



**ARCE 1452 201 HY  
Structural Drafting  
Fall 2021  
Thursday 6:00-8:50pm Lab  
A minimum of 3 hours online per week**

**Instructor Information:**

**Name:** Andrew Gregory  
**Email:** [Agregory2@com.edu](mailto:Agregory2@com.edu)  
**Office:** STEM-134  
**Phone:** 409 933-8161

**Student hours and location:**

My office hours are Monday, Tuesday, Wednesday, Thursday 3:00 to 5:00 pm. I am typically in the lab, STEM-134.

**Required Textbook:**

Structural, Civil, and Pipe Drafting, 2nd Edition David L. Goetsch Publisher: Delmar Publishing Inc. 2014 ISBN: 978-1-133-94939-8

**Course Description:**

A study of structural systems including concrete foundations and frames, wood framing and trusses and structural steel framing systems. Includes detailing of concrete, wood and steel to meet industry standards including the American Institute of Steel Construction and The American Concrete Institute. Upon successful completion of this course, a student is awarded four semester credit hours.

**Course requirements:**

Each week there is the same process for learning the material:

1. First you read the text, watch the screencasts of me demonstrating the content of the chapter, and complete five exercises.
2. In the lab we will collectively review any question the class members have on the exercises.
3. In lab we will collectively complete the drawing problems.
4. You will also take a short quiz in Blackboard to keep you reading the text and completing the exercises.

**Determination of Course Grade/Detailed Grading Formula**

Students will be graded on "points-earned" criteria. A grade of C or above is considered acceptable.

<b>Assessments</b>	<b>Points Each</b>	<b>Total Point Value</b>
Lab Attendance	5	75
Discussion Forum	10	150
Drawing Problems (per chapter)	65	975
Chapter Quizzes	20	300
Course Evaluation	50	50
<b>TOTAL</b>		<b>1,550</b>

\*Individual Assignments due dates and criteria are listed on the schedule

**Grading Scale:**

1395-1550 points = A  
 1240-1394 points = B  
 1085-1239 points = C  
 930-1084 point = D  
 Below 930 = F

**Make-Up Policy:**

Late work will incur a 20% penalty. If there is a documented medical or family emergency, please see me to discuss a work plan to get you caught up.

**Attendance Policy:**

Attendance is required at the lab sessions. In addition, you are required to log in to 'Blackboard' a minimum of once per week.

**Communicating with your instructor:** ALL electronic communication with the instructor must be through your COM email. Due to FERPA restrictions, faculty cannot share any information about performance in the class through other electronic means. . I do receive my college email on my phone. Typically, emails are answered within a day or less. Course assignments will be graded within a week. I would like to have all the previous week assignments graded by Lab Time.

**Student Learner Outcomes:**

Upon successful completion of this course, students will:

1. Identify components of structural systems;
2. Use reference materials
3. Produce drawings for concrete framing systems;
4. Produce drawings for wood framing systems,
5. Produce drawings for steel framing systems;
6. Draw design details and connections for framing components
7. Draw column and beam details for manufacture and assembly utilizing various fastening methods.

## Core Objectives

This course addresses the following core objectives

1. **Critical Thinking Skills:** Students will demonstrate creative thinking, innovation, and the ability to analyze, evaluate, and synthesize information.
2. **Communication Skills:** Develop, interpret, and express ideas through written, oral, and visual communication.
3. **Empirical and Quantitative Skills:** Students will demonstrate applications of scientific and mathematical concepts.

## Table Mapping SLO's, Core Objectives and Assignments

Student Learner Outcome	Maps to Core Objective	Assessed via this Assignment
1. Identify components of structural systems;		Quiz Unit 3, 4 & 5
2. Use reference materials		Drawing Problem Unit 6
3. Produce drawings for concrete framing systems	Communication-Visual	Drawing Problems Unit 17, Unit 18, and Unit 19 & 20
4. Produce drawings for wood framing systems		Drawing Problems Unit 21, Unit 22 & 23
5. Produce drawings for steel framing systems		Drawing Problems Unit 6, Unit 7, and Unit 8
6. Draw design details and connections for framing components	Critical Thinking	Drawing Problem Unit 3, 4 & 5
7. Draw column and beam details for manufacture and assembly utilizing various fastening methods	Quantitative	Drawing Problem Unit 9 & 10

## Academic Dishonesty:

Any incident of academic dishonesty will be dealt with in accordance with college policy and the Student Handbook. Academic dishonesty – such as cheating on exams is an extremely serious offense and will result in a grade of zero on that exam and the student will be referred to the Office of Student Conduct for the appropriate disciplinary action.

## Student Concerns:

If you have any questions or concerns about any aspect of this course, please contact me using the contact information previously provided. If, after discussing your concern with me, you continue to have questions, please contact Professor Sheena Abernathy, Chair Business Computer Technology Department at [sabernathy@com.edu](mailto:sabernathy@com.edu) or 933-8330.

## Course outline:

August 26

Week 1  
 Reading: Unit 1 Introduction to Structural Drafting  
 Unit 2 Typical Structural Drafting Department  
 Topic: Overview of Structural Drafting  
 Assignment: Preparing a Drawing from an Engineers Sketch

September 2  
 Reading: Unit 3 Drawing, Checking, Correcting, and Revising Processes  
 Unit 4 Product Fabrication and Shipping  
 Unit 5 Structural Connections  
 Topic: Structural Drafting Introduction  
 Assignment: Preparing a concrete column section with connections

September 9  
 Week 3  
 Reading: Unit 6 Structural Framing Plans  
 Topic: Structural Framing Plans  
 Assignment: Framing Plans

September 16  
 Week 4  
 Reading: Unit 7 Structural Steel Sections  
 Topic: Steel Sections  
 Assignment: Draw Steel Sections

September 23  
 Week 5  
 Reading: Unit 8 Structural Steel Connection Details  
 Topic: Structural Steel Connection Details  
 Assignment: Use blocks to layout details and then develop them

September 30  
 Week 6  
 Reading: Unit 9 Structural Fabrication Details  
 Unit 10 Structural Bill of Materials  
 Topic: Fabrication Drawings  
 Assignment: Fabrication Drawings

October 7  
 Week 7  
 Reading: Unit 11 Pre-Engineered Metal Buildings  
 Topic: Metal Building are different – skin driven  
 Assignment: Draw a metal building plan and section.

October 14  
 Week 8  
 Reading: Unit 12 Precast Concrete Framing Plans and Unit 13 Precast  
 Concrete Sections  
 Topic: Precast Concrete  
 Assignment: Prepare a Precast Framing Plan and Sections

October 21

Week 9

Reading: Unit 14 Precast Concrete Connection Details  
Unit 15 Precast Concrete Fabrication Details  
Unit 16 Precast Concrete Bill of Materials

Topic: Precast Shop Drawings

Assignment: Draw a set of shop drawings

October 28

Week 10

Reading: Unit 17 Poured-in-Place Concrete Foundations

Topic: Foundations

Assignment: Prepare a foundation plan

November 4

Week 11

Reading: Unit 18 Poured-in-Place Concrete Walls and Columns

Topic: Concrete walls and Columns

Assignment: Prepare column and wall sections

November 11

Week 12

Reading: Unit 19 Poured-in-Place Concrete Floor Systems

Unit 20 Poured-in-Place Stairs and Ramps Topic – Floor and Stairs

Assignment: Prepare Stair Drawings

November 18

Week 13

Reading: Unit 21 Structural Wood Floor System

Topic: Wood Framing

Assignment: Prepare a framing plan

November 25 No Class Thanksgiving

December 2

Week 14

Reading: Unit 22 Structural Wood Walls

Topic: Wood walls: interior, exterior, and shear

Assignment: Prepare wall sections and details

December 9

Week 15

Reading: Unit 23 Structural Wood Roofs

Unit 24 Structural Wood Posts, Beams, Girders, and Arches

Topic: Ancillary wood supports

Assignment: Prepare a roof framing plan

Wood Framing continued - Semester wrap up.

Reading, Discussion Forums and Quizzes should be completed online.

We will work on the chapter problems during the in-person lab session.

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## **Instructional Polices and Guidelines**

### **Grade Appeal Process:**

Concerns about the accuracy of grades should first be discussed with the instructor. A request for a change of grade is a formal request and must be made within six months of the grade assignment. Directions for filing an appeal can be found in the student handbook. [https://build.com.edu/uploads/sitecontent/files/student-services/Student\\_Handbook\\_2019-2020v5.pdf](https://build.com.edu/uploads/sitecontent/files/student-services/Student_Handbook_2019-2020v5.pdf)

*An appeal will not be considered because of general dissatisfaction with a grade, penalty, or outcome of a course. Disagreement with the instructor's professional judgment of the quality of the student's work and performance is also not an admissible basis for a grade appeal.* [https://build.com.edu/uploads/sitecontent/files/student-services/Student\\_Handbook\\_2019-2020v5.pdf](https://build.com.edu/uploads/sitecontent/files/student-services/Student_Handbook_2019-2020v5.pdf)

### **Academic Success & Support Services:**

College of the Mainland is committed to providing students the necessary support and tools for success in their college career. Support is offered through our Tutoring Services, Library, Counseling, and through Student Services. Please discuss any concerns with your faculty or an advisor.

### **ADA Statement:**

Any student with a documented disability needing academic accommodations is requested to contact Holly Bankston at 409-933-8520 or [hbankston@com.edu](mailto:hbankston@com.edu). The Office of Services for Students with Disabilities is located in the Student Success Center.

### **Counseling Statement:**

Any student that is needing counseling services is requested to please contact Holly Bankston in the student success center at 409-933-8520 or [hbankston@com.edu](mailto:hbankston@com.edu). Counseling services are available on campus in the student center for free and students can also email [counseling@com.edu](mailto:counseling@com.edu) to setup their appointment. Appointments are strongly encouraged; however, some concerns may be addressed on a walk-in basis.

### **Textbook Purchasing Statement:**

A student attending College of the Mainland is not under any obligation to purchase a textbook from the college-affiliated bookstore. The same textbook may also be available from an independent retailer, including an online retailer.

### **Withdrawal Policy:**

Students may withdraw from this course for any reason prior to the last eligible day for a "W" grade. Before withdrawing students should speak with the instructor and consult an advisor. Students are only permitted to withdraw six times during their college career by

State law. The last day to withdraw for the 1st 8 week session is October 6th, November 19th for 16 week courses and December 2nd for the 2nd 8 week session

\*\*It is the responsibility of the student to withdraw from the course officially by contacting Admissions and completing the necessary processes.

### **FN Grading:**

The FN grade is issued in cases of failure due to a lack of attendance, as determined by the instructor. The FN grade may be issued for cases in which the student ceases or fails to attend class, submit assignments, or participate in required capacities, and for which the student has failed to withdraw. The issuing of the FN grade is at the discretion of the instructor.

### **Early Alert Program:**

The Counseling Center at College of the Mainland has implemented an Early Alert Program. I have been asked to refer students to the program throughout the semester if they have difficulty completing assignments or have poor attendance. If you are referred to the Early Alert Program you will be contacted by someone in the Counseling Department. As student success and retention is very important to us, someone from the Counseling Department will schedule a meeting with you to see what assistance they can offer in order for you to meet your academic goals

### **COVID-19 Statement:**

All students, faculty, and staff are expected to familiarize themselves with materials and information contained on the College of the Mainland's Coronavirus Information site at [www.com.edu/coronavirus](http://www.com.edu/coronavirus). In compliance with Governor Abbott's May 18 Executive Order, face coverings/masks will no longer be required on COM campus. Protocols and college signage are being updated. We will no longer enforce any COM protocol that requires face coverings. We continue to encourage all members of the COM community to distance when possible, use hygiene measures, and get vaccinated to protect against COVID-19. Please visit [com.edu/coronavirus](http://com.edu/coronavirus) for future updates.

### **Success Tips for Students, Course Delivery & Expectations:**

#### **Course Delivery & Expectations**

The course content is delivered via the online portion of the course through read, watching demonstrations on a screencast and you completing practice exercises and chapter problems. A short five question quiz is also given on each chapter. This is to ensure that you read the text.

You will need to log in each week and the reading, watching the demos and completing the exercise and problems will probably take between 4 and 8 hours outside of the lab time.

The lab is intended to address your questions on the current chapter not present it in its entirety. Therefore, you should have completed the reading, watched the screencasts and completed all the exercises before the weekly Lab.

All exercises and drawing problems should be attached to the course assignment in the online course. The files should be in their native format, meaning, if it is a word

document submit the word document or if it is an AutoCAD drawing submit the AutoCAD file.

**Course Prerequisite:**

DFTG 1433 or DFTG 1409 and DFTG 1305

**Technology Prerequisite:**

You must complete the free [Online Learners workshop](#).

**Course Format:**

The structure of this hybrid course is called either a 'Flipped' or 'Inverted' classroom. What that means to you, as the student, is that the traditional lecture component of a Lecture/Lab course is delivered online. You can be at home on the couch or can watch and draw on your schedule. The online part is demonstration screencasts of how to use the AutoCAD software. The Lab part is where we meet together one evening a week for some quality face time. Both the online and Lab parts of the class are essential. At the Lab session, we will open with a discussion of issues or problems the group encountered, provide more face-to-face demonstrations, and review your work one on one at your computer.

**Technology Outage Policy:**

It is your responsibility to complete the coursework in a timely manner. THE ONLY EXTENSION OF DUE DATES related to technology outage is an outage of College of the Mainland's systems such as Blackboard or the internet connect to the College. If your computer or internet provider is experiencing a technological outage, other options include completing the work at the College or at another location, which has WIFI.

**Required Materials:**

Flash Drive – 4 MB