

Math 6A-001: Introduction to Functions

Introduction to College Mathematics for the Sciences I, Spring 2019

Instructor: Xavier Ramos Olivé

Pronunciation tip: My first name is pronounced like “Chabee”

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Name tip: call me by my first name, no need for formalities

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Office Hours: Posted on Canvas “Office Hours & Contact Information” and **held in the Annex to the Bookstore** or online.

Changes will be posted on Canvas & announced. Additional hours can be arranged in person or via email.

Course Sites: [Canvas](#): Main course website.

login.uconline.edu/

[Rational Reasoning](#): Online workbook, textbook & videos.

rationalreasoning.net

[iMathAS](#): Online homework (also accessible via RR)

imathas.rationalreasoning.net/

Additional resources: [Kahoot!](#), [Desmos](#), [GeoGebra](#)

Text: *Precalculus: Pathways to Calculus: A Problem Solving Approach* by Carlson, Oehrtman, & Moore. (Ed.7)

These materials include an eworkbook, an ebook, online homework, embedded videos, & interactive applets to help further your understanding of the concepts covered in this course and 6B. You can purchase these materials at:

<https://rationalreasoning.net/amember/signup/ucr> for \$50 or at the [bookstore](#) for \$62.80. **Please set-up your**

account with your UCRNetID@ucr.edu email address for grading purposes. If you purchased Edition 6, you can

upgrade to Edition 7 for free here: <http://www.rationalreasoning.net/ucrupgrade>.

iMathAS homework sign up: course id **929** course enrollment key **wecanalldomath**.

Course Description. This course will prepare you for calculus by focusing on developing deep conceptual understanding and quantitative reasoning. You will develop algebraic proficiency and skills to understand and describe the behavior of functions, especially of linear, exponential and logarithmic functions.

Course Content. *6A covers Modules 1-4 and 6B covers Modules 5-8.*

- Module 1. Practicing Symbolic Reasoning
- Module 2. Reasoning About and Representing Quantitative Relationships
- Module 3. Formalizing Relationships Between Quantities: Functions
- Module 4. Exponential and Logarithmic Functions.
- Add-Ons: Systems of Linear Equations, Transformations, and Graphs of Exponentials & Logarithms.

Course Outcomes.

- Understand key elementary functions and concepts verbally, visually, numerically, and symbolically.
- Develop skills to analyze if two mathematical expressions are equivalent.
- Develop and refine logical reasoning skills.
- Create functions that model real world situations.
- Develop quantitative reasoning skills and evaluate accuracy of solution using these skills.
- Demonstrate equivalence of algebraic expressions by means of the basic principles of algebra.
- Demonstrate covariational reasoning using verbal descriptions and graphs to discuss how the value of a function changes with its argument. Use the concept of rate of change to analyze this behavior.

The Path. I want each and every one of you to succeed and will help you to do so, but in the end of the day your learning is up to you. Take the initiative to be responsible for your own learning.

- **PREPARE.** *Before each class, review material from last class & look at the new material in the ebook.*
- **OWN IT!** *Take ownership of your own learning.*
- **CHECK IT!** *We all make mistakes. Check your work & ask yourself, does your answer make sense?*
- **PERSIST!** *Persist and work through perceived failure.*

“Tell me and I forget, teach me and I may remember, **involve** me and I learn.” Benjamin Franklin

- **COLLABORATE.** Positive experiences working in groups has been shown to contribute to overall learning, retention, & college success. You gain valuable skills like how to explain concepts to others and you get a support network that can help you learn the material better.
- **PARTICIPATE ACTIVELY.** Don't be a passive learner just taking notes.
Ask questions. Chances are, others have the same question and will appreciate you asked.
Stay focused. It is your responsibility
Answer questions. Posed on Kahoot!, by the instructor, by other students.

Course Components and Grading Policy.

Worksheets are 106 points (21.2%), the **syllabus survey** is 9 points (1.8%), **homework** is 80 points (16%), **participation** is 25 points (5%) *plus* up to 25 points extra credit, **effective failure** (persist through perceived failure and learn from it) is 10 points (2%), the **midterm** is 100 points (20%), and the **final** is 170 points (34%). There are a **total of 500 points** possible in the course.

Weekly Journal. Every Tuesday, review all your course materials (eg notes, homework, workbook, textbook). In discussion, you will write a summary of the important concepts from the course that week and share them with your TA and the rest of the class. This journal is a valuable learning tool for you.

Worksheets. Worksheets are done during discussion session and you are encouraged to work with a partner. The introductory worksheet is 8 points. Worksheets 1-8 are each worth 14 points. There are no makeup worksheets -- instead your lowest worksheet 1-8 score will be dropped.

Homework. Assignments are online on iMathAS (<https://imathas.rationalreasoning.net/>) ordered by investigation and are generally due on Wednesdays & always at 11:59 pm. *If you see a different time, your browser for iMathAS is on the wrong timezone.* However, it is your responsibility to check the due dates of all assignments. You are strongly encouraged to use the iMathAS forum to ask & answer questions. **Forum etiquette:**

- When you ask a question, include the work you have done and where you are getting stuck. Put careful thought into your post and do not simply ask: "how do I do this?"
- When you answer a question, give a verbal explanation so that your classmate can truly **learn** from your reply *beyond* the setting of the exercise they are working on.

Participation. Points are based on attendance, participation and correctness via Kahoot! (a free clicker-like system). You can earn up to **20 points for participating** and up to **30 points for correctness**. Since participation is 25 points of your grade, you can earn *up to 25* points of extra credit. So try your best!

Exams. Typically make-up exams are not possible. In case you have a time conflict with either of the exams, please contact the professor (olive@math.ucr.edu) as soon as possible.

Midterm. In-class, Friday, May 3. **Final.** Thursday, June 13, 3:00 p.m. - 6:00 p.m.

Letter Grades.

A+	> 97%	>485 pts	B+	87-90%	435-450	C+	77-80%	385-400	D	60-70%	300-350
A	93-97%	465-485	B	83-87%	415-435	C	73-77%	365-385	F	< 60%	<300 pts
A-	90-93%	450-465	B-	80-83%	400-415	C-	70-73%	350-365			

Course components (including exams) are not curved.

You will have the opportunity to submit midterm redos to earn some points back on your midterm.

Resources. *Use your resources early & often, they are there to help you succeed!*

Resources include: Professor & TA office hours, Math Emporium, Supplemental Instructor sessions, peers, ARC,

course materials (eg workbook, ebook, videos), online graphers such as desmos.com, & more.

Accessibility. Please visit the Student Special Services website if you want to find out more about requesting special accommodations: <http://specialservices.ucr.edu/disabilities/>.

Cheating. Cheating in *any* part of the course will result in an **F** in the course. In addition, your grade may be withheld and the instructor may report your cheating to the university for disciplinary action. ***Don't cheat!***
Cheating includes (but is not limited to):

- copying or using someone else's work and submitting it for credit;
- sharing information about content on a worksheet/exam if one party has not taken it yet;
- intentionally allowing someone to copy your work.