emailed @ 7:00 pm)
September 17	Wednesday	6:00-7:00 p.m.	online	Module 4 – HVAC Air Delivery Systems
September 24	Wednesday	6:00-7:00 p.m.	online	Module 5 – Fire Protection Equipment and Systems (Quiz 2 emailed @ 7:00 pm)
October 1	Wednesday	6:00-7:00 p.m.	online	Module 6 – Plumbing Overview
October 8	Wednesday	6:00-7:00 p.m.	online	Module 7 – Plumbing Materials & Valves
October 15	Wednesday	6:00-7:00 p.m.	online	Module 8 – Sanitary Drainage, Vents and Stormwater Drainage Piping (Quiz 3)
October 22	Wednesday	6:00-7:00 p.m.	online	Module 9 – Plumbing Fixtures & Appliances
October 29	Wednesday	6:00-7:00 p.m.	online	Class wrap-up; Research paper questions, etc. (Quiz 4 emailed @ 7:00 pm)
November 5	Wednesday	6:00-7:00 p.m.	online	Research Presentations (4 each)
November 12	Wednesday	6:00-7:00 p.m.	-----	No class, in Haiti 11/8 – 11/14
November 19	Wednesday	6:00-7:00 p.m.	online	Research Presentations (4 each)
November 26	Wednesday	6:00-7:00 p.m.	-----	No class, Thanksgiving Break
December 3	Wednesday	6:00-7:00 p.m.	online	Research Presentations (4 each)

Evaluation: Final course grades will be calculated using a 10-point scale.

>90.00 = **A** 80.00 – 89.99 = **B** 70.00 – 79.99 = **C** 60.00 – 69.99 = **D** < 60 = **F**

Grades will be calculated using the following breakdown:

Quiz #1	15%
Quiz #2	15%
Quiz #3	15%
Quiz #4	15%
Individual Research Paper & Presentation	30%
Contribution, Participation & Professionalism	10%
	100%

Quiz Dates & Content

Quiz Dates & Content

Quiz #1 (9/10; proctored in-residence)

Canvas Video Modules included in Quiz #1:

- ³⁵/₁₇ Module 1 – HVAC Fundamentals
- ³⁵/₁₇ Module 2 – Cooling & Heating Production Equipment

ATP Book readings included in Quiz #1:

- ³⁵/₁₇ Chapter 12 – p. 287 – 305
- ³⁵/₁₇ Chapter 13 – p. 311 – 316; p. 321 – 327

Quiz #2 (9/24; proctored in-residence)

Canvas Video Modules included in Quiz #2:

- ³⁵/₁₇ Module 3 – AHU, Ductwork & Air Devices
- ³⁵/₁₇ Module 4 – HVAC Air Delivery Systems

ATP Book readings included in Quiz #2:

- ³⁵/₁₇ Chapter 8 – p. 187 – 197
- ³⁵/₁₇ Chapter 10 – p. 219; p. 226 – 235; p. 241 – 243

Quiz #3 (10/15; proctored in-residence)

Canvas Video Modules included in Quiz #3:

- ³⁵/₁₇ Module 5 – Fire Protection Equipment and Systems
- ³⁵/₁₇ Module 6 – Plumbing Overview
- Module 7 – Plumbing Materials

ATP Book readings included in Quiz #3:

- Fire Protection Handout from Tao & Janis
- ³⁵/₁₇ Chapter 2 – p. 13 - 46

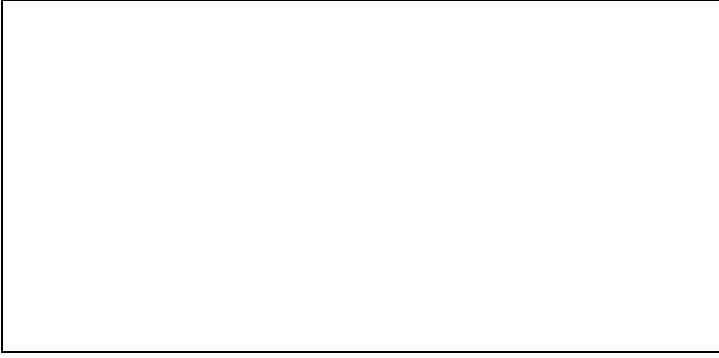
Quiz #4 (10/29; proctored in-residence)

Canvas Video Modules included in Quiz #4:

- ³⁵/₁₇ Module 8 – Sanitary Drainage, Vents, and Stormwater
- ³⁵/₁₇ Module 9 – Plumbing Fixtures & Appliances

ATP Book readings included in Quiz #4:

- ³⁵/₁₇ Chapter 3 – p. 49 – 82
- ³⁵/₁₇ Chapter 6 – p. 123 – 170



BSCI 7106 – Mechanical & Plumbing

From: Scott W. Kramer, Ph.D.

CC: BSCI Dept. File

Date: August 12, 2014

Re: BSCI 7106 Research Paper Guidelines & Due Dates

Project Statement: Building equipment topic to be selected by student and approved by instructor. Topic must be selected from *approved* list. Written abstract (1 paragraph) of subject must be submitted for instructor's approval. - *DUE:* _____, *beginning of class*. One 8-page paper + 15 minute PowerPoint Presentation will be required for this class and is worth 30% of the student's final course grade.

References: Include references in APA format from the following sources:

1. At least 5 (5) published books or journal publications.
2. At least three (3) web references.
3. At least three (3) trade or contemporary periodicals (e.g. Engineering News Record) or newspaper articles.

Submittal:

1. MSWord file (8-page paper) saved in the student's personal BSCI 7106 class folder on the N: drive file server. Also, email the final paper to the Instructor. **Files must be in folder/emailed by Noon (CST), November 5, 2014.** Late assignments will not be accepted.

Grade/Evaluation:

1. 80% of the overall project grade = 8-page paper & 20% of overall project grade = 15 min. Presentation. Paper will utilize the ASC (Associated Schools of Construction) formatting guidelines found at: www.ascweb.org Grammar and spelling are important. Font = 10 pt. Times New Roman, 1" margins, *single-spaced*, References & Appendices **do not** count toward the 8-page limit.

Final Research Paper Due Date/Time: Noon (CST), November 5, 2014.