

# Pre-Calculus

MATH 29 – Fall 2019

👤 Dr. Joshua Wiscons (he/him/his)  
📍 Brighton (BRH) 144  
🗨️ **M,W** 10:00AM–11:00AM; **Th** 9:00AM–10:30AM  
And also by appointment  
✉️ [joshua.wiscons@csus.edu](mailto:joshua.wiscons@csus.edu)  
📄 [webpages.csus.edu/wiscons/teaching/](http://webpages.csus.edu/wiscons/teaching/)

**Welcome to Pre-Calculus!** This class is about functions and relations. We will learn about many commonly encountered functions and relations used all the time to model real-life phenomena. We'll also begin to develop tools to analyze functions and relations, which are then taken further in your next course: Calculus. **Please, and always, let me know if you have any questions or if I can be of any help!**

*"But without some common baseline of facts; without a willingness to admit new information, and concede that your opponent is making a fair point, and that science and reason matter, we'll keep talking past each other, making common ground and compromise impossible." - President Barack Obama*

📖 **Catalog Description.** Designed to prepare students for calculus. Topics include: trigonometry, points and lines in the Cartesian plane; lines and planes in space; transformation of coordinates; the conics; graphs of algebraic relations; the elementary transcendental functions.

✔️ **Prerequisites.** MATH 12 or proof of readiness as determined by a *proctored* ALEKS PPL Placement Assessment. For more information, visit [www.csus.edu/college/natural-sciences-mathematics/math-placement-exam/](http://www.csus.edu/college/natural-sciences-mathematics/math-placement-exam/)

📖 **Book.** *Precalculus* by Julie Miller and Donna Gerken together with access to the online homework system ALEKS. You can get ALEKS access for 18 weeks, which included access to an electronic version of the textbook, for \$50. It is also possible to get a loose-leaf version of the textbook for an addition \$25. More information on purchasing access to ALEKS and the book is provided on our Canvas page.

⚙️ **Learning Outcomes.** In this course, students will (1) increase their capacity for critical thinking and fact-based reasoning, (2) develop the necessary competency with the concepts and mechanics of Pre-Calculus for further work in mathematics and other fields, (3) improve their written and oral communication of mathematics, and (4) develop the skills and mindset for solving problems in a team.

📅 **Typical Day.** A typical class meeting will consist of group work, discussion, and mini-lectures.

🗣️ **Class Etiquette.** Members of this class represent a rich variety of backgrounds and perspectives. Our classroom is committed to providing an atmosphere for learning that respects diversity. While working together to build this intellectual community, we ask all members to:

- share their unique experiences, values and beliefs;
- be open to the views of others and honor the uniqueness of their colleagues;
- appreciate the opportunity that we have to learn from each other in this community;
- value each other's opinions and communicate in a respectful manner;
- use this opportunity together to discuss ways in which we can create an inclusive environment in this course.

## Grade Composition

|                        |     |  |
|------------------------|-----|--|
| Online Homework        | 20% |  |
| In-Class Participation | 10% |  |
| Midterm Exams          | 50% | (lowest score: 15%, middle score: 15%, highest score: 20%) |
| Final Exam             | 20% |  |

*Grading scale:* A 100-93%, A- 92-90%, B+ 89-87%, B 86-83%, B- 82-80%, C+ 79-77%, C 76-73%, C- 72-70%, D+ 69-67%, D 66-60%, F 59-0%.

## Course Components

*Online Homework.* We will have regularly scheduled online homework—the main goal of these is to build comfort and confidence with the core techniques of the course. You are *allowed and encouraged* to work together, but you are expected to **enter your solutions on your own**. We will use the ALEKS system, which you will need to pay to use. More info will be posted in Canvas.

*In-Class Participation.* Most days we will work on and discuss problems in groups. Your participation grade will be determined primarily based on attendance, but it will also take into account your level of engagement in group and class-wide discussions. *Please try to arrive on time, and if you can't, please send me an email.*

*Exams.* There are 3 midterm exams *tentatively* scheduled for Sept. 20, Oct. 18, and Nov. 15. The Final Exam is Wednesday, Dec. 11 from 8:00AM–10:00AM (for my 9AM class) and 10:15AM–12:15PM (for my 12PM class).

**Student Learning Objectives** The list below highlights some of the more important topics of the course, but does not list every topic that will be covered.

- Be able to determine if a given point in the plane satisfies a given two variable equation or inequality.
- Understand the concept of a function, function transformations, representing functions graphically, 1-to-1 functions, and inverse functions.
- Know how to determine the domain and range of a given function and find the inverse of invertible functions.
- Be able to graph, recognize, and manipulate functions such as quadratic, polynomial, rational, exponential, logarithmic, trigonometric, algebraic, and absolute value functions.
- Know how to solve a variety of equations including algebraic, exponential, logarithmic, and trigonometric equations.
- Understand and be able to use properties of logarithms to rewrite expressions and solve equations.
- Understand and be able to use and prove basic trigonometric identities such as the Pythagorean Identity, the sum and difference formulas, and the half angle formulas.

**General Education** GE Area: B4 (Mathematical Concepts and Quantitative Reasoning)

*Learning Outcomes* Solve problems by thinking logically, making conjectures, and construction valid mathematical arguments. Make valid inferences from numerical, graphical, and symbolic information. Apply mathematical reasoning to abstract and applied problems, and to scientific and non-scientific problems.

*Writing Component* The course will have a writing component, evaluated for clarity and style and aimed at improving the students' ability to write logically precise, well-structured, and well-justified mathematics.

**Accommodations.** Any student needing academic adjustments or accommodations should speak with me privately as soon as possible. If possible, please bring a copy of your accommodation letter from the [Services to Students with Disabilities \(SSWD\) office](#). All discussions will remain confidential. More information here: [www.csus.edu/student-affairs/centers-programs/services-students-disabilities](http://www.csus.edu/student-affairs/centers-programs/services-students-disabilities).

**Getting Extra Help.** Try hard! . . .but don't be surprised if that is not always enough. *Please come talk with me!* Talk with your classmates too. And please, please take advantage of the [Math Tutoring Lab](#) in BRH 118.

**Peer Assisted Learning (PAL) Sessions** There are supplementary sessions (NSM 12B, Peer-Assisted Learning MATH 29) that students can take concurrently with Math 29. They are offered several times per week ([see the class schedule](#).) NSM 12B is a one-unit course, graded Credit/No Credit, which consists small-group work facilitated by undergraduate students (PAL facilitators) who have successfully mastered the material in Math 29.

*Even if you do not enroll in NSM 12B, you may still go to the PAL leader office hours for help, which are held in Sequoia (SQU) 248 (or 320). Times of office hours will be posted outside the door of SQU 248 (or 320).*

**Technology** The emphasis of this course is on conceptual understanding. Feel free to use calculators and/or computer software programs on the homework assignments, but they will **not** be allowed on exams. (I'm a big fan of [Desmos](#) for graphing and [WolframAlpha](#) for other computations.)

**Cheating.** Cheating will result in disciplinary action and will be reported to the [Office of Student Conduct](#). If you are unsure what constitutes cheating, please speak with me and review Sacramento State's *Academic Honesty Policy and Procedures* document here: [www.csus.edu/umannual/student/stu-0100.htm](http://www.csus.edu/umannual/student/stu-0100.htm).

(SOME) CAMPUS RESOURCES

**Crisis Assistance & Resource Education Support (CARES).** The CARES office provides support to students who are in crisis or experiencing unique challenges to their education including food and/or housing insecurity, transportation barriers, mental health & wellness, and much more. Learn more about your options and resources here: [www.csus.edu/student-affairs/crisis-assistance-resource-education-support](http://www.csus.edu/student-affairs/crisis-assistance-resource-education-support)

**Counseling Services.** Confidential counseling services are available on campus for Sacramento State students. Counselors are located on the second floor of the WELL. Appointments can be made 8:00AM–5:00PM, Monday–Friday. Call 916-278-6461 or go here [shc-pncweb.saclink.csus.edu/](http://shc-pncweb.saclink.csus.edu/) to make an appointment. **If you are in immediate crisis, please call 9-1-1 or the Suicide Hotline at 1-800-273-TALK (8255).**

**Food Pantry.** The ASI Food Pantry provides food and basic necessities to Sac State students in need at no cost. Learn more here: [www.asi.csus.edu/programs/food-pantry/](http://www.asi.csus.edu/programs/food-pantry/)

**Sexual Misconduct** If you or someone you know has experienced any type of sexual violence (including harassment, assault, dating or domestic violence, or stalking), there are many confidential and non-confidential resources available on campus. As a faculty member, I am not completely confidential, as I am required to report disclosures of sexual violence to the Office of Equal Opportunity, who will further connect you to support. The completely confidential campus resources are the campus Confidential Advocate (916) 278-5850 and Counseling and Psychological Services (916) 278-6461. You may speak to these confidential resources on campus without the incident being reported to campus officials. You can also contact WEAVE, Inc. Sacramento, which provides confidential support 24 hours a day at (916) 920-2952.

**If you are in immediate danger or need immediate assistance, please call 9-1-1 or if you are on campus, campus police at 916-278-6000.** If it is after hours or the weekend and you need immediate advocacy, please call WEAVE's 24-hour hotline at 916-920-2952.

**Services to Students with Disabilities (SSWD).** SSWD offers a wide range of support services and accommodations for students to ensure students with disabilities have equal access and opportunity to pursue their educational goals. Learn more here: [www.csus.edu/student-affairs/centers-programs/services-students-disabilities](http://www.csus.edu/student-affairs/centers-programs/services-students-disabilities)

**Centers for Diversity and Inclusion.** We have a family of Centers, *Women's Resource Center, Multi-Cultural Center, and PRIDE Center*, that provide students with validation and support, while also engaging the larger Hornet community in coordinated efforts to interrogate and explore identity, promote cultural pluralism, and contribute to social justice. Check them out here: [www.csus.edu/student-affairs/centers-programs/diversity-inclusion](http://www.csus.edu/student-affairs/centers-programs/diversity-inclusion)

**Student Academic Success and Educational Equity Programs (SASEEP).** SASEEP is a multi-faceted unit working to ensure the success of all students on campus through numerous innovative programs. The foremost goals of SASEEP are rooted in the provision of access to a higher education, success in the collegiate setting, and equipping our scholars with tools for life. Specific programs include:

- College Assistance Migrant Program (CAMP)
- DEGREES Project
- Dreamer Resource Center (DRC)
- Education Opportunity Program (EOP)
- Faculty Student Mentor Program (FSMG)
- First Generation Institute (FGI)
- Full Circle Project (FCP)
- Guardian Scholars Program (GSP)
- High School Equivalency Program (HEP)
- Male Empowerment Collaborative
- Migrant Student Leadership Institute (MSLI)
- MLK Scholars
- Native Scholars & Transition Program (NSTP)
- Parents & Families Program
- Peer Academic Resource Center (PARC)
- PERSIST
- Project Hmong
- Serna Center
- U-Mentor

Learn more about the programs here: [www.csus.edu/student-affairs/retention-academic-success](http://www.csus.edu/student-affairs/retention-academic-success)

Note that PARC provides **free** peer tutoring, advising, and supplemental instruction. To make an appointment, go here: [www.csus.edu/student-affairs/centers-programs/peer-academic-resource](http://www.csus.edu/student-affairs/centers-programs/peer-academic-resource)