

# Modern Algebra 2

MATH 110B – 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/)

📖 **Catalog Description.** Second half of a one-year introductory course in algebraic concepts. Topics include: rings and fields. Applications may be selected from lattice, machine, and coding theories.

✔️ **Prerequisites.** Math 110A (Modern Algebra 1).

📖 **Book.** We will use the (in-progress) open-source book *Insolvability of the Quintic*, by [me](#). The book will be posted on our course website at

[webpages.csus.edu/wiscons/teaching/math110b\\_f19.html](http://webpages.csus.edu/wiscons/teaching/math110b_f19.html)

⚙️ **Learning Outcomes** In this course, students will (1) increase their capacity for critical thinking and fact-based reasoning, (2) develop the necessary competency with group, ring, and field theory 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 student presentations.

🗣️ **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.

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## Course Components

*Homework.* Homework will *usually* be assigned each class meeting, due at the next meeting. You are *allowed and encouraged* to work together, but you are expected to **write up your solutions on your own**. All assignments should be **carefully, clearly, and cleanly written**, including proper grammar, punctuation, and spelling. These assignments will be graded on a ✓-system.

On each assignment, you are **required** to clearly reference all outside resources<sup>1</sup> that you used, or write “no outside resources used.” This is very important!

My hope is that you do not use outside resources—this will have the most benefit for you. A ✓<sup>+</sup> will not be given when outside resources are used, and heavy use of these may further lower grades.

*Presentation and Participation.* Learning to discuss mathematics is a highly valued part of this course. This component will evaluate your progress in areas such as ability to describe a solution (with clarity and thoughtfulness), ability to share and shed light on your difficulties, and ability to listen critically and respond accordingly. *The best way to excel in this component is to be engaged with your group each day, active in class-wide discussions, and prepared to present at the board.* Repeated absences will impact this portion of your grade.

### Presentation Rubric

E	EXCEEDS EXPECTATIONS. Thorough and detailed solution; exceptionally clear and thoughtful presentation.
M	MEETS EXPECTATIONS. Well-thought out approach capturing the key ideas; clear presentation.
I	IN PROGRESS. Serious attempt, but has a significant flaw/gap or lack of clarity.
U	UNSATISFACTORY. Minimal or no progress was made.

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<sup>1</sup>The following are **not** considered outside resources: your classmates, me, our book (which does contain some hints).

## Participation Rubric

E	EXCEEDS EXPECTATIONS. Always engaged, supportive of your classmates, and eagerly contributing to meaningful class discussions (while including everyone). Essentially always attends class.
M	MEETS EXPECTATIONS. Consistently engaged, respectful, and attempting to contribute to meaningful class discussions. In addition, the student regularly attends class.
U	UNSATISFACTORY. Often disengaged or disrespectful or frequently absent.

## Overall

90–100%	Receives M/E for participation; has at least 3 M/E presentations prior to each midterm.
80–89%	Receives M/E for participation; has at least 2 M/E presentations prior to each midterm.
70–79%	Receives M/E for participation; has at least 1 I/M/E presentation prior to each midterm.
60–69%	Receives U for participation; has at least 1 I/M/E presentations over semester.
< 60%	Receives U for participation; never presents or all receive a U.

*Writing Assignments.* These will be due most **Sundays** by 7PM and must be typed up with  $\LaTeX$ . Becoming proficient with  $\LaTeX$  is one of the aims of the course—I will support you as much as needed with this.

Take great care not to plagiarize or allow your own work to be plagiarized.

*Exams.* There are 2 take-home midterm exams *tentatively* scheduled to be handed out Oct. 3 and Nov. 14 and each due 5 days later.


*Final Project.* There is a Final Project due Friday Dec. 13 at 11:30PM. We will also meet Thursday, Dec. 12 from 10:15AM–12:15PM (during the scheduled time for our “final exam”) to work on the final project.

## Grade Composition

Homework	12.5%	
Writing Assignments	12.5%	
Discussion and Participation	15%	
Midterm Exams	40%	(20% × 2)
Final Project	20%	

*In general, letter-grades cutoffs will be standard: A 100–90%, B 89–80%, C 79–70%, D 69–60%, F 59–0%.*

**Accommodations.** Any student needing academic adjustments or accommodations should speak with me privately as soon as possible. If you have one, 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).

 **Focus on Writing** Mathematics is deeply concerned with asking questions, solving problems, generalizing existing results, and uncovering new connections, but the end product is always a precise, concise, and thorough article. An “advance” in mathematics is not worth much until others believe and understand it. One major goal of this course is to improve the students’ ability to write logically precise, well-structured, and well-justified mathematics. Supplementing this goal, the course aims to build proficiently in typesetting mathematics with  $\LaTeX$ .

We will discuss these issues both in and outside of the classroom, and you are strongly encouraged to solicit feedback from me on your rough drafts. Revisions to your final drafts will be by invitation only.

**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.

**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)