I. INTRODUCTION

Pipe Drafting is a course directly related to piping processes as found in production, processing, and transportation of liquids and gases in industrial and building applications. Much of the study centers around petroleum production and other types of energy in liquid and gas forms. The units of study include fundamentals, principles in practice and applications as related to drafting conventions.

II. OVERALL OR GENERAL OBJECTIVES OF THE COURSE

Upon successful completion of this course, Piping Drafting, the student should be able to:

1. Identify equipment and use respective terms.
2. Use reference data for piping component sizes.
3. Prepare flow diagrams.
4. Select and use standard specification data.
5. Prepare plans and detail drawings.
6. Prepare spool drawing in pictorial.

III. INSTRUCTIONAL MATERIALS

- The instructional materials identified for this course are viewable through www.ctcd.edu/books

References:

  a. Rip Weaver, Process Piping Drafting, Gulf Publishing Co., Third Edition


- Notebook

- Flash drive, recommend at least a 512MB.
IV. COURSE REQUIREMENTS

A. Students are encouraged to work quickly and efficiently. Their grades will depend upon their speed and skill as well as their knowledge of drafting techniques. Students should remember that requirements for a passing grade includes keeping up-to-date on all assignments. (See section VI for assignment grading)

B. All outside reading assignments must be read before discussion dates. All course material should be brought to each class meeting.

V. EXAMINATIONS

A. Examinations will generally consist of a combination of objective questions and drawing problems. The drawing portions shall be graded for accuracy, neatness, and speed.

B. There shall be an announced Quiz at or about the dates scheduled.

C. Unannounced short quizzes shall be given at the discretion of the instructor.

D. Make-up examinations shall be given only to those students having an excused college absence. Excusable absences are those resulting from personal illness, emergencies arising within the family, official school sponsored trips, and military duties or orders requiring brief absences.

E. At the option of the instructor, any missed exams shall be: made up at a time convenient to the instructor; or the flowing exam shall count additionally for the missed exam.

F. At no time shall a student use a cell phone or other personal communication or music device during a test, quiz, or any other evaluation type process. Any of these devices should be turned off during the time of the test or quiz and should not be accessed until the student has completed the evaluation and has left the classroom. Violation of this policy shall result in the student receiving a failing grade for the course.

VI. SEMESTER GRADE COMPUTATION

Ninety-five percent of the semester grade will be derived from the average score of the unit quizzes combined equally with the averaged score of the drawing assignments. The remaining 5% of the semester grade shall be based on attendance/participation.

Attendance= 5 points minus 1 point for each unexcused absence
Quiz Average = \frac{\text{Total Score of Quizzes}}{\text{Numbers of Quizzes}}

Drawing Average = \frac{\text{Total Score of Assignments}}{\text{Number of Assignments}}

Semester Average = \frac{(\text{Quiz Average} + \text{Drawing Average} \times 0.95) + \text{Attendance}}{2}

Students are advised to keep an accurate record of their respective assignments and quiz scores. With this record and by using the formulas provided, grade averages can be calculated at any time during the semester.

The drawing problems assigned will be graded on five major points: Speed, View placement, Accuracy, Line Type, and Text. In most cases, a number grade will be assigned to the drawing based on the numbers one to ten (one being the lowest and ten the highest).

**Unless otherwise instructed, all assignments shall be the individual work of the student. Although collaboration and assistance by other students is encouraged, the creation and production of the work must be that of the individual student. The electronic (or otherwise) sharing of assignments is to be considered collusion and shall result in disciplinary action.**

All assignments are due per the course outline. Assignments are due at the beginning of class. Late assignments may be accepted at the instructor’s option. Late assignments will be penalized 1 point for every 24 hours the assignment is late.

**VII. NOTES AND ADDITIONAL INSTRUCTIONS FROM COURSE INSTRUCTOR**

**ATTENDANCE POLICY**

**Tardiness**

_Students are required to be in classrooms on time. Instructors may choose to lower a student's grade because of tardiness. Excessive tardiness, since it is disruptive to the educational process, may result in disciplinary action. Three unexcused tardies will result in 1 absence. Due process and the right to appeal will be provided to students subjected to disciplinary action. Details can be found in the Student Handbook, which is available at the Office of Student Services._

**Class Attendance**
1. Because absences for any reason negatively affect the learning process, the individual student, and the class, students are expected to attend all classes in which they are enrolled.

2. Responsibility for class attendance rests with the student. Regular and punctual attendance at all scheduled classes is expected, and the College reserves the right to deal at any time with individual cases of nonattendance.

3. The effect of absences on grades is determined by the instructor.

4. Excessive absences constitute cause for dropping a student from class; in such a case the grade of FN may be given.

5. In extreme cases the academic dean may suspend the student from the College.

6. When absence from class is necessary for any reason, the student has the responsibility to arrange to make up assignments missed during the absence.

7. The decision to allow a student to make up work following any absence rests solely with the instructor.

8. The student who desires to be absent from classes for the observance of a religious holy day should submit a request to each instructor by the 15th calendar day after the first day of the semester. Although the student will be excused from classes, he/she will be responsible for make up of all work or tests missed. A "religious holy day" means a holy day observed by a religion whose place of worship is exempt from property taxation under Section 11.20, Tax Code.

**Excessive Absences**

Absences from classes for any reason must not exceed College standards. Because objectives can vary from department to department and from course to course, the instructor shall inform the student of specific course objectives at the initial class meeting. A student who is not meeting course objectives may be withdrawn from the course at the discretion of the instructor.

Students who have not attended class by the 12th class day will be dropped by the instructor with a grade of "W".
Students may be administratively withdrawn from any class when their absences exceed a total of five (5) class meetings for long semester, three (3) class meetings for eight-week semester, two (2) class meetings for six-week semester, and in the opinion of the instructor they cannot satisfactorily complete the course. The final decision rests solely with the instructor.

The following specific rules apply to absences:

1. Instructors are required to keep attendance records.

2. Each faculty member will inform students of the attendance policy of the course at the initial class meeting.

3. Students are responsible for understanding the attendance policy for each course in which they enrolled and for meeting the attendance requirements.

4. Failure to meet the attendance requirements in a course may lower a grade for the semester or may result in failure in the course.

5. An administrative withdrawal may be initiated when the student fails to meet College attendance requirements. The instructor will assign the appropriate grade on the Administrative Withdrawal Form for submission to the registrar.

6. Only instructors can authorize an absence. Regardless of the reason for the absence, students are responsible for completing all course work covered during any absence.

**Official Withdrawal Policy**

It is the student's responsibility to officially drop a class if circumstances prevent attendance. Any student who desires to, or must, officially withdraw from a course after the first scheduled class meeting must file an Application for Withdrawal or an Application for Refund at the Records Office, or with a Central Texas College representative at the Military Education Center.

1. The withdrawal form must be signed by the student.

2. Application for Withdrawal will be accepted at any time prior to the 12th week of classes. Students attending the Fort Hood eight-week classes may withdraw at any time before the Wednesday prior to the first day of finals. Also see Grade Notes: "W", page 29. The date is published each semester in the Schedule Bulletin.
3. Students using Financial Aid, Military Tuition Assistance, VA benefits or other than personal funds may be required to repay tuition and fees to the funding agency. For specific repayment requirements, students are referred to the Student Financial Aid Office, or the Veterans Services Office. Military Tuition Assistance students are referred to the Military Education Center. Students must withdraw in person after receiving FA, MTA, or VA approval.

4. Student may not withdraw from a class for which the instructor has previously issued the student a grade of "F" or "FN" for nonattendance.

**Disability Support Services**

Disability Support Services provides services to students who have appropriate documentation of a disability. Students requiring accommodations for class are responsible for contacting the Office of Disability Support Services (DSS) located on the central campus. This service is available to all students, regardless of location. Review the website at [www.ctcd.edu/disability-support](http://www.ctcd.edu/disability-support) for further information. Reasonable accommodations will be given in accordance with the federal and state laws through the DSS office.

**VIII. COURSE OUTLINE**

A course outline and assignment sheet will be provided to each student as a supplement to this syllabus, prepared so as to reflect the most current date and state-of-the-art drafting assignments for the respective semester. As will be seen below, that outline divides the course into five units of studies, with information grouped according to the title of the respective unit.

Student activities through each unit will be essentially the same. Reading assignments are to be prepared prior to the scheduled class in order to better facilitate discussions and greater enhance understanding.

A. **Unit One: Fundamentals**

1. **Unit Objectives:** Upon successful completion of this unit, the student should be able to:

   a) Recognize equipment and use respective terms
   b) Use reference charts to determine basic pipe data
   c) Prepare drawings of components using proper line work, layout and symbols

B. **Unit Two: Flow Diagrams and Instrumentation**
1. **Unit Objectives:** Upon successful completion of this unit, the student should be able to:

   a) *Prepare process flow drawings*
   b) *Prepare mechanical flow drawings*
   c) *Prepare utility flow sheets*
   d) *Prepare instrumentation diagrams*

C. **Unit Three:** Abbreviations and Specifications

1. **Unit Objectives:** Upon successful completion of this unit, the student should be able to:

   a) *Recognize and use abbreviations for piping drafters*
   b) *Identify and apply standard specifications to piping drawings*
   c) *Prepare pipeline lists*

D. **Unit Four:** Piping Design, Notes and Plans

1. **Unit Objectives:** Upon successful completion of this unit, the student should be able to:

   a) *Prepare battery plans*
   b) *Prepare standard piping sectional views*
   c) *Show piping on vertical vessels*

E. **Unit Five:** Isometric Definitions, Dimensioning and Call-outs

1. **Unit Objectives:** Upon successful completion of this unit the student should be able to:

   a) *Prepare isometric configurations of pipelines*
   b) *Prepare spool drawings for fabrication purposes*
   c) *Use conventional dimensioning techniques, including call-outs on isometric drawings*