Math 140, Precalculus: Trigonometry & Analytic Geometry
3 Credits (CRN 60066)
Online, asynchronous

Instructor: Amanda Zerr
Office: Zoom ID: 9528242751
Office Hours: M - F by appointment. Email me to set up a meeting time.
Contact: E-mail: azerr@hawaii.edu, Phone: 236-9279
Effective Date: Fall, 2021
Website: Course Lauima Site

WINDWARD COMMUNITY COLLEGE MISSION STATEMENT

Windward Community College offers innovative programs in the arts and sciences and opportunities to gain knowledge and understanding of Hawai‘i and its unique heritage. With a special commitment to support the access and educational needs of Native Hawaiians, we provide the Ko‘olau region of O‘ahu and beyond with liberal arts, career and lifelong learning in a supportive and challenging environment — inspiring students to excellence.

CATALOG DESCRIPTION

Math 140 studies trigonometric functions, analytic geometry, polar coordinates, vectors, and related topics. This course is the second part of the precalculus sequence.

Pre-Requisites: Grade of “C” or better in MATH 103 or equivalent, satisfactory math placement test score, or consent of instructor.

ACTIVITIES REQUIRED AT SCHEDULED TIMES OTHER THAN CLASS TIME

None

STUDENT LEARNING OUTCOMES (SLO)

As a result of taking this course, students can expect to attain the following outcomes:

1. Employ algebraic and geometric representations of trigonometric functions and other relations.
2. Use appropriate techniques to analyze and solve application problems requiring the use of trigonometry or analytic geometry.
3. Utilize precise mathematical language and symbols to effectively communicate mathematics in written and/or oral form

All SLO assessments are embedded in class activities, homework, quizzes or exams.
FOUNDATION HALLMARKS

Math 140 fulfills 3 credits of the General Education requirements (Foundations: Quantitative) for both an A.A. degree at WCC and a Bachelor's degree at UH Manoa. Consequently, it meets the following hallmarks of the Quantitative Reasoning requirement:

1. Provide students with theoretical justifications for, and limitations of, mathematical or statistical methods, and the formulas, tools, or approaches used in the course.
2. Include application of abstract or theoretical ideas and information to the solution of practical quantitative reasoning problems arising in pure and applied research in specific disciplines, professional settings, and/or daily and civic life.
3. Provide opportunities for practice and feedback that are designed to help students evaluate and improve quantitative reasoning skills by including a course component at least once per week with a maximum 30:1 student-to-teacher ratio.
4. Be designed so that students will be able to:
   a. identify and convert relevant quantitative information into various forms such as equations, graphs, diagrams, tables, and/or words;
   b. select appropriate techniques or formulas, and articulate and evaluate assumptions of the selected approaches;
   c. apply mathematical tools and perform calculations (including correct manipulation of formulas);
   d. make judgments, create logical arguments, and/or draw appropriate conclusions based on the quantitative analysis of data, the assumptions made, the limitations of the analysis, and/or the reasonableness of results; and effectively communicate those results in a variety of appropriate formats.

COURSE TASKS

This online class is conducted fully online via an asynchronous format., i.e. there are no required time-specific meetings. Students will take responsibility for their own learning by:

- Engaging with the Laulima videos & lessons
- Using the section in the eBook to analyze more worked examples and read more detailed explanations of the concepts
- Completing weekly online homework & quizzes using Pearson’s MyLab Math, analyzing errors, and asking specific questions to clarify misunderstandings
- Thoughtfully participating in forums through Laulima
- Completing three exams and the comprehensive final exam

New weekly modules will become available Monday mornings. Forum posts will be due on Friday and all other assignments will be due on Mondays at 11 am. Due dates are listed in the Tentative Schedule (last page of syllabus) and in the Laulima lesson pages. You should check your hawaii.edu email account regularly for course notifications and email your instructor as needed for additional information. Grades will be updated each Friday on Laulima.
ASSESSMENT TASKS

High Quality Written Work
The student will demonstrate competency in the objectives by completing assignments, discussions, and special projects as well as taking quizzes, tests, and a comprehensive final exam. Math 135 fulfills 3 credits of the General Education requirements of Foundations Quantitative (FQ). This means that students’ written work on exams and quizzes must clearly and logically explain the mathematical concepts being addressed. Messy, incomplete and/or disorganized work will not receive full credit.

Community Support Forums
The purpose of the forums is to deepen students’ understanding of the course objectives and increase student success through a supportive community. Students will have the opportunity to express ideas using clear and precise mathematical language, create and solve new problems, and reflect on growth of the Student Learning Objectives. Students will also give and receive feedback from peers and the instructor.

Homework
- Homework will be completed online via the MyLab Math (MLM) program as well as additional activities that must be completed and turned in to the instructor. Most successful students need to do additional problems and study their lecture notes and quizzes in order to succeed.
- You can retry MLM problems an unlimited number of times until you get them correct. Homework turned in after the deadline will receive a late penalty of 10%.

Quizzes
There will be 6 online quizzes for about 10 points each. You will have 2 attempts on each quiz and your highest score will be kept. Quiz questions are randomized so no students have the same questions.

Tests
- The timed exams will be available to students online for approximately 4 days and students must submit their exam to the instructor by the due date. There are no retests on exams. Questions on tests are randomized so no students have the same test.
- You are required to show complete and orderly written work and submit it to Laulima’s assignments.
- Tests without written work submitted will not earn full credit.

Final Exam
The final exam is a 2 hour test covering concepts and skills in the entire course. There are no retakes or make-ups for the final exam. The purpose of the final exam is to synthesize your understanding of the learning objectives so that you can succeed in future classes and career goals. Submit written work to Laulima’s assignments. The Final Exam score can replace one Unit Exam score, if it is higher.

Bonus Points
Extra credit will be awarded for mastery points (MP) earned in your MyLab Math Study Plan. Earning 90% of the mastery points will bring a student’s grade up 1% in the final grade calculation (i.e. a final grade of 89% rounds up to an A with the extra credit). 80% of the mastery points brings a student’s grade up 0.5% in the final grade calculation.

GRADING - Experience Points (XP)

Grades are posted on the Laulima XP tab and are based on the following weighted categories:
- 50% 3 Unit Exams (100 points each)
- 20% Final Exam (100 points)
- 20% Homework (approximately 25 assignments, 10 points each)
- 5% Quizzes (6 quizzes, 10 points each)
- 5% Community Support Forums (8 Forum posts & responses, 10 points each)
You will receive a letter grade based on the following scale. *Grades are rounded up so that 89.5% = A, whereas 89.4% = B.*

- **A** 90%-100%
- **B** 80%-89%
- **C** 70%-79%
- **D** 60%-69%
- **F** Less than 60%
- **W** Official Withdrawal (by posted deadline)

**LEARNING RESOURCES**

**Required Materials**

1. This class requires the use of [Laulima](#) for the online lessons, forums and grades. Students must have access to a computer, the Internet, and use their UH hawaii.edu e-mail account to participate in this class.
2. MyLab Math (MLM) is our online learning program for homework, quizzes, and tests. This course uses IDAP which is a partnership between the publisher and our bookstore that gives you a reduced price. You will access your required course material digitally through the left-hand menu of your course Laulima page. Students who remain opted in to IDAP will have access to the course material for the duration of the semester. Prior to the start of the semester, a Bookstore IDAP Rental charge (about $58.82) will be added to your MyUH account. By opting out of IDAP you will miss out on the reduced price and will have to purchase the materials yourself.
4. The use of graphing technology, such as Desmos, will be integrated into the course and is required for some homework. The WCC library has a few TI-83 calculators available for students to borrow. Students are not allowed to use graphing technology for exams.
5. Smartphone or scanner to upload pdfs of your written work to Laulima.

**Notebook**

I recommend that you keep an organized homework notebook in which you complete all your online assignments by hand, the same way you would complete paper assignments. You should write each problem in your notebook and neatly solve it, and then enter your answer online. This will help you prepare for your exams which require that you submit written work.

**Time**

This is a college-level math class. If you want to succeed in this class, you will need to dedicate at least 8 hours per week studying and completing work.

**Additional Learning Resources**

- [Tutor.com](#) - Free online, on-demand tutoring. Sign in to myUH for free access to the program.
- [Ka Piko Math Lab](#) - Free online drop-in tutoring with WCC students who have been successful in Math 140 and above.
- [TRIO Student Support Services](#) - Free individual and/or small group tutoring, financial assistance, computer lab & printing, early class registration, income tax services, food, and so much more!
- [Testing Center](#) - La’akea Room 228. Phone number (808)235-7498
- MySuccess: Students may be referred for extra help or advising through MySuccess. Students can also explore resources at MySuccess.Hawaii.edu and [windward.hawaii.edu/MySuccess](http://windward.hawaii.edu/MySuccess)
ADDITIONAL INFORMATION

ABOUT THE INSTRUCTOR

Welcome! My name is Amanda Zerr (Master’s of Arts in Teaching Mathematics). I am passionate about math and teaching and also love the outdoors, reading, cooking and spending time with family and friends.

I have over 10 years of experience teaching college, high school & middle school aged students in Oregon, California and Hawaii. I have also held a variety of other jobs such as corporate trainer, high-ropes course guide, and outdoor science teacher. What I know for sure is that if you are open to learning & willing to practice and use good strategies, you can succeed in math.

Contacting the Instructor
There are three easy ways to contact me.

- Email me via your UH school email
- Select “Ask My Instructor” in MyLab Math
- Post your question to the OMG Help! forum on Laulima

I will be available Monday - Friday and will reply to any questions and posts within 24 hours during the week and within 48 hours on weekends. When contacting me with questions or concerns, please include your full name & MATH 135 in the title of the message. If you are asking about a specific homework problem, include the section and question number.

Alternative Contact
If you are unable to contact the instructor, have questions that your instructor cannot answer, or for any other issues, please contact the Academic Affairs Office. Email: wccaa@hawaii.edu
Phone: 808-235-7422

SAFE SPACE

At WCC we strive to treat each other with respect and I welcome individuals of all ages, backgrounds, beliefs, ethnicities, genders, gender identities, gender expressions, national origins, religious affiliations, races, sexual orientations, ability, and other visible and nonvisible differences. All members of this class are expected to contribute to a respectful, welcoming and inclusive environment for every other member of the class. However, while it might not be intentional, we can all make mistakes. If you feel continuously disrespected even after you have asked the perpetrator to stop please email me and/or file a grievance with the Vice Chancellor of Student Affairs. If you witness a classmate being harassed, please stand up for them and offer support.

THE LEARNING PROCESS & GROWTH MINDSET

When learning new concepts, your brain is creating new synapse connections. Frustration and struggle are signs that you are in the middle of the learning process. Don’t give up! Good strategies and continued practice lead to stronger synapse connections and allow your brain to store the new concepts in long-term memory. You build your intelligence as you practice and learn new concepts. Click here to learn more about research into the growth mindset.
VULNERABILITY

Picture yourself as a baby learning to walk. Think of how many times you had to fall and get back up. Being vulnerable is part of learning new things because we are opening ourselves to struggle and failure. Emotions such as shame, anxiety, fear, and uncertainty are very common when learning something new. It is understandable to react with new things (anger, procrastination, numbing, blaming) but that shuts down learning. Instead, try to get curious about what you are feeling and the story you are telling yourself. (ie “I didn’t do well on that quiz. They’re going to find out I’m not smart enough. I don’t belong here. Who do I think I am?”) Then fact-check yourself and revise your story (ie “I thought the way I studied was going to help, but there were still concepts I didn’t really understand.”). Focus on your goals and make a realistic plan (“I need to know this to pass the class, get my degree and have the life I want. Next time I’ll get help from the Math Lab.”) Click here to learn more about research into vulnerability and learning.

SYLLABUS CHANGE POLICY

Information contained in the course syllabus may be subject to change with reasonable advance notice, as deemed appropriate by the instructor. Updates to the syllabus will be communicated via email and the updated syllabus will be posted on Laulima.

DISABILITIES & ACCOMMODATIONS

If you have a physical, sensory, health, cognitive, or mental health disability that could limit your ability to fully participate in this class, you are encouraged to contact the Accessibility Counselor to discuss reasonable accommodations that will help you succeed in this class. Roy Inouye can be reached at (808) 235-7453, royinouy@hawaii.edu, or you may stop by Hale Kāko’o 106 for more information.

SEX DISCRIMINATION AND GENDER-BASED VIOLENCE RESOURCES (TITLE IX)

Windward Community College is committed to providing a learning, working, and living environment that promotes personal integrity, civility, and mutual respect and is free of all forms of sex discrimination and gender-based violence, including sexual assault, sexual harassment, gender-based harassment, domestic violence, dating violence, and stalking.

If you or someone you know is experiencing any of these, WCC has staff and resources to support and assist you. To report an incident of sex discrimination or gender-based violence, as well as receive information and support, please contact one of the following:

UH Confidential Advocate
(808) 348-066
Email: advocate@hawaii.edu

Desrae Kahale, Mental Health Counselor & Confidential Resource
Phone: (808) 235-7393
Email: dkahale3@hawaii.edu
Office: Hale Kāko’o 101

Karla K. Silva-Park, Title IX Coordinator
Phone: (808) 235-7468
Email: karlas@hawaii.edu
Office: Hale Kāko’o 128

As a member of the University faculty, I am required to immediately report any incident of sex discrimination or gender-based violence to the campus Title IX Coordinator. Although the Title IX Coordinator and I cannot guarantee confidentiality, you will still have options about how your case will be
handled. My goal is to make sure you are aware of the range of options available to you and have access to the resources and support you need.

For more information regarding sex discrimination and gender-based violence, the University's Title IX resources and the University's Policy, Interim EP 1.204, go to manoa.hawaii.edu/titleix/

**STUDENT CONDUCT & ACADEMIC HONESTY**

Students are required to comply with the UH Student Conduct Code including policies that prohibit Academic Dishonesty. Do not cheat yourself of an opportunity to learn. Doing the work yourself gives you a chance to master new material and further your education. See the **WCC Catalog** and the **WCC Student Conduct Policy** for more information.
MATH 140 TENTATIVE COURSE SCHEDULE

The following schedule is subject to change. Should changes occur, you will be notified via email.

** Please note the final exam for this course is Thursday, Dec 16th **

<table>
<thead>
<tr>
<th>Important Dates</th>
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<tr>
<td>Monday, Aug 23 - First day of instruction, Add/Drop fees begin</td>
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<tr>
<td>Tuesday, Aug 31 – Last day to register. Last day to drop &amp; receive 100% refund.</td>
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<tr>
<td>Tuesday, Sep 14 – Last day to drop &amp; receive 50% refund (No “W” on transcript).</td>
</tr>
<tr>
<td>Monday, Nov 1 – Last day to withdraw from class (with a “W” on transcript).</td>
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UNIT 1 - THE UNIT CIRCLE, TRIGONOMETRIC FUNCTIONS AND RIGHT TRIANGLES

Week 1 (Aug 23 - 30)
- Padlet: Say Hello
- Student Info Sheet
- HW: 9.1, 9.2 - Angles, the Unit Circle & Trigonometric Functions

Week 2 (Aug 30 - Sep 6)
- Forum 1: Hawaiian Star Compass
- Quiz 1 (covering sections 9.1 and 9.2)
- HW: 9.3, 9.4 - Graphing Trig Functions

Week 3 (Sep 6 - 13)
- Forum 2: What’s My Equation?
- Quiz 2 (covering sections 9.3 and 9.4)
- HW: 9.5, 9.6 - Triangle Approach to Trig Functions

Week 4 (Sep 13 - 20)
- HW: - 9.7 Right Triangle Application
  - CH 9 Review

UNIT 2 - ANALYTIC TRIGONOMETRY AND TRIGONOMETRIC EQUATIONS

Week 5 (Sep 20 - 27)
- Test 1 (CH 9)
- HW: 10.1 - Analytic Trig

Week 6 (Sep 27 - Oct 4)
- Forum 3: Prove It!
- HW: 10.2, 10.3 - More Analytic Trig

Week 7 (Oct 4 - 11)
- Quiz 3 (covering sections 10.1-10.3)
- HW: 10.4 - Inverse Trig Functions

Week 8 (Oct 11 - 18)
- Forum 4: Angle of Inclination of Le‘ahi
- HW: 10.5, 10.6 - Trigonometric Equations

Week 9 (Oct 18 - 25)
- HW: Ch 10 Review
- Test 2 (CH 10)
UNIT 3 - OBLIQUE TRIANGLES, VECTORS AND POLAR EQUATIONS

Week 10 (Oct 25 - Nov 1)
- HW: 11.1, 11.2 - Oblique Triangles with Laws of Sines and Cosines

Week 11 (Nov 1 - 8)
- Monday, Nov 1 – Last day to withdraw from class (with a “W” on transcript).
- Quiz 4 (11.1, 11.2)
- HW: 11.3 - Vectors

Week 12 (Nov 8 - 15)
- Forum 5: Applications
- HW: 11.6 - Polar Equations

Week 13 (Nov 15 - 22)
- Ch 11 Review
- Test 3 (CH 11)

UNIT 4 - CONIC SECTIONS AND PARAMETRIC EQUATIONS

Week 14 (Nov 22 - 29)
- HW: 8.1-8.3 - Conic Sections

Week 15 (Nov 29 - Dec 6)
- Quiz 5 (covering sections 8.1-8.3)
- HW 8.4 - Parametric Equations

Week 16 (Dec 6 - 13)
- Forum 6: Trig Can Do That?
- HW: Review for Final Exam
- Optional: Complete your Study Plan (for extra credit)

Due Thursday, Dec 16 - Cumulative Final Exam