Syllabus

MTH 3 (Precalculus) • MWF: 09:00 AM - 11:30 AM (PST) • Summer 2022: Session 1

Instructor: Alex Tessner

Office Hours: Wednesday & Friday 12:30 PM - 2:00 PM

Teaching Assistant: Sophie Aiken

Section: Thursday 12:30 PM - 1:30 PM

Office Hours: Tuesday 12:30PM - 2:00PM & Thursday 1:30PM - 3:00PM

Canvas: I will be using the Canvas for anything and everything course related.
(Log in at https://canvas.ucsc.edu using your CruzID and Gold password.)

Zoom: I will be using Zoom to teach and for office hours, links and more details will be available on Canvas in the Zoom tab. Lectures and Sections will be recorded and available in the Yuja Tab on Canvas.

Ed Discussion: We will be using Ed Discussion as a discussion forum for anything and everything course related, links and more details will be available on Canvas.

Course Description: Precalculus provides the language and tools used to describe real-life situations mathematically This course acts as an introduction to concepts essential to upper-division mathematics courses. Functions, algebra and trigonometry are used to explore reality and unearth properties that may not be otherwise apparent. We will begin by introducing functions then work towards understanding their notational representation, associated properties and demonstrate their use in mathematical models of the real world. When appropriate we also explore inverse functions and their graphs. The specific functions this course covers are: polynomial, rational, exponential, logarithmic, and trigonometric functions.

Learning Outcomes:
- Students will be able to use functions to describe mathematical relationships and real life situations, and will be able to identify different mathematical models.
- Students will gain familiarity with mathematical notations and terminology used in the course, laying the foundation to understand more advanced mathematical language introduced in subsequent mathematics courses.
- Students will be able to appreciate the significance of mathematics by developing various kinds of examples, both from within mathematics and real life, for concepts introduced throughout the course.
- Students will develop studying skills, improve time management, devise working strategies, in effect formulate a framework towards critical thinking and problem-solving.

Resources for Class:
(Optional) Precalculus: Concepts Through Functions by Sullivan and Sullivan

(Optional) Precalculus (3rd Corrected Edition) by Stitz and Zeager
(available for free online here: https://www.stitz-zeager.com/)

(Optional) Precalculus at OpenStax

(available for free online here: https://openstax.org/details/books/precalculus)

Assessment Distribution: These assignments will add to 105% of the total grade.

- *Pre-Lecture (15%)*: These will consist of readings and review questions that you will be expected to complete before we start that topic in class/before you start watching the lecture. They can be found under the relevant Modules via Canvas. We are dropping the lowest two scores to account for any absences or issues. Submission for Pre-Lecture quizzes close weekly **Sunday at 11:59 PM**.

- *Post-Lecture (10%)*: This will consist of a feedback quiz with a discussion question. Submissions for Post-Lecture survey close weekly on **Sunday at 11:59 PM**. There will also be a *recommended* but not required list of exercises to try from the main reference, these will prepare you for the quizzes, homework and your final; if there any questions: ask on Ed Discussion. They can be found under the relevant Modules via Canvas.

- *Homework (30%)*: You will have a homework assignment due weekly on **Sundays at 11:59 PM**. It will cover the content addressed during the week. You will upload your written work to Canvas, apps like CamScanner, Office Lens etc. will be useful here to scan your written work. Roughly half of the problems will be graded, chosen at the grader's discretion.

- *Quizzes (15%)*: You will have a weekly quiz that is going to be available on Friday at 7:00 a.m. until **Sunday at 11:59 PM** You will have one hour to complete it once you start it; this will be found on Canvas via the Quiz Tab.

- *Participation (5%)*: This consists of class attendance via Zoom.

- *Section (10%)*: During a weekly section the Teaching Assistant will work through some examples from the post lecture review. Submission for Pre-Lecture quizzes close weekly **Sunday at 11:59 PM**, this will count for attendance and the 10%.

- *Final (20%)*: Final will be comprehensive. It will be on Friday, July **22$^{\text{nd}}$**.

Make-up Policy: You will have 3 days, after your written homework score is available, to re-attempt and re-submit your homework.

Late Submission: I will not accept any late work due to the above Make-up Policy.

Letter Grades:

$A+ : 96\%$ and above,	$B : 80\% - 84\%,$	$C- : 60\% - 65\%$
$A : 90\% - 95\%,$	$B- : 78\% - 79\%,$	$D : 50\% - 59\%$
$A- : 88\% - 89\%,$	$C+ : 73\% - 77\%$	$F : $ Below 50%
$B+ : 85\% - 87\%$	$C : 66\% - 72\%$	

Tentative Lecture Schedule: See on next page

I RESERVE THE RIGHT TO CHANGE ANY PARTICULAR OF THE SYLLABUS ABOVE.

(ANY CHANGES WILL BE TO YOUR ADVANTAGE, AND YOU WILL BE INFORMED OF THEM PROMPTLY VIA CANVAS.)

Tentative Lecture and Assignment Schedule

Week:	Monday	Wednesday	Friday	Assignments Due
Week 1: June 20th – June 26th	**Holiday NO CLASS**	**Lecture 1:** Course introduction, Relations and Functions, Graphs and Transformations	**Lecture 2:** Polynomials with emphasis on linear and quadratic functions, Absolute Value, and Inequalities	HW 1, Quiz 1, Section 1 activity Pre/Post Lecture Quiz submissions due Sunday (11:59 p.m.)
Week 2: June 27th – July 3rd	**Lecture 3:** More on Polynomials and their roots, Factor & Remainder Theorems, Rational Functions	**Lecture 4:** Function composition, inverses and other algebraic functions, intro to Exponential and Logarithmic functions	**Lecture 5:** More on Exponentials and Logs, their properties, growth, decay, and inequalities	HW 2, Quiz 2, Section 2 activity Pre/Post Lecture Quiz submissions due Sunday (11:59 p.m.)
Week 3: July 4th- July 10th	**Holiday NO CLASS**	**Lecture 6:** Angles, Radians, the Unit Circle, introduction to Sine and Cosine	**Lecture 7:** The six trigonometric functions, fundamental identities, and other trigonometric identities	HW 3, Quiz 3, Section 3 activity Pre/Post Lecture Quiz submissions, due Sunday (11:59 p.m.)
Week 4: July 11th – July 17th	**Lecture 8:** Graphing the six trigonometric functions	**Lecture 9:** Inverse trigonometric functions, equations and inequalities, and applications of sinusoids	**Lecture 10:** Half angle formulas and other formulas/identities	HW 4, Quiz 4, Section 4 activity Pre/Post Lecture Quiz submissions, due Sunday (11:59 p.m.)
Week 5: July 18th- July 22nd	**Lecture 11:** Law of Sines and Cosines, Polar Coordinates	**Final Review**	**Final Exam**	SETS Survey and Feedback Due TBD

Other Important Information

Summer Deadlines:

- (Session 1) Drop: *Monday, June 27* (tuition reversed); Request for "W": *Friday, July 10* (no tuition reversal);

- No class on *Monday, June 20th and July 4th* in observance of Juneteenth and Independence Day.

You will not be dropped for non-attendance or non-payment, you must drop yourself. Dropping before the deadline results in a full-tuition reversal/refund. Withdraw posts a W for the grade and full tuition is charged (no refund). For all dates and deadlines, including 'change of grade option' (P/NP) and grades due, here is the summer academic calendar: https://summer.ucsc.edu/studentlife. For questions about dropping, requesting a W grade for a course, or withdrawing from the summer quarter, email summer@ucsc.edu.

DRC Remote Accommodations: The Disability Resources Center (DRC) reduces barriers to inclusion and full participation for students with disabilities by providing support to individually determine reasonable academic accommodations. Operations continue via remote appointments. If you have questions or concerns about exam accommodations or any other disability-related matter, email the DRC Schedulers at drc@ucsc.edu for an appointment; you can also visit their website at http://drc.ucsc.edu.

CAPS (Counseling and Psychological Services): This is a stressful time, so if you are in distress, managing heightened stress and anxiety, or want to get more support and a counselor's perspective on something you're going through, CAPS provides a variety of services for your needs, please visit their website for more information https://caps.ucsc.edu.

Small Group Tutoring: Small Group Tutoring (SGT) supports students academically to advance educational equity by designing inclusive learning environments outside of the classroom. In SGT, you can expect the Tutor to facilitate cooperative group activities designed to have students work together on the course content and develop study skills for the course, please visit their website for more information https://lss.ucsc.edu.

Academic Integrity: Academic integrity is the cornerstone of a university education. Academic dishonesty diminishesvthe university as an institution and all members of the university community. It tarnishes the value of a UCSC degree. All members of the UCSC community have an explicit responsibility to foster an environment of trust, honesty, fairness, respect, and responsibility. All members of the university community are expected to present as their original work only that which is truly their own. All members of the community are expected to report observed instances of cheating, plagiarism, and other forms of academic dishonesty in order to ensure that the integrity of scholarship is valued and preserved at UCSC. For the full policy and disciplinary procedures on academic dishonesty, students and instructors should refer to the [Academic Integrity page](#) at the Division of Undergraduate Education.

Title IX: The university cherishes the free and open exchange of ideas and enlargement of knowledge. To maintain this freedom and openness requires objectivity, mutual trust, and confidence; it requires the absence of coercion, intimidation, or exploitation. The principal responsibility for maintaining these conditions must rest upon those members of the university community who exercise most authority and leadership: faculty, managers, and supervisors.

The university has therefore instituted a number of measures designed to protect its community from sex discrimination, sexual harassment, sexual violence, and other related prohibited conduct. Information about the Title IX Office, the online reporting link, applicable campus resources, reporting responsibilities, the UC Policy on Sexual Violence and Sexual Harassment, and the UC Santa Cruz Procedures for Reporting and Responding to Reports of Sexual Violence and Sexual Harassment can be found at titleix.ucsc.edu.

The Title IX Office is actively responding to reports and requests for consultation. If you are not currently working with someone in the office and want to make a report/request a consult, you can expect the fastest response by using our online reporting link.

For more information please visit the Title IX Operations under Covid-19 page.