Course Description and Outcomes

MA 104 College Algebra for the Calculus Sequence (3)

Algebra knowledge and skills for college studies: Sets and real number system; exponents and polynomials, rational and radical equations, and systems of equations; introductions to analytic geometry and functions; exponential and logarithmic functions; the binomial theorem and integer functions. Preparative course for the pre-calculus/calculus sequence required for degrees with upper division math requirements, such as biology, chemistry, data science, forensic sciences and biochemistry. Restricted to students intending a science major (biology, chemistry, biochemistry, data science, forensic science) but may be used to fulfill Track B if a student changes major out of a science major after taking the course. Not open to students with credits in MA 110, MA 210, or other higher numbered mathematics courses. *Offered every semester. Prerequisites: none, placement applies. MA102 may be required depending on placement and prior math courses.*

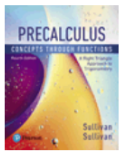
Course/Math General Education Outcomes

- **Quantitative Skills:** Students will apply basic mathematical principles needed to function effectively and develop mathematical reasoning and problem-solving skills.
- **Information Literacy**: Students will define, identify, locate, evaluate, synthesize, and present or demonstrate relevant information.

e-Textbook and Online Homework System

The online MyLab and Mastering is the required format.

Original Materials:



Precalculus: Concepts Through Functions, A Right Triangle Approach to Trigonometry 4th Edition

Author(s): Sullivan, Michael | Michael, Sullivan III

Textbook ISBN-13: 9780134686981

Series: MyLab Math

Contact Info

Sheryl Dohm
School of Natural Sciences and Mathematics
Chaminade University of Honolulu

3140 Waialae Avenue, Honolulu, HI 96816
Email

1.
    1. Canvas email: for quickest response use the email function in Canvas
    2. Regular email: sheryl.dohm@chaminade.edu

If you email me outside of office hours, please allow one-two business days for a response. (pro-hint: please please please do not wait until the last minute to seek help with course material)

3. Check for my response within a timely manner, in accordance to nature of email.

Office Phone: 808-739-8561 (pro-hint: Canvas Email is a much better means of reaching me.)
Appointments: Please see To Make an Appointment During Office Hours with Sdohm

Office Hours

Office Hours are Tuesday 1:00pm - 3:00pm, or by appointment.
Instructor will hold office hours and meetings will be held via Canvas Conference or Zoom.

Course Timeline

Week 1: 23-27 Aug

Algebra for Ch 1 (Functions and their graphs)

- MLM orientation
- Notations AR1.1
    - Write statements using algebraic symbols
    - Use the properties of equalities
    - Work with Exponents
    - Evaluate numeric expressions
- Number systems AR1.2
    - Work with sets
    - Classify numbers
- Approximations AR1.3
    - Approximate numbers
    - Use a calculator to evaluate expressions
- Properties of real numbers AR1.4
    - Find the opposite and reciprocal of a number

    - Use the distributive, commutative, or associative property to rewrite expressions
    - Determine the property of real numbers illustrated by a statement
- The real number line, add and subtract real numbers AR1.5
    - Work with the real number line
    - Find absolute values
    - Add real numbers
    - Subtract real numbers
    - Find the opposite of a number
- Multiplication of Real Numbers AR1.6
    - Multiply real numbers
    - Divide real numbers
    - Evaluate expressions with real numbers

Week 2: 30 Aug - 3 Sept

- Inequalities; Distance 1.7
    - Inequalities
    - Find distances on the real number line
    - Evaluate expressions that contain absolute values
- Constants and Variables; Mathematical Models 1.8
    - Evaluate algebraic expressions
    - Determine Domain of a variable
    - Use formulas to solve applications
- Solve linear equations A

Week 3: 6-10 Sept

- Lines F2&3
    - Graph equations by plotting the intercepts and other points where needed.
    - Plot a given point and its points of symmetry
    - Find the slope of the line passing through two points
    - Graph a line from a point and the slope of the line
    - Write the equation of a line from two points
    - Write the equation of a line parallel or perpendicular to another line.
    - Find the slope and y-intercept of a line from its equation.
    - Graph a line after finding its intercepts
    - Solve applications involving equations of lines.

Week 4: 13-17 Sept (Test 1)

Ch 1.1 Functions and graphs of functions

-
    - Determine whether a relation represents a function.
    - Find the Value of a Function
    - Identify the Graph of a Function

- Obtain info from a graph about a function

Week 5: 20-24 Sept

Algebra for Ch 2 and 3

- Use the Laws of Exponents
  - Power Rule
  - Product Rule
  - Quotient Rule
  - Quotient to Power
  - Zero Exponents
  - Negative Exponents

Week 6: 27 Sept - 1 Oct

-
  - Monomials and Polynomials
    - Recognize monomials.
    - Combine like terms and identify the expression as a monomial, binomial, or trinomial.
    - Evaluate polynomials.
  - Add and Subtract Polynomials
    - Add polynomials.
    - Subtract polynomials.
    - Add and subtract polynomials.

-
  - Multiply Polynomials
    - Multiply monomials.
    - Multiply a monomial by a polynomial.
    - Multiply two binomials with the FOIL method.
    - Find special products.

Week 7: 4-8 Oct

-
  - Divide Polynomials
    - Divide two monomials.
    - Divide a polynomial by a monomial.
    - Divide two polynomials.
  - Synthetic Division
    - Use synthetic division to find quotients and remainders.
    - Use synthetic division to determine if a binomial is a factor of a given polynomial.

- Use the results of synthetic division to find other quantities.

Week 8: 11-15 Oct (TEST 2)

-
  - Factoring Polynomials: Greatest Common Factor
  - Factoring Polynomials: Grouping
    - includes factoring out -1
  - Factoring Polynomials: Trinomials
    - Leading Coefficient of 1
    - Leading Coefficient greater than 1
    - Leading Coefficient greater than 1 and not prime.
  - Factoring Polynomials: Special Forms
  - Solve equations be factoring.

Week 9: 18-22 Oct

Ch 3 Finding the Real Zeros of a Polynomial Function

-
  - Find Real Zeros of a Polynomial Function
    - Answer review problems assessing preparation for working with zeros of polynomial function
    - Use the remainder and factor theorem to determine if x-c is a factor of a give polynomials function

Ch 2 Quad Functions

-
  - Zeros of Quad Functions by Factoring
  - Zeros of a quadratic function using the square root method.
  - Zeros of a quadratic function by completing the square.
  - Real zeros, if any, of a quadratic function using the quadratic formula.
  - Graph quadratic functions using the vertex, axis of symmetry, and intercepts

Week 10: 25-29 Oct

Algebra for Chapter 3 Rational Expressions and Functions

-
  - Rational Expressions
    - Operations of fractions
    - Simplify Rational Expressions (text calls it reduce)

-
  - Rational Expressions: Operations of Fractions
    - Rational Expressions: Simplify
    - Rational Expressions Multiply and Divide
    - Rational Expressions Add and Subtract

Ch3: Rational Functions

-
  - Find Domain of a rational function
  - Solve rational equations
  - Graphs of rational function

Week 11: 1-5 Nov

Algebra for Ch 4: Radical Expressions

-
  - Negative Exponents
  - Evaluate square roots
  - Simplify square roots.
  - Multiply square roots
  - Add and subtract square roots.
  - Multiply expressions containing square roots
  - Rationalize denominators
  - Quotient Property
  - Simplify nth roots.
  - Use properties of radicals to simplify expressions.
  - Complex Numbers

Week 12: 8-12 Nov (Test 3)

- Simplify expressions containing rational exponents.
    -
      - Simplify radicals using rational exponents.
      - Use laws of exponents with rational exponents.
- Inequalities
  - Inequalities: Interval Notation
  -
  - Solve inequalities
  - Solve combined inequalities
  - Solve inequalities involving quadratic or rational expressions
- Logs and Exponential Expressions and Equations
  - Solve Exponential Equations Using Like Bases
  - Exp to Log Notation & Log to Exp Notation

Week 13: 15-19 Nov

-
  - Properties of Logs
  - Write logarithmic expressions as a single logarithm
  - Solve Exp Equations using log properties
  - Solve Log Equations

- **Head start for MA110**
  - Find the length of the hypotenuse of a right triangle
  - Given the lengths of the sides of a triangle, determine whether it is a right triangle.

Week 14: 22-26 Nov

-
  - Distance Formula
  - Use the distance formula to analyze triangles.
  - Midpoint Formula
  - Use the distance formula to find points in the xy-plane

Week 15: 29 Nov - 3 Dec

-
  - Find the center and radius of the circle. Write the standard form of the equation
  - Write the standard and general forms of the equation of a circle with a given center and a point in the xy-plane
  - Graph circles from their equations
  - Write equations of circles in standard form from contained points.

Week 16: Final exam week (TEST 4)

Grading

Final Letter determined by Percent of Final Grade
A = 90-100%
B = 80-89%
C = 70-79%
D = 60-69%
F <60
Final Grade Calculation

Category	Percent of Final Grade

Homeworks	10%
Attendance	10%
Discussions	5%
Tests	75%
Total	**100%**

Homework (10% Final Grade)

- Homework sets are in MLM
- Grade determined at the end of the semester and inputed into canvas grade book. Final grade based on percent or all possible points.
- Each homework set has a 70% prerequisite of previous homework.

Attendance (10%)
Discussion Threaded (5% Final Grade)

- 9 Points for Discussion
    - 3pts = post on time
    - 3pts = insightful post
    - 3pts = insightful post and responses
- Late Work: no late discussions accepted (0pts)
- The X-factor will completed as a threaded discussion and will count 9 points. More detail will be provided as the assignment date approaches.

Tests (75% Final Grade)

- All test are in person, in the classroom.
- Each test is noncumulative from the previous test.
- Each test grade is determined by percent of points earned
- Late exams are given only in extreme circumstances, in adherence to CUH policy. Please provide documented excuse.

Getting Help

CANVAS: For help with Canvas, **click on the encircled question** mark found on left of page. Contact the Chaminade IT Helpdesk for technical issues: helpdesk@chaminade.edu or call (808) 735-4855

MLM ACCOUNT: Getting Help-Chat with Pearson Below is a step-by-step guide/description to getting help with Pearson issues.

- GoTo https://support.pearson.com/getsupport/s/student
- Scroll to bottom and click on Contact Us
- Select Fields
  - Country of Study – United States
  - Role – College Student
  - Issue Category – select most relevant to your issue
  - Product (this one is a little tricky) Type and select "MyLab Math"
  - Check I'm not a robot
  - Start a Chat

TUTORING Chaminade is proud to offer free, one-on-one tutoring and writing assistance to all students. Tutoring and writing help is available on campus at Kōkua 'Ike: Center for Student Learning in a variety of subjects (including, but are not limited to: biology, chemistry, math, nursing, English, etc.) from trained Peer and Professional Tutors. Please check Kōkua 'Ike's website (https://chaminade.edu/advising/kokua-ike/) for the latest times, list of drop-in hours, and information on scheduling an appointment. Free online tutoring is also available via Smarthinking. Smarthinking can be accessed 24/7 from your Canvas account. Simply click Account – Notifications – Smarthinking. For more information, please contact Kōkua 'Ike at tutoring@chaminade.edu or 808-739-8305.

CUH policies and Values

Attendance Policy

The following attendance policy is from the 2019-2020 Academic Catalog (p. 54-55). Faculty members should also check with their divisions for division-specific guidelines.

Students are expected to attend regularly all courses for which they are registered. Student should notify their instructors when illness or other extenuating circumstances prevents them from attending class and make arrangements to complete missed assignments. Notification may be done by emailing the instructor's Chaminade email address, calling the instructor's campus extension, or by leaving a message with the instructor's division office. It is the instructor's prerogative to modify deadlines of course requirements accordingly. Any student who stops attending a course without officially withdrawing may receive a failing grade.

Unexcused absences equivalent to more than a week of classes may lead to a grade reduction for the course. Any unexcused absence of two consecutive weeks or more may result in being withdrawn from the course by the instructor, although the instructor is not required to withdraw students in that scenario. Repeated absences put students at risk of failing grades.

Federal regulations require continued attendance for continuing payment of financial aid. When illness or personal reasons necessitate continued absence, the student should communicate first with the instructor to review the options. Anyone who stops attending a course without official

withdrawal may receive a failing grade or be withdrawn by the instructor at the instructor's discretion.

Attendance in online format is progressing and completing work in a timely manner. Please do not wait until the last minute and try to power through an entire module in one sitting.

Academic Conduct Policy

From the 2019-2020 Undergraduate Academic Catalog (p. 39):

Any community must have a set of rules and standards of conduct by which it operates. At Chaminade, these standards are outlined so as to reflect both the Catholic, Marianist values of the institution and to honor and respect students as responsible adults. All alleged violations of the community standards are handled through an established student conduct process, outlined in the Student Handbook, and operated within the guidelines set to honor both students' rights and campus values.

Students should conduct themselves in a manner that reflects the ideals of the University. This includes knowing and respecting the intent of rules, regulations, and/or policies presented in the Student Handbook, and realizing that students are subject to the University's jurisdiction from the time of their admission until their enrollment has been formally terminated. Please refer to the Student Handbook for more details. A copy of the Student Handbook is available on the Chaminade website.

For further information, please refer to the Student Handbook: https://chaminade.edu/wp-content/uploads/2019/08/NEW-STUDENT-HANDBOOK-19-20-Final-8.20.19.pdf

Credit Hour Policy

The unit of semester credit is defined as university-level credit that is awarded for the completion of coursework. One credit hour reflects the amount of work represented in the intended learning outcomes and verified by evidence of student achievement for those learning outcomes. Each credit hour earned at Chaminade University should result in 37.5 hours of engagement. For example, in a one credit hour traditional face to face course, students spend 50 minutes in class per week for 15 weeks, resulting in a minimum of 12.5 instructional hours for the semester. Students are expected to engage in reading and other assignments outside of class for at least 2 additional hours per week, which equals an additional 25 hours. These two sums result in total student engagement time of 37.5 hours for the course, the total engagement time expected for each one credit course at Chaminade.
The minimum 37.5 hours of engagement per credit hour can be satisfied in fully online, internship, or other specialized courses through several means, including (a) regular online instruction or interaction with the faculty member and fellow students and (b) academic engagement through extensive reading, research, online discussion, online quizzes or exams; instruction, collaborative group work, internships, laboratory work, practica, studio work, and

preparation of papers, presentations, or other forms of assessment. This policy is in accordance with federal regulations and regional accrediting agencies.

Guidelines/Policies for Communications

Email:

Use the Canvas email. Email from non-Chaminade accounts will not get a response.
Always include a subject line.
Remember without facial expressions some comments may be taken the wrong way. Be careful in wording your emails. Use of emoticons might be helpful in some cases.
Use standard fonts.
Check for my response within a timely manner, in accordance to nature of email.

Threaded Discussion Groups:

Review the discussion threads thoroughly before entering the discussion.
Try to maintain threads by using the "Reply" button rather starting a new topic.
Do not make insulting or inflammatory statements to other members of the discussion group. Be respectful of other's ideas.
Be patient and read the comments of others thoroughly before entering your remarks.
Be cooperative with group leaders in completing assigned tasks.
Be positive and constructive in group discussions.
Respond in a thoughtful and timely manner.

FERPA: Federal Education Rights Act

Below is a link to U.S. Department of Education: FERPPA for Students (at age 18).

https://www2.ed.gov/policy/gen/guid/fpco/ferpa/students.html

ADA Accommodation

If a student would like to determine if they meet the criteria for accommodations, they should contact the Kōkua 'Ike Coordinator at (808) 739-8305 for further information (ada@chaminade.edu). If you need individual accommodations to meet course outcomes because of a documented disability, please speak with me to discuss your needs as soon as possible so that we can ensure your full participation in class and fair assessment of your work. Students with special needs who meet criteria for the Americans with Disabilities Act (ADA) provisions must provide written documentation of the need for accommodations from the Counseling Center as soon as possible.

For additional resources on ADA in college see the U.S. Department of Education website, *Students with Disabilities Preparing for Postsecondary Education: Know Your Rights and Responsibilities*

https://www2.ed.gov/about/offices/list/ocr/transition.html

Title IX Information

Chaminade University of Honolulu recognizes the inherent dignity of all individuals and promotes respect for all people. Sexual misconduct, physical and/or psychological abuse will NOT be tolerated at CUH. If you have been the victim of sexual misconduct, physical and/or psychological abuse, we encourage you to report this matter promptly. As a faculty member, I am interested in promoting a safe and healthy environment, and should I learn of any sexual misconduct, physical and/or psychological abuse, I must report the matter to the Title IX Coordinator. If you or someone you know has been harassed or assaulted, you can find the appropriate resources by visiting Campus Ministry, the Dean of Students Office, the Counseling Center, or the Office for Compliance and Personnel Services.

For a summary of recent changes see the U.S. Department of Education: Summary of Major Provisions of the Department of Education's Title IX Rule.
https://www2.ed.gov/about/offices/list/ocr/docs/titleix-summary.pdf

Marianist Values

This class represents one component of your education at Chaminade University of Honolulu. An education in the Marianist Tradition is marked by five principles and you should take every opportunity possible to reflect upon the role of these characteristics in your education and development:

1. Education for formation in faith
2. Provide an integral, quality education
3. Educate in family spirit
4. Educate for service, justice and peace
5. Educate for adaptation and change

MA100 focuses in Educate for Service, Justice and Peace. During the logic section of this class we will analyze real examples if valid and unsound arguments that perpetuate injustices.

For more information, see The Marianists, Province of the United States.
https://www.marianist.com/wp-content/uploads/2017/10/CME_09012016.pdf

~ALOHA~