



**ARCE 1452 201 HY  
Structural Drafting  
Fall 2023  
Tuesday 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:** ICB 313-14  
**Phone:** 409 933-8339

**Student hours and location:**

My office hours are Wednesday, Thursday 2:00 to 5:00 pm Industrial Careers Building 313-14 Friday 1:00 – 2:30 pm on TEAMS.

**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 D2L 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.

Assessments	Points Each	Total Point Value
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 'D2L' 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's 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 Science and Engineering Department at [sabernathy@com.edu](mailto:sabernathy@com.edu) or 933-8330.

**Course outline:**

August 29

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 5

Week 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 12

Week 3

Reading: Unit 6 Structural Framing Plans  
Topic: Structural Framing Plans  
Assignment: Framing Plans

September 19

Week 4

Reading: Unit 7 Structural Steel Sections  
Topic: Steel Sections  
Assignment: Draw Steel Sections

September 26

Week 5

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

October 3

Week 6

Reading: Unit 9 Structural Fabrication Details  
Unit 10 Structural Bill of Materials  
Topic: Fabrication Drawings  
Assignment: Fabrication Drawings

October 10

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 17

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 24

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: Precast Shop Drawings and Bill of Materials

October 31

Week 10

Reading: Unit 17 Poured-in-Place Concrete Foundations  
Topic: Foundations  
Assignment: Prepare a foundation plan

November 7

Week 11

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

Topic: Concrete walls and Columns

Assignment: Prepare column and wall sections

November 14

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 21

Week 13

Reading: Unit 21 Structural Wood Floor System

Topic: Wood Framing

Assignment: Prepare a framing plan

November 28

Week 14

Reading: Unit 22 Structural Wood Walls

Topic: Wood Walls: Interior, Exterior, and shear

Assignment: Prepare wall sections and details

December 5

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

December 12

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.

## **Institutional Policies 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 [Student Handbook 2023-2024 v2.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.*

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

College of the Mainland is committed to providing students the necessary support and tools for success in their college careers. 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 Kimberly Lachney at 409-933-8919 or [klachney@com.edu](mailto:klachney@com.edu). The Office of Services for Students with Disabilities is located in the Student Success Center.

### **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 permitted to withdraw only six times during their college career by state law. The last date to withdraw from the 1st 8-week session is October 11. The last date to withdraw from the 16-week session is November 28. The last date to withdraw for the 2nd 8-week session is December 7.

### **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. The last date of attendance should be documented for submission of an FN grade.

**Early Alert Program:**

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

**Resources to Help with Stress:**

If you are experiencing stress or anxiety about your daily living needs including food, housing or just feel you could benefit from free resources to help you through a difficult time, please click here <https://www.com.edu/community-resource-center/> College of the Mainland has partnered with free community resources to help you stay on track with your schoolwork, by addressing life issues that get in the way of doing your best in school. All services are private and confidential. You may also contact the Dean of Students office at [deanofstudents@com.edu](mailto:deanofstudents@com.edu) or [communityresources@com.edu](mailto:communityresources@com.edu).

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

To communicate with me in an expedient manner use my COM email.

**Course Delivery & Expectations:**

The course content is delivered via the online portion through reading, watching demonstrations on a screencast, and you completing the Essentials and Beyond drawing problem. A short five-question quiz is also given for each chapter. This is to ensure that you read the text.

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

The lab is intended to address your questions on the current chapter does not present it in its entirety. Therefore, you should have completed the reading and reviewed the supplemental material before the weekly lab. The drawing problems, discussion forum, and quiz are due the night prior to our lab meeting at 10:00 p.m.

All 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 an AutoCAD drawing, submit the AutoCAD file.

**Course Prerequisite:**

DFTG 1305 and DFTG 1409 **With a grade of 'C' or better.**



**Technology Prerequisite:**

You must complete the free [Online Learners workshop](#) Before you gain access to this course online via D2L.

**Course Format:**

The structure of this hybrid course is the topics introduced in the lab, and the exercises are completed in the collective setting. Online you continue practicing and mastering the skills and concepts for the week by completing the Essentials and Beyond. This exercise combines all the commands and concepts presented in the chapter exercises. There is a video showing step-by-step how to complete the Essentials and Beyond. In addition, you complete a quiz and discussion forum online. 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 in the previous week, provide more face-to-face demonstrations, and review your work one-on-one on 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 the College of the Mainland's systems, such as the internet connection 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 that has WIFI.