

Alpena Community College
Alpena Community College Industrial Department

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1. Course Title: **Construction Technology II** Alpha/Numeric: **CST 102**
2. Course Restrictions: **None**
3. Co-requisites: **None**
4. Prerequisites: **None**
5. Reading Level Recommendation: **College level reading ability**
6. Course Description: (as it would appear in the college catalog)

This course is a study of the principles of Construction Technology. This course applies the concepts of Modern Carpentry, engineering and technology utilizing the framework of Green and Sustainability to Residential Construction.

7. Required Course Materials:

Modern Carpentry, Essential Skills for the Building Trades. By Willis H. Wagner and Howard Bud Smith, Published by the Goodheart-Willcox Company Inc., Tinley Park, Illinois (2008) ISBN 978-1-59070-648-0

8. Other requirements and materials for the course:

Business Case Studies and other handouts during the semester.

DVD’s and Powerpoint’s will be shown in class on related topics.

On-line course will receive the same materials.

9. Course Objectives and Student Learning:

Upon completion of this course, the student will be able to:

1. Demonstrate an understanding of Residential Carpentry.
2. Define various types of Green technology applications.
3. Apply the principles of Green Building and Sustainability to lot design and layout.
4. Implement engineering and technology focus on high performance building..
5. Apply the concepts of Green framing and energy efficiency.
6. Describe the principle of building science in residential building.
7. Evaluate and judge various levels of quality carpentry and technology.
8. Describe the concepts of Green design and engineering in residential building.
9. Explain the Global concept of Green Building and Sustainability.
10. Examine and report on casework and problems in Residential Building.
11. Describe and explain the process of Residential Building.
12. Describe the different methods of plumbing, mechanical and electrical systems.
13. Identify the safety requirements for residential building.
14. Demonstrate an understanding of finish materials and methods.

10. Topics/Course Outline:

Week 1: Finish Flooring

Week 2: Stair Construction

Week 3: Doors and Interior Trim (Case 1)

Week 4: Cabinetry

Week 5: Painting, Finishing and Decorating

Week 6: Chimneys and Fireplaces (Case 2)

*******Test One*******

Week 7: Post and Beam Construction

Week 8: Systems built Housing (Case 3)

Week 9: Passive Solar Construction

Week 10: Remodeling, Renovating and Repair (Case 4)

Week 11: Building Decks and Porches

*******Test Two*******

Week 12: Electrical Wiring (Case 5)

Week 13: Plumbing Systems

Week 14: Heating, Ventilating, and Air Conditioning

Week 15: Scaffolds and Ladders (Case 6)

Week 16: Carpentry-A Career Path and Appendix A & B

Review Casework and Final Review

*******FINAL EXAM*******

11. Student Evaluation:

Quizzes-13 quizzes given during the semester 1 point each question=	150 points
Cases- 6 cases graded at 20 points each	= 120 points
3 Tests- all 3 tests, including the final exam are 150 points each	= 450 points

Total Points for the Semester	720 points
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Grading Scale:

A	93% and above	C	73% - 76%
A-	90% - 92%	C-	70% - 72%
B+	87% - 89%	D+	67% - 69%

B	83% - 86%	D	63% - 66%
B-	80% - 82%	D-	60% - 62%
C+	77% - 79%	Below 60%	Fail

12. Additional Resource Materials/Bibliography:

Doppelt, Robert. (2010). The Power of Sustainability Thinking. Stylus Publishers, Sterling, Virginia.

Epstein, Matt and John Elkington. (2008) Making Sustainability Work: Best Practices in Managing and Measuring Corporate Social, Environmental, and Economic Impacts. Berrett-Koehler Publishers, San Francisco, California.

Green Building and LEED Core Concepts. 2d Edition published by the U.S. Green Building Council, Washington, D. C. ISBN: 978-1-932444—50-6.

Hitchcock, Darcy and Marsha Willard. (2008) The Step-By-Step Guide to Sustainability Planning. Stylus Publishing, Sterling, Virginia.

ISO 14040 “Environment Management-Life Cycle Assessment-Principles and Framework”. Geneva, Switzerland (2007)

Krigger, John and Dorsi, Chris. (2009) Residential Energy-Cost Savings and Comfort for Existing Buildings. 5th Edition. Published by Saturn Resource Management Inc. ISBN 10: 1-880120-09-7.

Krosinsky, Cary and Nick Robing. (2008), Sustainability Investing. Stylus Publishing, Sterling, Virginia.

Bibliography Continued:

LEED: “ Building Ratings System for New Construction and Major Renovations” Version 3.1: U.S. Green Building Council. (2009)

Matthew, R.A. (2010) Global Environmental Change and Human Security. MIT Press.

McKenny, M. Schock, R. and Yonavjak, L. (2007) Environmental Science: Systems Solutions, 4th Edition. Jones and Bartlett Publishers.

Qian, S.S. (2010) Environmental and Ecological Statistics. CRC Press.

Schock, R.M. (2008) Case Studies in Environmental Science. Jones and Bartlett Publishers

Wolfson, Richard (2012) Energy, Environment, and Climate. 2d Edition
Published by W.W. Norton and Company Inc. ISBN 978-0-393-91274-6.

Various Cases by author and publication included in their entirety in the required Coursework.

Completed by: Bruce Frost