MATH R100: MATHEMATICS FOR CAREER EDUCATION

Originator
sdavis

College
Oxnard College

Discipline (CB01A)
MATH - Mathematics

Course Number (CB01B)
R100

Course Title (CB02)
Mathematics for Career Education

Banner/Short Title
Math for Career Ed.

Credit Type
Credit

Start Term
Fall 2023

Catalog Course Description
This mathematics course is designed to develop the computational skills
needed in many Career Education programs, like Air Conditioning and Refrigeration, Auto Body and Fender Repair, Automotive
Technology, Culinary Arts, or Restaurant Management. Topics include geometry, measurement, number sense, estimation, basic
statistics, trigonometric functions, and algebraic thinking.

Additional Catalog Notes
Students are advised to review the requirements for their program and/or consult with a college counselor or CE Faculty to ensure
this course is appropriate for their educational goals.

Taxonomy of Programs (TOP) Code (CB03)
1701.00 - Mathematics, General

Course Credit Status (CB04)
D (Credit - Degree Applicable)

Course Transfer Status (CB05) (select one only)
B (Transferable to CSU only)

Course Basic Skills Status (CB08)
N - The Course is Not a Basic Skills Course

SAM Priority Code (CB09)
E - Non-Occupational

Course Cooperative Work Experience Education Status (CB10)
N - Is Not Part of a Cooperative Work Experience Education Program

Course Classification Status (CB11)
Y - Credit Course

Educational Assistance Class Instruction (Approved Special Class) (CB13)
N - The Course is Not an Approved Special Class

Course Prior to Transfer Level (CB21)
Y - Not Applicable

Course Noncredit Category (CB22)
Y - Credit Course

Funding Agency Category (CB23)
Y - Not Applicable (Funding Not Used)

Course Program Status (CB24)
1 - Program Applicable

General Education Status (CB25)
B - Satisfies Math/Quantitative Reasoning req (CSUGE-B B4, IGETC 2, or 4-yr)

Support Course Status (CB26)
N - Course is not a support course

Field trips
Will not be required

Grading method
(L) Letter Graded

Alternate grading methods
(O) Student Option- Letter/Pass
(P) Pass/No Pass Grading

Does this course require an instructional materials fee?
No

Repeatable for Credit
No

Is this course part of a family?
No

Units and Hours

Carnegie Unit Override
No

In-Class

Lecture
Minimum Contact/In-Class Lecture Hours
52.5
Maximum Contact/In-Class Lecture Hours
52.5

Activity

Laboratory

Total in-Class

Total in-Class
Total Minimum Contact/In-Class Hours
52.5

Total Maximum Contact/In-Class Hours
52.5

Outside-of-Class

Internship/Cooperative Work Experience

Paid

Unpaid

Total Outside-of-Class

Total Outside-of-Class
Minimum Outside-of-Class Hours
105
Maximum Outside-of-Class Hours
105

Total Student Learning

Total Student Learning
Total Minimum Student Learning Hours
157.5
Total Maximum Student Learning Hours
157.5

Minimum Units (CB07)
3
Maximum Units (CB06)
3

Prerequisites
Course taught at the level of intermediate algebra or placement as determined by the college's multiple measures assessment process.

Entrance Skills
Entrance Skills
Algebraic fluency with expressions and equations. Understanding functions and graphs.

Requisite Justification
Requisite Type
Prerequisite

Requisite
Course taught at the level of intermediate algebra or placement as determined by the college's multiple measures assessment process.

Requisite Description
Course in a sequence

Level of Scrutiny/Justification
Content review

Student Learning Outcomes (CSLOs)

	Upon satisfactory completion of the course, students will be able to:
1	Employ geometry to analyze and solve application problems, e.g., use geometry to find the area of a room.
2	Employ trigonometry to analyze and solve application problems, e.g., use ratios to find an angle.

Course Objectives

	Upon satisfactory completion of the course, students will be able to:
1	Use critical thinking to establish relationships between skilled trades challenges and mathematical processes needed to meet these challenges.
2	Generate an accurate estimate of the amount of material needed for a job and the material's cost.
3	Develop proficiency with common skilled trades fractions.
4	Understand the role of trigonometry in skilled trades fields.
5	Understand and properly use units of measure.
6	Understand different measures of center and why each are used.
7	Read and interpret different graphs of data.
8	Consider descriptive statistics when making decisions.

Course Content

Lecture/Course Content

1. The value and importance of a strong foundation in mathematics.
2. The recognition and use of proper algebraic procedures as important problem-solving tools.
3. Measurement theory, including usage of rounding, estimating, converting measurement units, and dimensional analysis.
4. Understanding relationships among different representations of the same value (such as fraction, decimal, percent).
5. Scaling and variation (such as relationships between scaled models or drawings and their real-world structures).
6. Measurable attributes of 2-dimensional and 3-dimensional objects (such as perimeter, area, surface area, and volume).
7. Angles and their measure.
8. The relationship between right triangles and the Pythagorean Theorem.
9. The application of trigonometric functions and inverse trigonometric functions to real-world situations.
10. Measures of center (such as mean, median, mode).
11. The connection between graphs and real-world data.

Laboratory or Activity Content

n/a

Methods of Evaluation

Which of these methods will students use to demonstrate proficiency in the subject matter of this course? (Check all that apply):

Written expression
Problem solving exercises
Skills demonstrations

Methods of Evaluation may include, but are not limited to, the following typical classroom assessment techniques/required assignments (check as many as are deemed appropriate):

Computational homework
Essay exams
Group projects
Individual projects
Journals
Mathematical proofs
Oral presentations
Problem-solving exams
Problem-solving homework
Reports/papers
Research papers
Skills demonstrations
Skills tests or practical examinations

Written analyses
Written homework

Instructional Methodology

Specify the methods of instruction that may be employed in this course

Audio-visual presentations
Class activities
Class discussions
Collaborative group work
Computer-aided presentations
Demonstrations
Distance Education
Group discussions
Guest speakers
Instructor-guided use of technology
Internet research
Lecture
Modeling
Small group activities
Web-based presentations

Representative Course Assignments

Writing Assignments

1. A research paper on math processes and skilled trade challenges may form a component of this course.

Critical Thinking Assignments

1. Students should be able to analyze numerical or categorical data and make inferences when making decisions.

Reading Assignments

1. Students read textbook selections on topics such as estimation, geometry, or trigonometry.

Skills Demonstrations

1. Students will need to practice the methods and procedures used in class when completing their problem-solving exercises.

Problem-Solving and Other Assignments (if applicable)

1. Students will be required to learn how to input and analyze data on a graphing calculator and statistical software.

Outside Assignments

Representative Outside Assignments

Homework assigned from the textbook
Projects related to a topic covered in class, may include student presentations
Essays on mathematical topics may be assigned

Articulation

Equivalent Courses at other CCCs

College	Course ID	Course Title	Units
College of the Redwoods	Math 10	Contemporary Mathematics for Technical Fields	3

District General Education

A. Natural Sciences

B. Social and Behavioral Sciences

C. Humanities

D. Language and Rationality

E. Health and Physical Education/Kinesiology

F. Ethnic Studies/Gender Studies

CSU GE-Breadth

Area A: English Language Communication and Critical Thinking

Area B: Scientific Inquiry and Quantitative Reasoning

B4 Mathematical/Quantitative Reasoning
Proposed

Area C: Arts and Humanities

Area D: Social Sciences

Area E: Lifelong Learning and Self-Development

Area F: Ethnic Studies

CSU Graduation Requirement in U.S. History, Constitution and American Ideals:

IGETC

Area 1: English Communication

Area 2A: Mathematical Concepts & Quantitative Reasoning

Area 3: Arts and Humanities

Area 4: Social and Behavioral Sciences

Area 5: Physical and Biological Sciences

Area 6: Languages Other than English (LOTE)

Textbooks and Lab Manuals
Resource Type
Textbook

Classic Textbook
Yes

Description
Saunders and Carman (2020). *Mathematics for the Trades: A Guided Approach 10th Edition*. Pearson. ISBN-13: 9780137400034.

Library Resources

Sufficient Library Resources exist
Yes

Distance Education Addendum

Definitions

Distance Education Modalities
Hybrid (1%−50% online)
Hybrid (51%−99% online)
100% online

Faculty Certifications

Faculty assigned to teach Hybrid or Fully Online sections of this course will receive training in how to satisfy the Federal and state regulations governing regular effective/substantive contact for distance education. The training will include common elements in the district-supported learning management system (LMS), online teaching methods, regular effective/substantive contact, and best practices.
Yes

Faculty assigned to teach Hybrid or Fully Online sections of this course will meet with the EAC Alternate Media Specialist to ensure that the course content meets the required Federal and state accessibility standards for access by students with disabilities. Common areas for discussion include accessibility of PDF files, images, captioning of videos, Power Point presentations, math and scientific notation, and ensuring the use of style mark-up in Word documents.
Yes

Regular Effective/Substantive Contact

Hybrid (1%−50% online) Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	Regular use of asynchronous discussion boards encourages various types of interaction and critical thinking skills among all course participants. Questions and topics posed will allow students to discuss, compare and contrast, identify, and analyze elements of the course outcomes. Other discussion boards may be used for Q&A and general class discussion by students and instructor to facilitate student success and strengthen student learning outcomes.
E-mail	E-mail, class announcements and various learning management system tools such as "Message Students Who" and "Assignment comments" will be used to regularly communicate with all students on matters such as clarification of class content, reminders of upcoming assignments and/or course responsibilities, to provide prompt feedback to students on coursework to facilitate student learning outcomes, or to increase the role of an individual educator in the academic lives of a student. Students will be given multiple ways to email instructor through both the learning management system inbox and faculty provided email accounts.
Video Conferencing	Video tools such as ConferZoom may be used to provide live synchronous or asynchronous sessions with students. ADA compliance will be upheld with Closed Captioning during the session or of the recorded session. Student-to-student group meetings will also be encouraged.
Other DE (e.g., recorded lectures)	Students will watch recorded video lectures.

Hybrid (51%–99% online) Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	Regular use of asynchronous discussion boards encourages various types of interaction and critical thinking skills among all course participants. Questions and topics posed will allow students to discuss, compare and contrast, identify, and analyze elements of the course outcomes. Other discussion boards may be used for Q&A and general class discussion by students and instructor to facilitate student success and strengthen student learning outcomes.
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Other DE (e.g., recorded lectures)	Students will watch recorded video lectures

100% online Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	Regular use of asynchronous discussion boards encourages various types of interaction and critical thinking skills among all course participants. Questions and topics posed will allow students to discuss, compare and contrast, identify, and analyze elements of the course outcomes. Other discussion boards may be used for Q&A and general class discussion by students and instructor to facilitate student success and strengthen student learning outcomes.
E-mail	E-mail, class announcements and various learning management system tools such as "Message Students Who" and "Assignment comments" will be used to regularly communicate with all students on matters such as clarification of class content, reminders of upcoming assignments and/or course responsibilities, to provide prompt feedback to students on coursework to facilitate student learning outcomes, or to increase the role of an individual educator in the academic lives of a student. Students will be given multiple ways to email instructor through both the learning management system inbox and faculty provided email accounts.
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Examinations

Hybrid (1%–50% online) Modality

On campus
Online

Hybrid (51%–99% online) Modality

On campus
Online

Primary Minimum Qualification
MATHEMATICS

Review and Approval Dates

Department Chair
10/04/2022

Dean
10/04/2022

Technical Review
10/12/2022

Curriculum Committee
10/12/2022

DTRW-I
11/10/2022

Curriculum Committee
11/23/2022

Board
12/13/2022

CCCCO
12/21/2022

Control Number
CCC000635208

DOE/accreditation approval date
MM/DD/YYYY