

Angelina College
Technology and Workforce Division
CIVIL DRAFTING DFTG 2430
Instructional Syllabus

I. BASIC COURSE INFORMATION

- A. Course Description: *(as stated in the bulletin, including necessary pre-requisite courses, credit hours)*
Four hours credit. An in-depth study of drafting methods and principles used in civil engineering. The student will interpret field notes; develop documents for road and highway design; analyze and layout drainage and utilities infrastructure; and perform appropriate calculations.
Three lecture and three lab hours each week. Prerequisite: DFTG 1409
- B. Intended Audience:
Second year, second semester
- C. Instructor:
Name: Dallas McClelland
Office Location: TW-113
Office Hours: As Posted or by Prior Appointment
Phone: 936-633-5251
E-mail Address: dmcclelland@angelina.edu

II. INTENDED STUDENT OUTCOMES:

- A. **Core Competencies – (Basic Intellectual Competencies)**
- 1. Critical Thinking Skills** to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
 - 2. Empirical and Quantitative Skills** to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions
 - 3. Teamwork** to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal
- B. **Course Objectives for all sections –**
1. Interpret field notes, and develop documents for a civil project.
 2. Analyze and layout drainage and utilities infrastructure, and perform related calculations.
 3. Read and interpret printed instructions for use in civil drafting hardware and software.
 4. Write answers to question in clear and coherent manner using appropriate language for civil drafting terminology.
 5. Use analytic and critical thinking relevant to civil drafting.

III. ASSESSMENT MEASURES OF STUDENT LEARNING OUTCOMES:

- A. **Core Competencies – (Basic Intellectual Competencies)**
- 1. Critical Thinking Skills** to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
 - 2. Empirical and Quantitative Skills** to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions
 - 3. Teamwork** to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal
- B. **Assessments for the Exemplary Objectives–**
Not applicable for courses in the Technology & Workforce Division.

C. Assessments for Course Objectives for all sections –

1. Interpret field notes, and develop documents for a civil project.
2. Analyze and layout drainage and utilities infrastructure, and perform related calculations.
3. Read and interpret printed instructions for use in civil drafting hardware and software.
4. Write answers to question in clear and coherent manner using appropriate language for civil drafting terminology.
5. Use analytic and critical thinking relevant to civil drafting.

D. Assessments for the Course Objectives as determined by the instructor –

Not applicable for courses in the Technology & Workforce Division.

IV. INSTRUCTIONAL PROCEDURES:

A. Methodologies common to all sections

1. Time Allocation: 96 contact hours
2. Lecture – 32 hours
3. Guided problem solutions in class – 54 lab hours
4. Tests – 8 hours

B. Methodologies determined by the instructor

Same as above

V. COURSE REQUIREMENTS AND POLICIES:

A. Required Textbooks, Materials, and Equipment –

- A. Text – Civil Drafting Technology by David A. Madsen & Terence M. Shumaker, 8th Edition.
- B. Supplement Text – AutoCAD and Its Applications, by David A. Madsen & Terence M. Shumaker, Goodheart -Wilcox, Release 2018

C. Equipment

Drawing equipment required for this course should be of good quality. When the instruments are to be purchased, the advice of your instructor, an advanced drafting student or a reliable dealer should be sought.

1. A USB Jump Drive minimum of 2gb.
2. One (1) – 1” 3 ring notebook with dividers.
3. Engineers scale.
4. Calculator: (features)
 - a. Trig functions
 - b. Degree/Grad/Radian Mode
 - c. Degree/Minute/Second Input/Output
5. Lead pencil or Pen

B. Assignments – *(Appropriate due dates, schedules, deadlines)*

1. Perform unit measurements and calculations.
 - 1.1 Measure and draw lines to a scale in feet.
 - 1.2 Measure and draw lines to scale in varas.
 - 1.3 Measure and draw lines to scale in chains.
 - 1.4 Add and subtract linear distances of feet or varas.
 - 1.5 Convert varas to feet.
 - 1.6 Convert feet to varas.
 - 1.7 Convert inches to decimals of a foot.
 - 1.8 Convert feet and inches to feet and decimals of a foot.
 - 1.9 Convert feet to miles.
 - 1.10 Convert miles to feet.
 - 1.11 Calculate the number of square feet within a closed polygon.
 - 1.12 Calculate the number of square varas within a closed polygon.
 - 1.13 Calculate the number of acres within a closed polygon.
 - 1.14 Calculate the number of acres in portions of a section.
2. Perform angular measurements and calculations
 - 2.1 Identify the geometry of the earth with technical terms.

- 2.2 Determine the approximate latitude and longitude of various geographical features on a map.
 - 2.3 Add or subtract angles.
 - 2.4 Measure and plot horizontal angles with a Cad System.
 - 2.5 Determine the number of degrees of angle between two points on the earth.
 - 2.6 Convert degrees and decimals of a degree to degrees, minutes and seconds.
 - 2.7 Convert degrees, minutes and seconds to degrees and decimals of a degree.
 - 2.8 Measure and plot deflection angles.
 - 2.9 Measure and plot angles to the right.
 - 2.10 Plot horizontal angles from azimuths.
 - 2.11 Plot horizontal angles from bearings.
 - 2.12 Convert azimuths to bearings.
 - 2.13 Convert bearings to azimuths.
 - 2.14 Calculate true north from magnetic north and declination.
 - 2.15 Calculate declination from magnetic north and true north.
3. Plot Traverses
- 3.1 Label and identify the elements, signs and conventions of a Cartesian coordinate system.
 - 3.2 Calculate the x and y coordinates of a tract of land.
 - 3.3 Plot points on the Cartesian coordinate system.
 - 3.4 Plot points by the method of latitude and departures.
 - 3.5 Plot points by the method of relative rectangular coordinates.
 - 3.6 Plot points from assumed points of beginning (absolute).
 - 3.7 Plot points using the Texas Plane Coordinate System (TPCS).
4. Plot horizontal curves
- 4.1 Plot curves when given the curve data.
 - 4.2 Calculate the missing data when given partial curve data.
 - 4.3 Establish the stationing along a curve.
 - 4.4 Calculate the coordinates of the key points of a curve.
 - 4.5 Plot curves with a manual template to a specific scale.
 - 4.6 Interpret CAD software data output.
 - 4.7 Plot curves with a CAD system.
 - 4.8 Plot compound curves.
 - 4.9 Calculate the missing data of a compound curve.
 - 4.10 Establish the stationing of a compound curve.
5. Plotting maps by metes and bounds
- 5.1 Notate plats with civil map symbols.
 - 5.2 Interpret a surveyors field notes.
 - 5.3 Calculate coordinates from field data.
 - 5.4 Interpret the output of CAD COGO (Coordinate Geometry) Computer data.
6. Interpret and document Texas registration system procedures
- 6.1 Identify and categorized survey types.
 - 6.2 Interpret abstracts.
 - 6.3 Interpret title insurance procedures.
 - 6.4 Identify and record types of deeds.
 - 6.5 Analyze and interpret deeds.
 - 6.6 Interpret legal descriptions.
 - 6.7 Transpose written deed descriptions to graphic symbols.
 - 6.8 Identify and interpret deed recording codes.
 - 6.9 Track a deed through the direct and indirect indexes.
 - 6.10 Locate tracts of land on a platt of subdivision.
 - 6.11 Interpret the tract codes of the county tax system.
 - 6.12 Locate and interpret tracts of land on the county tax maps.

C. Course Policies – (This course conforms to the policies of Angelina College as stated in the Angelina College Handbook.)

Educational Accommodations – If you have a disability (as cited in Section 504 of the Rehabilitation Act of 1973 or Title II of the Americans with Disabilities Act of 1990) that may affect your participation in this class, you may fill out the Educational Accommodations application within your AC Portal, under the “Student Services” tab. A Student Success team member will contact you once the application is received. At a post-secondary institution, you must self-identify as a person with a disability in order to receive services; for questions regarding the application process you can visit the Office of Student Success and Inclusion in the Student Center (205A); text 936.463.8078; or email access@angelina.edu. To report any complaints of discrimination related to a disability, you should contact Mr. Steve Hudman, Dean of Student Affairs, in Room 101 of the Student Center. You may also contact Dean Hudman by calling (936) 633-5292 or by emailing shudman@angelina.edu.

Attendance – Attendance is required as per Angelina College Policy and will be recorded every day. Any student with three (3) consecutive absences or four (4) cumulative absences may be dropped from the class, this does not include absences for college-authorized activities, but it does include absences for illness. Attendance records will be turned in to the College Records Office at the end of the semester. Do not assume that non-attendance in class will always result in an instructor drop. You must officially drop a class or risk receiving an F. This is official Angelina College Policy.

Student’s Responsibility For Attendance-(This is official Angelina College Student Handbook Policy)

1. It is the responsibility of the student to attend all classes and a record of attendance will be kept for all classes by the instructor.
2. It is the responsibility of the student to withdraw officially in the College Records Office from a class the student no longer desires to attend. Failure to do so may result in a failing grade.
3. Excessive absences are defined as three or more consecutive absences or four or more cumulative absences. Absences in online courses are based on an equivalent participation formula.
4. Students will not be dropped and will be allowed to make up work for absences because of college authorized and sponsored activities. It is the student’s responsibility to arrange for make-up work with the instructor and to complete it within a reasonable time.
5. A student dropped because of excessive absences will be directed to seek the approval of the instructor to be reinstated.
6. All make-up work is at the discretion of the instructor and is defined in the course syllabus.

Additional Policies Established by the Individual Instructor –

Assignments are due on the date specified. Assignments turned in late will not receive full credit.

Test must be taken on the scheduled date. Special arrangements must be made before the day of the test for exceptions covered in the college catalog.

VI. COURSE CONTENT:

A. Required Content/ Topics – *(common to all sections)*

The student will demonstrate an understanding of civil drafting, survey units, plat layouts, property deeds and units of measure associated with civil drafting and be able to identify and use civil engineering symbols. The student will demonstrate the proper use of math skills, including trigonometry functions, and exhibit the ability to produce civil engineering drawings.

B. Additional Content *(as required by the individual Instructor)*

1. The final will cover material since the last unit test.
2. The final will be comprehensive only with regard to concepts and terms which form a basis for the subject matter.

VII. EVALUATION AND GRADING:

A. Grading Criteria (*percents, extra credit, etc.*)

Lab assignments	60%
Unit test	25%
Final test	15%

To receive credit for unit tests and final exams, they must be taken at the designated location and in the presence of the instructor.

B. Determination of Grade (*assignment of letter grades*)

90-100	- A
80-89	- B
70-79	- C
60-69	- D
Below 60	- F

VIII. SYLLABUS MODIFICATION:

The instructor may modify the provisions of the syllabus to meet individual class needs by informing the class in advance as to the changes being made.

- IX.** As a student enrolled in a Technology & Workforce program, you will encounter certain risks while you are in a classroom, laboratory experience, or in a clinical or practicum setting. In the event that you sustain an injury and/or require any medical testing or care, all resulting medical expenses (hospital, ambulance, or physician fees), are your financial responsibility and not the responsibility of Angelina College or the clinical/practicum site.