

ITT Technical Institute

DT1120

Reading Construction Documents

Onsite and Online Course

SYLLABUS

Credit hours: 4.5

Contact/Instructional hours: 56 (34 Theory Hours, 22 Lab Hours)


Prerequisite(s) and/or Corequisite(s):

None.

Course Description:

This course presents a study of reading and understanding construction documents.

Students will be exposed to the documents utilized in the architectural and construction industry.



COURSE SUMMARY

COURSE DESCRIPTION

This course presents a study of reading and understanding construction documents. Students will be exposed to the documents utilized in the architectural and construction industry.

MAJOR INSTRUCTIONAL AREAS

1. Working drawings including lines, dimensions, scales, and conventions
2. Plan drawings including framing, roof, floor, and foundations
3. Exterior and interior sections
4. Building sections
5. Door and window schedules
6. Application to residential and commercial construction

COURSE LEARNING OBJECTIVES

By the end of this course, you should be able to:

1. Describe the various aspects of architectural plans.
2. Explain the fundamentals of plan drawings.
3. Explain essential elements of residential plans.
4. Describe the fundamentals of reading a residential construction plan.
5. Demonstrate how to read electrical, heating, and mechanical architectural plans.
6. Explain the fundamentals of reading a commercial plan.

COURSE OUTLINE

MODULE 1: READING TECHNICAL DRAWINGS

COURSE LEARNING OBJECTIVES COVERED

- Describe the various aspects of architectural plans.
- Explain the fundamentals of plan drawings.
- Describe the fundamentals of reading a residential construction plan.

TOPICS COVERED

- Basic Technical Drawing
- Axonometric and Oblique Pictorial Drawings
- Construction Terms

MODULE LEARNING ACTIVITIES	GRADED	OUT-OF-CLASS TIME
Reading: <i>Architectural Drawing and Light Construction, Chapters 6 and 7, Appendix A, Appendix D, and Glossary of Construction Terms</i>	No	7 hrs
Lesson: Study the lesson for this module.	No	1 hr
Discussion: Participate in the discussion titled "Are Plans Important?"	Yes	N/A
Lab Preparation Time: Research online to find out more about how pictorial drawings can help display 3D images in a 2D format.	No	2 hrs
Lab: Complete the lab titled "Reading Pictorial Drawings."	Yes	N/A

Total Out-Of-Class Activities: 10 Hours

MODULE 2: READING PLANS FOR FRAME, ROOF, AND FOUNDATION

COURSE LEARNING OBJECTIVES COVERED

- Describe the various aspects of architectural plans.
- Explain the fundamentals of plan drawings.
- Explain essential elements of residential plans.
- Describe the fundamentals of reading a residential construction plan.
- Explain the fundamentals of reading a commercial plan.

TOPICS COVERED

- Principles of Light Construction
- Framing
- Roofing
- Floor
- Foundation Plans

MODULE LEARNING ACTIVITIES	GRADED	OUT-OF-CLASS TIME
Reading: <i>Architectural Drawing and Light Construction, Chapter 12 and Chapter 14 sections 14.3 and 14.8</i>	No	15 hrs
Lesson: Study the lesson for this module.	No	2 hrs
Discussion: Participate in the discussion titled “Houses vs. Commercial Construction.”	Yes	N/A
Analysis: Submit the analysis titled “Floor and Foundation Types.”	Yes	2 hrs
Lab 1: Complete the lab titled “Light Framing.”	Yes	N/A
Lab 2: Complete the lab titled “Identifying Doors.”	Yes	N/A

Total Out-Of-Class Activities: 19 Hours

MODULE 3: READING DRAWINGS OF EXTERIOR AND INTERIOR SECTIONS**COURSE LEARNING OBJECTIVES COVERED**

- Describe the various aspects of architectural plans.
- Explain the fundamentals of plan drawings.
- Explain essential elements of residential plans.
- Describe the fundamentals of reading a residential construction plan.
- Demonstrate how to read electrical, heating, and mechanical architectural plans.

TOPICS COVERED

- Wall Detail Drawings
- Basic Residential Planning

MODULE LEARNING ACTIVITIES	GRADED	OUT-OF-CLASS TIME
Reading: <i>Architectural Drawing and Light Construction, Chapter 14 section 14.2 and Chapter 15</i>	No	6 hrs
Reading: ITT Tech Virtual Library> Basic Search> <ul style="list-style-type: none"> ○ Wicked Details ○ Quality Control by Rydeen, James 	No	2 hrs
Lesson: Study the lesson for this module.	No	2 hrs
Discussion: Participate in the discussion titled "Detail Drawings."	Yes	N/A
Lab Preparation Time: Read the textbook readings and identify the 17 components in the SILL drawing.	No	1 hr
Lab: Complete the lab titled "Wall Details."	Yes	N/A
Analysis: Submit the analysis titled "Interior Space Design."	Yes	2 hrs
Quiz: Prepare for Quiz 1.	No	2 hrs
Quiz: Take Quiz 1.	Yes	N/A

Total Out-Of-Class Activities: 15 Hours

MODULE 4: BUILDING DETAILS AND COMPONENTS**COURSE LEARNING OBJECTIVES COVERED**

- Explain essential elements of residential plans.
- Describe the fundamentals of reading a residential construction plan.
- Demonstrate how to read electrical, heating, and mechanical architectural plans.

TOPICS COVERED

- Fireplace and Stair Details
- Insulating Methods

MODULE LEARNING ACTIVITIES	GRADED	OUT-OF-CLASS TIME
Reading: <i>Architectural Drawing and Light Construction, Chapter 14 sections 14.5, 14.6, 14.7, 14.8, and The 21st Century Townhouses: the NAHB Research Center Home Program</i>	No	5.5 hrs
Reading: ITT Tech Virtual Library> Basic Search> <ul style="list-style-type: none"> ○ “Choose a Fireplace for Beauty and Warmth” ○ “Fireplaces that Can Heat Your Home and Cook Your Meals” Reading: ITT Tech Virtual Library> School of Study> School of Drafting and Design> Databases> EbscoHost Academic Search Elite> “Building Products”	No	3 hrs
Lesson: Study the lesson for this module.	No	2 hrs
Discussion: Participate in the discussion titled “Fireplaces in Modern Homes.”	Yes	N/A
Analysis: Submit the analysis titled “Insulation Approaches.”	Yes	2 hrs
Lab 1: Complete the lab titled “Stairway Calculation.”	Yes	N/A
Lab 2 Preparation Time: Read the relevant reading in the textbook before attempting the lab.	No	1.5 hrs
Lab 2: Complete the lab titled “Electrical, Heating, and Mechanical Drawings.”	Yes	N/A
Quiz: Prepare for Quiz 2.	No	2 hrs

Total Out-Of-Class Activities: 16 Hours

MODULE 5: READING DOOR AND WINDOW SCHEDULES**COURSE LEARNING OBJECTIVES COVERED**

- Explain essential elements of residential plans.
- Describe the fundamentals of reading a residential construction plan.
- Demonstrate how to read electrical, heating, and mechanical architectural plans

TOPICS COVERED

- Drafting Expression
- Windows and Door Details and Schedules

MODULE LEARNING ACTIVITIES	GRADED	OUT-OF-CLASS TIME
Reading: <i>Architectural Drawing and Light Construction, Chapter 4 and Chapter 14 sections 14.4 and 14.5</i>	No	4 hrs
Reading: ITT Tech Virtual Library> Basic Search> <ul style="list-style-type: none"> ○ Independent Living Makes Headway in the Realm of Residential and Light Commercial Doors ○ Reclaimed Wood Windows & Doors ○ Windows to the World, Doors to Space: The Psychology of Space Architecture 	No	2.5 hrs
Lesson: Study the lesson for this module.	No	2 hrs
Discussion: Participate in the discussion titled "Windows and Doors."	Yes	N/A
Analysis: Submit the analysis titled "Drawing Expressions."	Yes	2 hrs
Lab Preparation Time: Research window schedules on the Internet to find suitable windows for your project.	No	1.5 hrs
Lab: Complete the lab titled "Door and Window Design."	Yes	N/A
Quiz: Take Quiz 2.	Yes	N/A
Final Exam: Prepare for the final exam.	No	5 hrs

Total Out-Of-Class Activities: 17 Hours

MODULE 6: IDENTIFYING CONSTRUCTION COMPONENTS**COURSE LEARNING OBJECTIVES COVERED**

- Describe the various aspects of architectural plans.
- Explain the fundamentals of plan drawings.
- Explain essential elements of residential plans.
- Describe the fundamentals of reading a residential construction plan.
- Demonstrate how to read electrical, heating, and mechanical architectural plans.
- Explain the fundamentals of reading a commercial plan.

TOPICS COVERED

- Component Identification in Construction Drawings

MODULE LEARNING ACTIVITIES	GRADED	OUT-OF-CLASS TIME
Reading: <i>Architectural Drawing and Light Construction, Chapters 18, 19, and 20</i>	No	8.5 hrs
Lesson: Study the lesson for this module.	No	1.5 hrs
Analysis: Submit the analysis titled "Solar Design Features."	Yes	2 hrs
Lab: Complete the lab titled "Commercial Building Plans."	Yes	N/A
Final Exam: Take the final exam.	Yes	N/A

Total Out-Of-Class Activities: 12 Hours

EVALUATION AND GRADING

EVALUATION CRITERIA

The graded assignments will be evaluated using the following weighted categories:

CATEGORY	WEIGHT
Discussion	10%
Lab	35%
Quiz	10%
Analysis	20%
Final Exam	25%
TOTAL	100%

GRADE CONVERSION

The final grades will be calculated from the percentages earned in the course, as follows:

GRADE	PERCENTAGE
A (4.0)	90-100%
B+ (3.5)	85-89%
B (3.0)	80-84%
C+ (2.5)	75-79%
C (2.0)	70-74%
D+ (1.5)	65-69%
D (1.0)	60-64%
F (0.0)	<60%

LEARNING MATERIALS AND REFERENCES

REQUIRED RESOURCES

COMPLETE TEXTBOOK PACKAGE

- Grau, P. A., Muller, E. & Fausett, J. (2009). *Architectural Drawing and Light Construction (8th ed.)*. Upper Saddle River, NJ: Pearson.

RECOMMENDED RESOURCES

- Books and Professional Journals
 - Dimensions: <https://taubmancollege.umich.edu/architecture/publications/dimensions>
 - Perspecta: <http://architecture.yale.edu/school/publications/perspecta>
- Professional Associations
 - The American Institute of Architects: <http://www.aia.org/>
 - The Association of Architecture Organizations: <http://www.aanetwork.org/>

ITT Tech Virtual Library (accessed via Student Portal | <https://studentportal.itt-tech.edu>)

- Basic Search>
 - Gulland, J. (2003). Choose a Fireplace for Beauty and Warmth. *Mother Earth News*, (200), 90-99.
 - Jeld-Wen. (2012). Reclaimed Wood Windows & Doors *Architectural Record*, 200(6), 43.
 - Lentz, L. C. (2008). Independent Living Makes Headway in the Realm of Residential and Light Commercial Doors. *Architectural Record*, 196(5), 109.
 - Newton, C. (2006). WICKED DETAILS. *Architecture Australia*, 95(3), 97-100.
 - Rydeen, J. E. (2004). Quality Control. *American School & University*, 77(2), 44.
 - Vivian, J. (1994). Fireplaces that Can Heat Your Home and Cook Your Meals. *Mother Earth News*, (146), 38.
 - Volger, A, Jorgensen, J. (2005). Windows to the World, Doors to Space: The Psychology of Space Architecture. *Leonardo*, 38(5), 390-399.
- School of Study> School Of Drafting and Design> Databases> EbscoHost Academic Search Elite>
 - CONMOTO J. Wagner GmbH. (2010). Building Products. *Interior Design*, 201-208.

- Other References

- *How to Read House Plans:* <http://home.howstuffworks.com/home-improvement/construction/planning/how-to-read-house-plans.htm>

INSTRUCTIONAL METHODS AND TEACHING STRATEGIES

The curriculum employs a variety of instructional methods that support the course objectives while fostering higher cognitive skills. These methods are designed to encourage and engage you in the learning process in order to maximize learning opportunities. The instructional methods include but are not limited to lectures, collaborative learning options, use of technology, and hands-on activities.

To implement the above-mentioned instructional methods, this course uses several teaching strategies, such as research-based discussions that enable you to research, criticize, and take a stand on different aspects of the construction industry. You can also use this discussion to share best practices, tips, and solutions with your classmates. The lessons in this course will focus on enabling you to read construction documents and identify the various components that go into construction drawings for both residential and commercial plans.

Your progress will be regularly assessed through a variety of assessment tools including discussions, exercises, analysis, quizzes, and final exam.

OUT-OF-CLASS WORK

For purposes of defining an academic credit hour for Title IV funding purposes, ITT Technical Institute considers a quarter credit hour to be the equivalent of: (a) at least 10 clock hours of classroom activities and at least 20 clock hours of outside preparation; (b) at least 20 clock hours of laboratory activities; or (c) at least 30 clock hours of externship, practicum or clinical activities. ITT Technical Institute utilizes a “time-based option” for establishing out-of-class activities which would equate to two hours of out-of-class activities for every one hour of classroom time. The procedure for determining credit hours for Title IV funding purposes is to divide the total number of classroom, laboratory, externship, practicum and clinical hours by the conversion ratios specified above. A clock hour is 50 minutes.

A credit hour is an artificial measurement of the amount of learning that can occur in a program course based on a specified amount of time spent on class activities and student preparation during the program course. In conformity with commonly accepted practice in higher education, ITT Technical Institute has institutionally established and determined that credit hours awarded for coursework in this program course (including out-of-class assignments and learning activities

described in the “Course Outline” section of this syllabus) are in accordance with the time-based option for awarding academic credit described in the immediately preceding paragraph.

ACADEMIC INTEGRITY

All students must comply with the policies that regulate all forms of academic dishonesty or academic misconduct. For more information on the academic honesty policies, refer to the Student Handbook and the Course Catalog.

INSTRUCTOR DETAILS

Instructor Name	
Office Hours	
Contact Details	

(End of Syllabus)