



## Course Number and Title: CMT 111 Construction Print Reading

**Campus Location:**

Georgetown, Dover, Stanton

**Effective Date:**

2020-51

**Prerequisite:**

ENG 090 or ENG 091, MAT 010 or concurrent, SSC 100 or concurrent

**Co-Requisites:**

None

**Course Credits and Hours:**

3.00 credits

2.00 lecture hours/week

2.00 lab hours/week

**Course Description:**

This course introduces students to the process of interpreting and communicating information found on residential and commercial construction documents. The use of 2-dimensional and 3-dimensional visualization skills as well as mathematical calculation skills to read and interpret drawing data are emphasized.

**Required Text(s):**

Obtain current textbook information by viewing the [campus bookstore - https://www.dtcc.edu/bookstores](https://www.dtcc.edu/bookstores) online or visit a campus bookstore. Check your course schedule for the course number and section.

**Additional Materials:**

Architectural scale, engineering scale, construction calculator, hard hat, Level 3 safety vest, safety glasses

**Schedule Type:**

Classroom Course

Hybrid Course

**Disclaimer:**

None

**Core Course Performance Objectives (CCPOs):**

1. Interpret graphic and text information provided in both residential and commercial construction documents, and identify elements of construction drawing organization. (CCC 2, 4, 5; PGC 2, 5)
2. Calculate mathematical values, and interpret dimensions using construction documents. (CCC 2, 4, 5, 6; PGC 2, 5)
3. Interpret written specifications, and relate them to construction drawings. (CCC 2, 4, 5; PGC 2, 5)
4. Identify commonly used construction materials. (CCC 1, 2, 4, 5; PGC 2, 5)
5. Recognize and interpret civil construction documents using proper terminology. (CCC 2, 4, 5; PGC 2, 5)
6. Categorize and interpret residential and commercial architectural, structural, mechanical, electrical, and plumbing construction documents. (CCC 1, 2, 4, 5; PGC 2, 5)
7. Demonstrate professional and ethical conduct as expected in industry. (CCC 1, 2, 3, 4, 5, 6; PGC 3, 5)

See Core Curriculum Competencies and Program Graduate Competencies at the end of the syllabus. CCPOs are linked to every competency they develop.

### Measurable Performance Objectives (MPOs):

Upon completion of this course, the student will:

1. Interpret graphic and text information provided in both residential and commercial construction documents, and identify elements of construction drawing organization.
  1. Identify the common types of lines and symbols used on prints, and explain their meanings.
  2. Recall common construction abbreviations.
  3. Visualize and create orthographic views of objects and structures.
  4. Identify the different types of building views shown in construction drawings.
  5. Describe dimensioning practices and the dimensioning methods used for building features on different drawing types.
  6. Explain sheet sizes, title block information, drawing scale, and general organization of a set of prints.
  7. Cross-reference drawings in a drawing set.
2. Calculate mathematical values, and interpret dimensions using construction documents.
  1. Calculate dimensions, areas, and volumes of objects.
  2. Relate math to construction problems.
  3. Read and interpret customary rules and tapes.
  4. Sketch and interpret measurements using an architect's and an engineer's scale.
  5. Interpret dimension data, and make associations and calculations from same.
3. Interpret written specifications, and relate them to construction drawings.
  1. Explain the purpose and necessity of specifications.
  2. Locate a particular material within specifications.
  3. Describe how building code requirements impact the building process.
  4. Determine sizes, materials, manufacturer, and other technical specifications of individual components and assemblies specified on a drawing.
  5. Classify life safety and code requirements as they relate to commercial and residential building codes.
  6. Discuss the purpose of shop drawings.
  7. Interpret as-built drawings, and discuss their significance.
4. Identify commonly used construction materials.
  1. Identify the basic components of concrete.
  2. Describe different types of masonry brick, block, and mortar.
  3. Recognize different structural steel shapes, and determine their meaning.
  4. Determine various types of glass, plastics, and insulation.
  5. Identify symbols representing materials on a drawing.
  6. Explain the fundamentals of green building construction.
5. Recognize and interpret civil construction documents using proper terminology.
  1. Recognize common features of site plans.
  2. Identify property line descriptions.
  3. Explain the difference between true north and plan north.
  4. Read contour lines on a site plan.
  5. Plot topography sections.
6. Categorize and interpret residential and commercial architectural, structural, mechanical, electrical, and plumbing construction documents.
  1. Identify the types of drawings classified as architectural drawings.
  2. List different types of floor plans used in construction projects.
  3. Describe the purpose of elevations, sections, and details.
  4. Determine materials specified on architectural drawings.
  5. Interpret construction requirements specified on architectural drawings.
  6. Classify various components of a foundation system.
7. Demonstrate professional and ethical conduct as expected in industry.
  1. Identify the need for self-discipline and time management in technical industries.
  2. Communicate and function effectively as a member of a team.

### Evaluation Criteria/Policies:

Students must demonstrate proficiency on all CCPOs at a minimal 75 percent level to successfully complete the course. The grade will be determined using the Delaware Tech grading system:

92	-	100	=	A
83	-	91	=	B
75	-	82	=	C
0	-	74	=	F

Students should refer to the [Student Handbook - https://www.dtcc.edu/handbook](https://www.dtcc.edu/handbook) for information on the Academic Standing Policy, the Academic Integrity Policy, Student Rights and Responsibilities, and other policies relevant to their academic progress.

**Final Course Grade:**

Calculated using the following weighted average

Evaluation Measure	Percentage of final grade
Test #1 (Summative)	10%
Test #2 (Summative)	10%
Final Exam (Summative)	25%
Print Reading Activities (Formative)	35%
Quizzes (Formative, equally weighted)	20%
TOTAL	100%

**Core Curriculum Competencies (CCCs are the competencies every graduate will develop):**

1. Apply clear and effective communication skills.
2. Use critical thinking to solve problems.
3. Collaborate to achieve a common goal.
4. Demonstrate professional and ethical conduct.
5. Use information literacy for effective vocational and/or academic research.
6. Apply quantitative reasoning and/or scientific inquiry to solve practical problems.

**Program Graduate Competencies (PGCs are the competencies every graduate will develop specific to his or her major):**

1. Estimate material quantities for technical projects.
2. Interpret and compile construction drawings and project manual.
3. Employ project management skills as they relate to constructions projects.
4. Use productivity software to develop a project record.
5. Demonstrate a commitment to quality, timeliness, professional development and continuous improvement.

**Disabilities Support Statement:**

The College is committed to providing reasonable accommodations for students with disabilities. Students are encouraged to schedule an appointment with the campus Disabilities Support Counselor to request an accommodation needed due to a disability. A listing of campus Disabilities Support Counselors and contact information can be found at the [disabilities services - https://www.dtcc.edu/disabilitysupport](https://www.dtcc.edu/disabilitysupport) web page or visit the campus Advising Center.