



**HCC** | HOUSTON COMMUNITY COLLEGE  
**Drafting and Design Engineering Technology Department**

<https://www.hccs.edu/programs/areas-of-study/science-technology-engineering--math/drafting--design-engineering-technology/>

**DFTG 1333: Mechanical Drafting | CRN | #19299 | Fall 2021**

**Online Class – Tuesdays & Thursdays 2:00pm**

16 Weeks (08/23/2021-12/08/2021)

6 Credit Hours | 96 hours for entire semester

**Prerequisites**

DFTG-1309 Basic AutoCAD and DFTG-1305 Technical Drafting

**Students:** In order to attend this class, you should be able to use AutoCAD or a CAD software for performing weekly assignments and projects.

**Instructor Contact Information**

**Students:** Best method of contact: either on Canvas Inbox or [francis.ha@hccs.edu](mailto:francis.ha@hccs.edu).

In case of emergency, please send message to your instructor's cell phone: 281-804-8090

Instructor: Francis Ha, BS, MA

Office: Ste. AD1

HCC Email: [francis.ha@hccs.edu](mailto:francis.ha@hccs.edu)

Office Phone: 713-718-5544

Office Hours: Online anytime

Office Location: Spring Branch Campus

*Please feel free to contact me concerning any problems that you are experiencing in this course. Your performance in my class is very important to me. I am available to hear your concerns and just to discuss course topics.*

**My Personal Welcome**

Welcome to Technical Drafting – I'm delighted that you have chosen this course. Please feel free to contact me concerning any problems that you are experiencing in this course. You do not need to wait until you have received a poor grade before asking for my assistance. Your performance in my class is very important to me. I am available to hear your concerns and just to discuss course topics.

**Eagle Online Canvas Learning Management System**

This online section will use [Eagle Online Canvas](https://eagleonline.hccs.edu) (<https://eagleonline.hccs.edu>) to supplement assignments, exams, projects and activities. It is recommended that you use [Firefox](#) or [Chrome](#) as your browser.

**What is Online Class?**

Online class is a course conducted over the internet via Eagle Canvas. It is generally self-packed, allowing for greater flexibility in completing course assignments. The chapter lectures are recorded so students can review them anytime. Students must perform quizzes, Exams, Drawing Assignments, and Final Project by the individual deadlines. The hours that students spending on Canvas will be monitored by the instructor. They are counted to the final scores.

## HCC Online Information and Policies

Here is the link to information about HCC Online classes including the required Online Orientation for all fully online classes: <http://www.hccs.edu/online/>

### What's Exciting About This Course

This course is designed to provide the *beginning* drafting student with fundamental *manual* drafting skills. It covers an introduction to the principles of drafting to include terminology and fundamentals, including sizes and shape descriptions, projection methods, geometric construction, sections, auxiliary views, and dimensioning.

### Prerequisites and/or Co-Requisites

This class does not require any prerequisite. However, it is strongly recommended that you should take DFTG-1309 Basic AutoCAD at the same semester. You can also enroll DFTG-1310 MicroStation as well. Please carefully read and consider the repeater policy in the Student Handbook <https://www.hccs.edu/resources-for/current-students/student-handbook/>

### Scoring Rubrics, Sample Assignments, etc.

Look in Eagle Online Canvas or Instructor Learning Web for the scoring rubrics for assignments, samples of class assignments, and other information to assist you in the course. <https://eagleonline.hccs.edu/login/ldap>

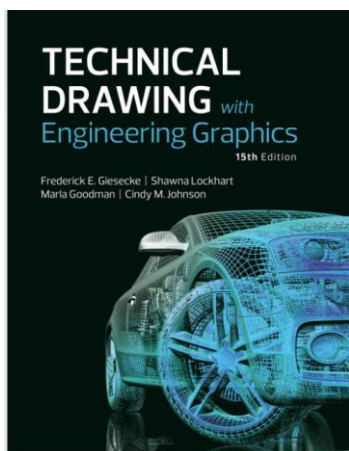
### Instructor's Preferred Method of Contact

I will respond to emails within 24 hours Monday through Friday; I will reply to weekend messages on Monday mornings.

## INSTRUCTIONAL MATERIALS

### Textbook Information

The textbook listed here is *required* for this course.  
**"Technical Drawing with Engineering Graphics"**  
 15th edition or newer  
 Author: Frederik E. Giesecke and his group.  
 Publisher: Prentice Hall, Pearson Education Inc.  
 ISBN-13: 978-0-13-430641-4



Same as DFTG 1305 Technical Drafting textbook with advanced topics. However, students need to use a CAD software (i.e. AutoCAD, MicroStation Inventor, or SolidWorks) for drawing preparation.

It is included in a package that contains the text as well as an access code and are found at the [HCC Bookstore](#). You may either use a hard copy of the book, or rent the e-book from Pearson. Order your book here: [HCC Bookstore](#)

### Temporary Free Access to E-Book

Not available.

## Other Instructional Resources

Online via Eagle's Canvas

## Publisher's Digital Workbook

None.

## Tutoring

HCC provides free, confidential, and convenient academic support, including writing critiques, to HCC students in an online environment and on campus. Tutoring is provided by HCC personnel in order to ensure that it is contextual and appropriate. Visit the [HCC Tutoring Services](#) website for services provided. *Please note, during this COVID-19 Pandemic, all HCC closed so this Service is temporarily suspended.*

## Libraries

The HCC Library System consists of 9 libraries and 6 Electronic Resource Centers (ERCs) that are inviting places to study and collaborate on projects. Librarians are available both at the libraries and online to show you how to locate and use the resources you need. The libraries maintain a large selection of electronic resources as well as collections of books, magazines, newspapers, and audiovisual materials. The portal to all libraries' resources and services is the HCCS library web page at <http://library.hccs.edu>.

## Supplementary Instruction

Supplemental Instruction for Drafting and Design Engineering Technology Department provides student access to open lab with the Lab assistant. Additional HCC supplement for academic course enrichment can be found at the following link: <http://www.hccs.edu/resources-for/current-students/supplemental-instruction/>.

## Course Overview

This course is designed as a continuation of DFTG 1305 Technical Drafting *and* DFTG-1309 Basic AutoCAD as well as a general study of drafting applications. All assignments are drawn by AutoCAD software.

This course covers the following advanced topics:

- Orthographic Projection
- Auxiliary views
- Sectioning Techniques
- Dimensioning.
- Axonometric Projection*
- Perspective Views*
- Fasteners, Threads and Tolerances.
- Detailed Drawing and Specifications
- Assembly, Sub-assembly drawings and BOM

*General drafting applications include an introduction to:*

- Structural Detailing.
- Piping Drawings.
- Landform Drawings.

## Learning Objectives

1. How to draw and properly dimension moderately complex machine parts.
2. How to create standard Title Block with technical information on the drawing.
3. How to draw and properly dimension moderately complex auxiliary views.
4. How to draw and properly dimension moderately complex sectional views.
5. How to prepare detailed mechanical drawings and related assembly drawings.
6. Understanding of basic machine shop operations and notations on drawings.
7. Understanding of machine fasteners and specifications and how to draw them.
8. How to draw a simple isometric schematic of a piping system.
9. How to read and produce map drawings
10. How to create a simple structural truss or floor plan drawing (steel fabrication).
11. How to create a two point perspective drawing.

## Core Curriculum Objectives (CCOs)

The Department of Labor has identified skill sets that U.S. employers want most in entry level employee. It is our commitment to prepare every student with the knowledge and skills needed to succeed in today's dynamic environment. The HCCS Drafting & Design Engineering Technology Department has specified that the course address the following core objectives:

- *Interpret/communicate data: Selects and analyzes information and communicates the results to others using oral, written, graphical, pictorial, or multi-media methods.*
- *Monitors and corrects performance: Distinguishes trends, predicts impact of actions on system operations, diagnoses deviations in the function of a system, organization, and takes necessary action to correct performance.*
- *Design/improve systems: Prevents, identifies, or solves problems in machines, computers, and other technologies.*
- *Creative thinking: Uses imagination freely, combines ideas or information in new ways, makes connections between seemingly unrelated ideas, and reshapes goals in ways that reveal new possibilities.*
- *Students will be presented with a civil engineering problem for which they will be required to design solution.*
- *Based on known trends and their creativity, each student will be responsible designing a solution and diagnose deviations and solve problems in the function of the design and take actions necessary to improve on and correct performance.*
- *Evaluation of these skills will be based on the creativity, functionality and efficiency of the civil design.*

## Learning Outcomes

- This course is designed to be a continuation of DFTG 1305 Technical Drafting, and to prepare the student for entry into any one of the four specialization areas within the AAS degree curriculum.
- Knowledge:
  - a. Identify the various lines used on an engineering drawing
  - b. Define common geometric shapes
  - c. Application of the basic rules of dimensioning for part manufacture

## Learning Objectives

- a. Ability to draw and properly dimension moderately complex machine parts

- b. How to complete electronic title block information
- c. How to draw and properly dimension moderately complex auxiliary views
- d. How to draw and properly dimension moderately complex section views
- e. How to prepare detail mechanical drawings and related assembly drawings
- f. Understanding of basic machine shop operations and notations on drawings
- g. Understanding of machine fasteners and specifications and how to draw them
- h. How to draw a simple isometric schematic of a piping system
- i. How to read and produce map drawings
- j. Create a simple structural truss or floor plan drawing (steel fabrication)
- k. How to create a two point perspective drawing

## **Student Success**

Expect to spend at least twice as many hours per week outside of class as you do in class studying the course contents. Additional time could be required for written assignments. The assignments provided will help you use your study hours wisely. Successful completion of this course requires a combination of the following:

- Reviewing in-class lectures via Power Points that are available on Canvas.
- Reading the textbook
- Attending class in-person and/or online
- Completing assignments
- Participating in-class activities

There is no short cut for success in this course; it requires reading (and probably re-reading) and studying the materials using the course objectives as your guide.

## **Instructor and Student Responsibilities**

As your Instructor, it is my responsibility to:

- Provide the grading scale and detailed grading formula explaining how student grades are to be derived
- Facilitate an effective learning environment through learner-centered instructional techniques
- Provide a description of any special projects or assignments
- Inform students of policies such as attendance, withdrawal, tardiness, and make up
- Provide the course outline and class calendar which will include a description of any special projects or assignments
- Arrange to meet with individual students before and after class as required

As a student, it is your responsibility to:

- Arrive class on time and attend class in-person and/or online
- Participate actively by reviewing course materials, interacting with classmates, and responding promptly in your communication with me
- Read and comprehend the textbook
- Complete the required assignments and submit on time and perform all exams
- Ask for help when there is a question or problem
- Keep copies of all paperwork, including this syllabus, handouts, and all assignments
- Attain a raw score of at least passing score on the departmental final exam
- Be aware of and comply with academic honesty policies in the HCCS Student Handbook

## **ASSIGNMENTS, EXAMS, AND ACTIVITIES**

### **Assignments**

There are eight to nine assignments, a mid-term project and a final project for this class. Unless otherwise notified, students are required to submit assignments and projects using scanned .PDF file and submit online via Eagle's Canvas. All assignments and projects should be turned in on time as instructed. (This allows the instructor to grade the work, return to student hence the student use the feedbacks as a learning tool). More details explained in class or on Canvas by the instructor.

### **Exams**

There are three Exams: Exam 1, Exam 2 and Final Exam in this class. The exams are multiple-choice questions.

### **In-Class Activities**

Students are required to participate all exercises or assignment discussions in class.

### **Final Exam**

All students will be required to take a comprehensive departmental final exam consisting of multiple-choice questions. All the information students need to prepare for the exam is in the [Final Exam Handbook](#).

Students who are absent from the final exam without discussing their absence with the instructor in advance or within 24 hours afterward will receive a course grade of F or I (Incomplete). In case the absent student gets an "I" grade, he or she must complete the assigned make-up work by the instructor. Any student who does not complete the task by the end of the following long semester will receive a final grade of zero and a course grade of F.

### **Grading Formula**

The Drafting and Design Engineering Technology department adopt a points-based grading system with a maximum 100 points.

Attendance	10%
Weekly drawing assignments	50%
Chapter Exams	20%
Final Exam	<u>20%</u>
<b>Total:</b>	<b>100%</b>

### **Grading Procedure:**

<b>Grade</b>	<b>Total Points</b>
A	90+
B	80-89.99
C	70-79.99
D	60-69.99
F	<60
Fx	Stop to show up to the class until the end of the semester.

## **Instructor's Practices and Procedures**

### **Missed Assignments**

The student must request a make-up test and it should be scheduled at the earliest possible date following the quiz (or mid-term) missed. Please note that a make-up exam is not a retake. That is, make-up exams are allowed only for missed exams with the permission from the instructor. NO make-up test is given for the final examination.

### **Academic Integrity**

Students are responsible for conducting themselves with honor and integrity in fulfilling course requirements. College System Officials may initiate penalties and/or disciplinary proceedings against a student accused of scholastic dishonesty.

- "Scholastic dishonesty" includes, but is not limited to, cheating on a test, plagiarism, and collusion.
- "Cheating" on a test includes:
  - Copying from another student's test paper;
  - Using materials during a test that are not authorized by the person giving the test;
  - Collaborating with another student during a test without authority;
  - Knowingly using, buying, selling, stealing, transporting, or soliciting in whole or part the contents of an un-administered test;
  - Bribing another person to obtain a test that is administered.
- "Plagiarism" means the misuse of another's work and the deliberate incorporation of that work into work you offer for credit.
- "Collusion" means the unauthorized collaboration with another person in preparing work offered for credit.

Determination of scholastic dishonesty will be at the discretion of the instructor. Here's the link to the HCC information about academic integrity (Scholastic Dishonesty and Violation of Academic Scholastic Dishonesty and Grievance):

<http://www.hccs.edu/about-hcc/procedures/student-rights-policies--procedures/student-procedures/>

### **Attendance Procedures for in-person class**

You are expected to attend all lecture classes and labs. You are also responsible for all materials covered in either lecture or lab. In the case of your absence, you must contact the instructor to obtain make-up assignments or arrange make-up testing, either of which can be distributed at the instructor's discretion.

Class attendance is checked daily. You may be dropped from the class and get an F grade if you are absent more than 12.5% of the instruction hours (lecture and lab). For example: A 12.5% of 96-hour course, meeting twice per week for 3 hours per class meeting equals 12 hours. If you are absent more than 4 class meetings, you may drop.

### **Student Conduct**

Students are responsible for knowing and obeying the HCC rules such as maintaining high standards of academic integrity, respecting the rights of others. A student who violates these rules, whether on or off campus or on-line, will be subject to adjudication and potential disciplinary action in accordance with the Student Handbook. Please carefully read and

consider the repeater policy in the Student Handbook <https://www.hccs.edu/resources-for/current-students/student-handbook/>

### Instructor’s Course-Specific Information (As Needed)

My teaching philosophy is emphasized on “Analytical”. I focus on the relationship of Descriptive Geometry as an "analytical" graphic visualization process. This helps student to gain a conceptual understanding of how to analyze and represent 3-D objects in 2-D space for the purpose of designing, making and extracting.

### Electronic Devices

Out of consideration for others, please turn your cell phone to the silent mode. No texting is allowed while class is in session. No Internet surfing during lectures and labs. Absolutely no Internet site with obscene or nude pictures.

## HCC Policies

Here’s the link to the HCC Student Handbook <http://www.hccs.edu/resources-for/current-students/student-handbook/> In it you will find information about the following:

Academic Information	Incomplete Grades
Academic Support	International Student Services
Attendance, Repeating Courses, and Withdrawal	Health Awareness
Career Planning and Job Search	Libraries/Bookstore
Childcare	Police Services & Campus Safety
Disability Support Services	Student Life at HCC
Electronic Devices	Student Rights and Responsibilities
Equal Educational Opportunity	Student Services
Financial Aid TV (FATV)	Testing
General Student Complaints	Transfer Planning
Grade of Fx	Veteran Services

### EGLS<sup>3</sup>

The EGLS<sup>3</sup> (Evaluation for Greater Learning Student Survey System) will be available for most courses near the end of the term until finals start. This brief survey will give invaluable information to your faculty about their teaching. Results are anonymous and will be available to faculty and division chairs after the end of the term. EGLS<sup>3</sup> surveys are only available for the Fall and Spring semesters. -EGLS3 surveys are not offered during the Summer semester due to logistical constraints.

<http://www.hccs.edu/resources-for/current-students/egls3-evaluate-your-professors/>

### Campus Carry Link

Here’s the link to the HCC information about Campus Carry:  
<http://www.hccs.edu/departments/police/campus-carry/>

### HCC Email Policy

When communicating via email, HCC requires **students to communicate only through the HCC email** system (with W#### numbers) to protect your privacy. If you have not



activated your HCC student email account, you can go [to HCC Eagle ID](#) and activate it now. You may also use Canvas Inbox to communicate.

### **Housing and Food Assistance for Students**

Any student who faces challenges securing their foods or housing and believes this may affect their performance in the course is urged to contact the Dean of Students at their college for support. Furthermore, please notify the professor if you are comfortable in doing so. This will enable HCC to provide any resources that HCC may possess.

### **HCC Grading Scale can be found on this site under Academic Information:**

<http://www.hccs.edu/resources-for/current-students/student-handbook/>

### **Weekly Activities (Course Calendar)**

**Please see on Canvas for Calendar details**

## **Instructor's Practices and Procedures**

### **Syllabus Modifications**

The instructor reserves the right to modify the syllabus at any time during the semester and will promptly notify students in writing, typically by e-mail, of any such changes.

### **Missed Assignments**

The student must request a make-up test and it should be scheduled at the earliest possible date following the quiz (or mid-term) missed. Please note that a make-up exam is not a retake. That is, make-up exams are allowed only for missed exams with the permission from the instructor. NO make-up test is given for the final examination.

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  - Using materials during a test that are not authorized by the person giving the test;
  - Collaborating with another student during a test without authority;
  - Knowingly using, buying, selling, stealing, transporting, or soliciting in whole or part the contents of an un-administered test;
  - Bribing another person to obtain a test that is administered.
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Childcare	Police Services & Campus Safety
Disability Support Services	Student Life at HCC
Electronic Devices	Student Rights and Responsibilities
Equal Educational Opportunity	Student Services

Financial Aid TV (FATV)	Testing
General Student Complaints	Transfer Planning
Grade of Fx	Veteran Services

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<http://www.hccs.edu/resources-for/current-students/egls3-evaluate-your-professors/>

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<http://www.hccs.edu/departments/police/campus-carry/>

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### **Office of Institutional Equity**

Use the link below to access the HCC Office of Institutional Equity, Inclusion, and Engagement (<http://www.hccs.edu/departments/institutional-equity/>)

### **Disability Services**

HCC strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), please meet with a campus Abilities Counselor as soon as possible in order to establish reasonable accommodations. Reasonable accommodations are established through an interactive process between you, your instructor(s) and Ability Services. It is the policy and practice of HCC to create inclusive and accessible learning environments consistent with federal and state law. For more information, please go to <http://www.hccs.edu/support-services/disability-services/>

### **Title IX**

Houston Community College is committed to cultivating an environment free from inappropriate conduct of a sexual or gender-based nature including sex discrimination, sexual assault, sexual harassment, and sexual violence. Sex discrimination includes all forms of sexual and gender-based misconduct and violates an individual's fundamental rights and personal dignity. Title IX prohibits discrimination on the basis of sex-including pregnancy and parental status in educational programs and activities. If you require an accommodation due

to pregnancy please contact an Abilities Services Counselor. The Director of EEO/Compliance is designated as the Title IX Coordinator and Section 504 Coordinator. All inquiries concerning HCC policies, compliance with applicable laws, statutes, and regulations (such as Title VI, Title IX, and Section 504), and complaints may be directed to:

David Cross

Director EEO/Compliance

Office of Institutional Equity & Diversity

3100 Main

(713) 718-8271

Houston, TX 77266-7517 or [Institutional.Equity@hccs.edu](mailto:Institutional.Equity@hccs.edu)

<http://www.hccs.edu/departments/institutional-equity/title-ix-know-your-rights/>

### **Office of the Dean of Students**

Contact the office of the Dean of Students to seek assistance in determining the correct complaint procedure to follow or to identify the appropriate academic dean or supervisor for informal resolution of complaints.

<https://www.hccs.edu/about-hcc/procedures/student-rights-policies--procedures/student-complaints/speak-with-the-dean-of-students/>

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