COURSE SYLLABUS

Course Prefix/Number:
BCN 3561

Course Title:
Construction Mechanics I – MEP Systems & Equipment

Course Credit Hours:
3 Semester Hours

Instructor Name and Contact Information:
Andy Heitman
Dept Ph# 850-474-2484
Office Ph# 850-390-4117 (ext 1)
Email andyheitman@buildingenergysciences.com
(email is preferred for communication)

Prerequisites or Co-Requisites:
None

Course Description:
Introduce building mechanical and electrical system basics and related equipment. Areas of study included in this course are heating, ventilating, air conditioning (HVAC) systems, plumbing systems, electrical equipment and systems, and HVAC and electrical design basics.

Student Learning Outcomes:
The purpose of this course is to develop a basic understanding of the mechanical / electrical systems and equipment which are present in modern building construction. Emphasis will be given to the knowledge of these systems necessary for the student to effectively communicate with both designers and constructors. The coursework will also prepare students for the subsequent Construction Mechanics II course, MEP Systems and Applications (BCN 4564).

Basic Topics Covered:
1) Introduction to Building Systems
2) HVAC Fundamentals
3) HVAC Delivery Systems
4) Cooling Equipment & Systems
5) Heating Equipment & Systems
6) Air Handling Equipment & Systems
7) HVAC Piping Equipment & Systems
8) Plumbing Equipment & Systems
9) Introduction to Electricity
10) Power Systems & Equipment
11) Electrical Design & Wiring
General Requirements:

Attendance:
The course meets for lecture once a week for approximately 2hrs and 45min on WEDNESDAY night from 6:00 pm to 8:45 pm; regular attendance is encouraged in order to perform well in the course. A sign-in sheet may be passed around at some point during the class on which the student shall personally sign indicating their presence in class. Students must be present for the majority of a class period in order to get credit for attending a period. Students shall be allowed un-excused “no-questions-asked” absences for two lecture periods – every lecture missed beyond this will result in a reduction of 10 points (1% of class grade) from the possible 100 points (10% of class grade) available for attendance. Anyone who is signed in by or signs in another student shall lose the entire semester’s attendance points (10%).

Participation:
Students are strongly encouraged to participate in the lectures by way of early preparation and questions / comments in class. A portion of the student’s final grade may be dependent upon the quality of his / her participation in the lectures based solely on the instructor’s opinion of their participation.

Course Materials:
Materials for this course including reference information, class presentations, assignments, announcements, grade reports, etc. will be distributed by means of the University elearning website for this class. It is the student’s responsibility to check the class elearning page on a regular basis for new materials and or announcements concerning the class. Notification of new material may or may not be given to the class roster by means of email from the instructor.

Homework:
Homework is assigned covering all lecture topics and in some cases shall be completed prior to the topic being covered in class. This is a means to encourage proper preparation for class lecture. Assigned homework will be collected at random for grading. The majority of assigned homework will consist of the questions / problems at the end of each chapter in the text; as such, homework assignments are also preparation for possible quizzes over the suggested text reading. Occasionally a special hand-out homework problem may be assigned for various topics. Homework must be turned in when asked for at the beginning of the lecture period homework turned in at the end of a lecture or at a later date shall not be accepted except under special circumstances at the discretion of the instructor with prior arrangements made.

Quizzes:
Quizzes will be given at the beginning of a lecture period, possibly without prior notice. The material on the quizzes shall consist primarily of material covered in previous lectures but could also contain questions from the current lecture’s suggested reading assignment from the text. Completing the corresponding homework will help prepare the student for a lecture; each quiz is very likely to contain at least some of the assigned homework questions. Each quiz may also contain questions from the previous week’s lecture. When computing the final grades for the class, each student’s lowest quiz grade will be deleted. Quizzes cannot be made up and a missed quiz will count as a zero and also count as the ‘lowest quiz grade’ for deletion. Quizzes shall be closed-book, open-notes (and homework) unless instructed otherwise.
Exams:
A midterm exam shall be given approximately midway through the course which shall cover all lecture topics to that point. A Final exam will be given at the end of the course which may be comprehensive in nature and could cover all course materials. Exams will evaluate the student’s understanding of the course and will include information from the text, lecture, handouts, or other material presented in class lectures. **All exams will be closed-book, closed-note; students will be allowed to prepare a review sheet for their personal use during the exams.** Review sheets shall be limited to both sides of a single 8.5x11 piece of paper. **Review sheets are prepared by each student and submitted with the completed exam** – sharing of a review sheet will be considered cheating. Rescheduling of exams will only be done under special circumstances and only by notifying the instructor prior to the scheduled exam. In the event that absence is due to an emergency or illness that cannot be known in advance then rescheduling must be arranged prior to the next class period (or within five days of the final exam).

Trade Article Reviews:
Each student shall complete a minimum of two Trade Article Reviews from a mainstream construction trade journal (approved by Instructor). The chosen article must be relevant to a topic which will be covered by this class – *if you are unsure of a topic then ask first.* Reviews shall be typed, double-spaced, 10 to 12-point Times New Roman font and shall be a minimum of three (3) pages in length. **A copy of the article on which the review was based must be turned in attached to the student’s paper; a letter grade (10%) shall be deducted from the paper grade if article is not turned in with the Article Review.** Some possible publications are ASHRAE Journal, Engineered Systems, PM Engineer, etc; many trade publications including years of back-issues are available in the UWF Library Online Journal Database. The first Trade Article Review shall be due on or before **Jan-23**; the second shall be due on or before **Mar-27.** Under no circumstance shall a Trade Article Review be accepted after a due date.

Completion of Course Assignments:
All work completed for this course must be neat and professional. **ALL assignments must be typed (unless specifically directed otherwise), stapled, and shall include the student’s name, the semester and year, name of the class, the assignment due date, assignment description (chapter #, problem #), and numbered pages (i.e. ‘1 of 2’, ‘2 of 2’).** Any course assignment that is turned in without complying with the above requirements shall receive an automatic 10% deduction in points earned.

**ALL assignments in the class are intended to be completed individually by each student. This does not preclude a student from obtaining help on a portion of the assignment from a classmate but each student must submit a ‘unique’ assignment (e.g. NO ‘save as’ or ‘copy-clipping’). Students who submit assignments which do not comply with this requirement shall receive a zero and will be submitted to the Department for possible University disciplinary action for cheating.**

**Important Dates:**
- **February 1** Withdraw Deadline with partial refund and automatic grade of “WR”
- **March 22** Withdraw Deadline with automatic grade of “W”
- **April 26** Withdraw Deadline with grade of “W” or “WF” at instructor’s discretion
<table>
<thead>
<tr>
<th>Class Date</th>
<th>Class No.</th>
<th>Suggested Text Reading</th>
<th>Ch</th>
<th>Lecture Topic(s)</th>
<th>HW Assignment</th>
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<tbody>
<tr>
<td>1/9</td>
<td>1</td>
<td>pp. 1 - 20</td>
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<td>Introduction to Building Systems</td>
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<tr>
<td></td>
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<td>pp. 21 – 45</td>
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<td>HVAC Fundamentals</td>
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<td>pp. 46 - 75</td>
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<td>Complete Ch-2</td>
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<td>pp. 77 - 105</td>
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<td>HVAC Delivery Systems</td>
<td>Ch-3: 2,3,5,7,14,17</td>
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<td>1/23</td>
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<td>Trade Article #1 Due</td>
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<td>4</td>
<td>pp. 107 - 139</td>
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<td>Cooling Equipment &amp; Systems</td>
<td>Ch-4: 2,5,6,15,18,20,23,27,29</td>
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<td>pp. 141 - 163</td>
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<td>Heating Equipment &amp; Systems</td>
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<td>Air Handling Equipment &amp; Systems</td>
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<td>Ch-7: 1,4,9,11,14,18,20,21,31</td>
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<td>pp. 227 – 280</td>
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<td>Exam Answer Review</td>
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<td>Complete Ch-8</td>
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<td>pp. 337 - 372</td>
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<td>QUIZ 5 (Ch-10,11)</td>
<td>Turn in Site Survey Questionnaire</td>
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Texts:
Required texts:


Recommended texts:


Grading / Evaluation:
Midterm Examination 25% 250 points
Final Examination 25% 250 points
In Class Quizzes 20% 200 points
Homework 15% 150 points
Trade Article Reviews 5% 50 points
Attendance / Participation 10% 100 points

TOTAL CLASS POINTS 100% 1,000 points

Grading Scale: (UWF Standard)
93-100 = A 73-76 = C
90-92 = A- 70-72 = C-
87-89 = B+ 67-69 = D+
83-86 = B 63-66 = D
80-82 = B- 60-62 = D-
77-79 = C+ Below 60 = F

References/Bibliography:
None

Special Technology Utilized by Students: [Beyond baseline requirements of email and word processing.]
None

Expectations for Academic Conduct/Plagiarism Policy: (see University website)
Academic Conduct Policy: (Web Format) | (PDF Format) | (RTF Format)
Plagiarism Policy: (Word Format) | (PDF Format) | (RTF Format)
Student Handbook: (PDF Format)

ASSISTANCE:
Students with special needs who require specific examination-related or other course-related accommodations should contact Barbara Fitzpatrick, Director of Disabled Student Services (DSS), dss@uwf.edu, (850) 474-2387. DSS will provide the student with a letter for the instructor that will specify any recommended accommodations.