

Articulation Agreement

2017-2018

University Alaska Fairbanks

Interior Alaska Campus

4180 Gelst Road

Fairbanks, Alaska 99709

Galena City School District

PO Box 299

Galena, Alaska 99741

Purpose:

In addition to the current Tech Prep Agreement between University of Alaska Fairbanks and Galena City School District, we have agreed to add the following course that is within UAF Construction Trades Technology (CTT) Program:

1. Galena City School District will follow a UAF CTT curriculum in coordination with the administration and faculty of the University of Alaska Fairbanks pertaining to the following courses on the course below.
2. Galena City School District will teach for the attached outcomes.
3. The attached syllabus will follow the learning outcomes of the university-approved course listed.

UAF Course Number	UAF Course Title	Number of UAF Credits	Galena City School District Course Title
CTT 106	Construction Mathematics	3 credits	Construction Mathematics

1. The attached syllabus will be followed.
2. Galena City School District will provide necessary support for students to be successful in this course which may include computer support, reference books and academic assistance.
3. Interior Alaska Campus will process the registrations.
4. In order to receive concurrent credit, the student will register for the Tech Prep class during the semester in which the competencies will be completed.

Approvals:

Michael Hirt
Construction Trades Technology
Program Head
Interior Alaska Campus
University of Alaska Fairbanks

 12-19-17

Signature

Date

Bryan Uher
Interim Director
University of Alaska Fairbanks
Interior Alaska Campus
Fairbanks, Alaska

 12/19/17

Signature

Date

Chris Reitan
Superintendent
Galena City School District
Galena, Alaska

 2/1/18

Signature

Date

Mary Pete

Dean-College of Rural and

Community Development

P.O. Box 6500

University of Alaska Fairbanks

Fairbanks, AK 99775-6500

DocuSigned by:

Mary Pete

January 16, 2018

647D68284D9248B

Signature

Date

Susan Henrichs, Provost

P.O. Box 7580

University of Alaska Fairbanks

Fairbanks, AK 99775-7580

Susan Henrichs 1/31/18

Signature

Date

CONSTRUCTION TECHNOLOGY CORE COURSE SYLLABUS

Course Title: Construction Mathematics
Course No: CTT 106
Credits: 3 (45 contact hours) 45 lecture & 0 lab
Prerequisites: None
Instructor: TBD
Location: TBD
Dates: TBD
Times: TBD

Office hours/tutoring: Instructor will post upon course starting

Course Description:

This course introduces basic mathematical procedures commonly used in the construction and maintenance crafts, such as, multiplication, subtraction, addition, division, working with fractions, and measuring areas, volume, and capacity of shapes.

Learning Objectives:

Upon completion of the course the participant will be able to:

1. Add, subtract, multiply, and divide whole numbers, with and without a calculator.
2. Use a standard ruler and a metric ruler to measure.
3. Add, subtract, multiply, and divide fractions.
4. Recognize and use metric units of length, weight, volume, and temperature.
5. Recognize some of the basic shapes used in the construction industry and apply basic geometry to measure them.
Convert fractions to decimals and decimals to fractions.
6. Use the framing square.
7. Layout various rafters and understand principles of stair layout.
8. Develop basic cost estimating process.

Course Content:

1. Whole Numbers.
2. Adding Whole Numbers.
3. Subtracting Whole Numbers.
4. Working with Measurements.
5. Fractions
6. Decimals.
7. Conversion Process.
8. Introduction to the Metric System.
9. Introduction to Construction Geometry.
10. Ratio and Proportions.
11. Introduction to Framing Square.
12. Roof I – Common Rafters.
13. Roof II – Hip Rafters – Valley Rafters – Jack Rafters.

- 14. Stair Layout.
- 15. The Estimating Process.

Method of Grading for Course:

Pass/fail _____ Letter Grade X Other _____ (explain)

Grade will be based on the following:

- Attendance 10%
- Exam/Quiz Scores..... 50%
- Homework...30%
- Final Exam.....10%

Course Grading Requirements:

A letter grade will be issued for participants who successfully complete the course. Written tests will be given at the end of each section to test the knowledge of the participant.

- Letter grade criteria: 91 to 100% = A letter grade
- 81 to 90% = B letter grade
- 71 to 80% = C letter grade
- 60 to 70% = D letter grade
- Less than 59% = F letter grade

UAF Disabilities Services for Distance Students:

I encourage students with documented disabilities, including nonvisible disabilities such as chronic diseases, learning disabilities, head injury, attention deficit/hyperactive disorder, psychiatric disabilities, to discuss with me, after class or during my office hours, possible reasonable accommodations.

For more information, please visit <http://www.uaf.edu/disability/> or contact a student affairs staff person at your nearest local campus.

You can also contact Disability Services on the Fairbanks Campus at (907) 474-5655 or TTY (907) 474-1827, uaf-disabilityservices@alaska.edu

Facilities Required:

Classroom capable of seating 15 participants with comfortable chairs and work tables/desks, overhead projector/LCD projector, wipe boards, TV Monitor and VCR, marking pencils, and standard instructional equipment.

Lab Supplies Required:

None required

Textbook & Materials

Mathematics for Carpentry and Construction Trades 2nd edition. Alfred P. Webster and Kathryn B. Judy, Published by Prentice Hall or equivalent

Course handout related to topics covered

Topic Schedule:

CTT 106 Class Schedule

Day 1

Introductions

Pre-Test

1.1 Place Value: In class: p. 2 all

1.2 Rounding: In class p. 4 odds

1.3 Order of Operations: In class: p. 6 odds p. 6-7 odds

2.1 Equivalent Fractions In class: p. 16 odds p. 17 odds p. 19 odds p. 20 odds

Homework:

p. 4: 2-10 evens p. 6-8: 2-22 evens p. 16: 2-6 even p. 19: 2-6 even p. 20: 2-6 even

Day 2

Quiz #1 on Rounding, Place Value, Order of Operations

Reading a ruler

2.2 LCD & Equiv. Fractions In class p. 23-24 odds p. 25-26 odds

2.3 Addition of Fractions In class: p. 29-30 odds

Homework: p. 25-26: 2-20 even p. 29-30: 2-18 even

Day 3

Quiz #2 on Equivalent Fractions and Fraction Addition

2.4 Subtraction of Fractions p 34-36 odds and various worksheets

Homework: p. 34-35 2-20 evens

Day 4

Quiz #3 on Subtraction of Fractions

2.4 Mult. of Fractions: p. 40 odds and various worksheets

2.5 Div. of Fractions p. 43 odds and various worksheets

Homework: p. 40: 2-20 even p. 43: 2-20 even

Day 5

Quiz #4 on Mult. and Div. of Fractions

3.1 Place Value & Rounding Decimals: In class p. 53 odds

3.2 Addition of Decimals p. 54-55 odds

3.3 Subtraction of Decimals p. 56-7 odds

Test #1 over ch. 1 & 2

Homework: p. 53: 2-12 evens p. 54-55: 2-20 evens p. 56-57: 2-20 evens

Day 6

Quiz #5 on Dec. place value, adding and subtracting decimals

3.4 Multiplying decimals p. 59 odds

3.5 Dividing decimals p. 61 odds

3.6 Mult. & Div. by powers of ten p. 63 odds

3.7 Dec. & Fraction conversions p. 67 odds

Homework: p. 59: 2-12 evens p. 61: 2-14 evens p. 63: 8-12 evens p. 67: 2-20 evens

Day 7

Test #2 on ch. 3 – Decimals

4.1 Linear Measure p. 77 odds p. 79 odds

4.2 Operations with mixed units p. 81 odds p. 83-84 odds

4.4 Area and Volume conversions

Homework: p. 77: 2-10 even p. 79: 2-12 even p. 81: 2-12 even p. 83-4: 2-12 even

Day 8

Quiz #6 on ch. 4

5.1 Ratio p. 98-9 odds

5.2 Proportions p. 104-5 odds

7.3 The Pythagorean Theorem square root worksheet p. 134 odds p. 136 odds

7.4 Special Right Triangles p. 139-141 odds

Homework:

p. 98: 2,4,6,12,18 p. 104: 2-12 even + 22,24 p. 136: 2-10 even p. 140: 2-10 even

Day 9

Quiz #7 on ch. 5 & 7

7.5 Perimeters and Areas of Triangles p. 144-7 odds

8.1 Quadrilaterals p. 156-7 odds

8.2 Circles p. 165-7 odds

8.4 Odd shapes p. 174-177 odds

Homework:

p. 144: 2-10 even p. 156: 2-10,14-20 even p. 165: 2-8 even p. 174: 2,4

Day 10

9.1 Rectangular solids p. 184-5 odds

9.2 Cylinders and cones p. 189-190 odds

Final Exam

Professional Conduct:

The following ground rules apply to all students and are designed to ensure a classroom environment conducive to learning for all students:

- **Come to class awake, sober and alert. The use of alcohol, drugs or tobacco products is not allowed in the classroom. Do not attend class with the smell of or under the influence of drugs or alcohol.**
- **If you come to class impaired by drugs or alcohol you will be asked to leave the class for the first offense, and your behavior will be documented. If a**

second offense occurs, you will be asked to leave the class immediately and your behavior will be referred to UAF Student Conduct for alleged policy violations. Additionally, you may be interim restricted from returning to class pending the outcome of the student conduct process. Students found responsible for policy violations may be removed from the course.

Students who engage in disruptive classroom behavior will be asked to leave the classroom for the first offense, and the behavior will be documented. If the disruptive behavior continues, it will be reported to UAF Student Conduct.

- **Disruptive behavior includes, but is not limited to, arriving late to class without explanation; leaving class early without explanation; sleeping in class; use of cell phone during instruction except for emergency purposes; being under the influence of drugs or alcohol; harassment, bullying, and verbal or physical threats to another student or to the instructor.**