

*Course Information*

<b>Course Number:</b>	Math 2335
<b>Course Name:</b>	Transition to Advanced Mathematics
<b>CRN:</b>	14194
<b>Location:</b>	MCS 220
<b>Class Hours:</b>	Tuesday and Thursday 9:25am – 10:40am
<b>Textbook:</b>	A Transition to Advanced Mathematics by Smith, Eggen, & St. Andre. 8 <sup>th</sup> Edition
<b>Prerequisites:</b>	Math 1497 (Previously or currently)

*Instructor Information*

<b>Name:</b>	Dr. Jeffrey Beyerl
<b>Office Location:</b>	MCS 231
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<b>Phone:</b>	501-450-5681

**Course Description**

This course is an introduction to the language and methods of advanced mathematics. The student will learn the basic concepts of formal logic and its use in proving mathematical propositions. Specific topics that will be covered may vary depending upon the instructor, but will include basic number theory and set theory.

**Office Hours**

My availability changes every day. Go to the website below for up to date availability.

While appointments are preferred, walk-ins are also welcome: if my office door is open, I'm available. However, if somebody with an appointment comes, they will receive priority.

Office Hours Website: <https://ucamath.youcanbook.me/>

**Computers**

- As part of this course you'll learn how to type mathematics on a computer.
- You'll see me typing mathematics during class.
- You will need to learn to type mathematics.
- Computer programming knowledge is not required.

**Course Objectives and Requirements**

The primary goal of this course is to develop an understanding of logic and the deductive thinking process used in mathematics.

## Grading Policy

- **Coursework**

Coursework consists of everything that does not fall into other categories. This includes, but is not limited to:

- Homework
- Quizzes
- Projects
- Participation during in class activities and discussions
- Any extra credit given for one reason or another

- **Video Problem Presentations**

There will be five video presentations. You will illustrate the solution to a couple problems and provide peer review on other students' presentations.

- **Tests**

Three tests will be traditional in class written tests. The fourth test will be an Oral Exam. Each test will be cumulative.

- **Borderline Grades**

Borderline grades will be determined at the instructor's discretion based on the final exam and/or the quality of your work throughout the course.

Test 1	12%
Test 2	12%
Test 3	12%
Test 4 (Oral)	10%
Video Problem Presentations	15%
Coursework	20%
Final Exam	19%

**Question:** What will homework be like?

**Answer:** Homework comes in combinations of these 4 flavors:

- (1) Computational problems
- (2) Theoretical problems
- (3) Problems that focus on mathematical logic
- (4) Typed problems



**Question:** What will tests be like?

**Answer:** Testing this material is interestingly awkward. If you understand it, they are fantastically easy. If don't understand it, they are likely to seem impossible.



### Student Learning Objectives

- Be able to construct mathematical proofs using formal logic and quantification.
- Be able to analyze mathematical proofs.
- Be able to illustrate relationships between sets and prove statements involving sets.
- Be able to construct and analyze mathematical proofs involving relations, functions, and cardinality.
- Be able to describe common proof techniques in a nonspecific manner.

### Important Dates

Last day to Drop Drop means the course is not on your record	Wednesday, August 31 <sup>st</sup>
Video Problem Presentation 1 Due	Sunday, September 4 <sup>th</sup>
Video Problem Presentation 2 Due	Sunday, September 18 <sup>th</sup>
Test 1	Thursday, September 22 <sup>nd</sup>
Midterm Grades Posted	Monday October 3 <sup>rd</sup>
Video Problem Presentation 3 Due	Sunday, October 9 <sup>th</sup>
Test 2	Tuesday, October 18 <sup>th</sup>
Video Problem Presentation 4 Due	Sunday, November 6 <sup>th</sup>
Midterm Grades Posted (again)	Tuesday, November 15 <sup>th</sup>
Last day to Withdraw Withdraw means the course is on your record with a "W" but does not factor into your GPA. Talk to your professor, advisor, and financial aid officer before withdrawing.	Wednesday, November 16 <sup>th</sup>
Video Problem Presentation 5 Due	Sunday, November 20 <sup>th</sup>
Asynchronous Day	Tuesday, November 22 <sup>nd</sup>
Test 3	Thursday, December 1 <sup>st</sup>
Test 4 (Oral)	Week of December 5 <sup>th</sup> -8 <sup>th</sup>
Final Exam	Tuesday, December 13 <sup>th</sup> 8:00-10:00am
Final Grades Posted	Saturday, December 17 <sup>th</sup>

### Study Groups

Formal study groups will be offered on an ad-hoc basis. Each student may lead up to 4 study groups for 5 bonus points each. See Blackboard for details and signups.

## Outside of class resources

- The Textbook
  - Description of material
  - Example problems
  - Exercise problems
  - Homework problems
- Blackboard
  - Quiz/test solutions
  - Notes from class
- Office Hours
  - Individual help
  - Availability changes every day. See <https://ucamath.youcanbook.me/> for up to date availability
- Previous course materials
  - <http://faculty.uca.edu/jbeyerl/courses.html>
- The Math Resource Lab
  - Study Area
  - Tutors available throughout the day
- Academic Success Workshops
  - <https://uca.edu/studentssuccess/online-learning-success/>
- Peer Coaching (time management skills, study skills, motivation!)
  - <http://uca.edu/studentssuccess/successcoaching/>
- Communication Skills (oral and written)
  - <http://uca.edu/cwc/>

## Expected Study Time

A good rule of thumb is that to be successful in a college course, you should work on your own two hours for every one hour of lecture. This course has 3 hours of lecture per week, so you should plan on studying 6 hours per week for this course. If you are well prepared you may need to study less; if you are not well prepared you may need to study more. If this is your first semester in college, please experiment with different study techniques throughout the course of the semester to figure out what works best for you. You can schedule a study technique consultation during office hours if you would like assistance developing a study plan.

## Department of Education Standards

This course addresses standards within Arkansas Department of Education Mathematics 7-12 Competencies for Secondary Teachers, and the Arkansas Teaching Standards. The standards covered in this course can be found in spreadsheets C.4.a.ii (Math 7-12 Competencies, <https://tinyurl.com/yc65ndr3>) and C.4.a.iii (Arkansas Teaching Standards, <https://tinyurl.com/3hh3rmhj>).

## Late Work & Absences

Late homework from an excused absence can be turned in with no penalty within 1 week; 20% after that.

Late homework from an unexcused absence can be made up with a 20% penalty within 1 week; 50% after that.

VPPs may be turned in late for a 20% penalty within 5 days; a 50% penalty after that.

Tests take a bit more care to deal with; they will fall into one of three categories:

1. A pre-arranged absence where you take the test before you are absent. *Contact me 7-10 days before the test to make arrangements to take the test. You should do this regardless of whether or not you or a coach contacted me at the start of the semester with your athletic schedule.*
2. An extenuating circumstance where you miss the test. Either you will take a similar make-up test or the score will be replaced by the final exam.
3. An unexcused absence. The score will remain a 0%.

The instructor will decide at his digression which category your absence falls into. I am both understanding and firm, but I recognize that sometimes “life happens”. When in doubt, send me an e-mail. Examples:

- You are the best man at a wedding that takes place on a test date. You don't contact me beforehand and show up the day after the test hoping to take a make-up. This is an unexcused absence because you knew about the wedding ahead of time and should have made arrangements to take the test before you left. The test will be recorded as a 0%.
- You are traveling home from a wedding on test date. You met with me during the first week of classes to tell me about the conflict, I said it would be okay but to remind me a week before the test. One week before the test you e-mail me that you'll be gone on both Wednesday and Thursday next week. You take the test on Tuesday before you leave for the wedding.
- You were the one getting married at the wedding, but the wedding was before the test date so you expected to be back in time for the test. However, your would-be spouse left you at the altar. The ensuing emotional distress caused you to skip the test because you just didn't care. If you're able to take the test before the next class session, you can take a make-up. Otherwise, the final exam will replace the test score. Either way, this assumes you provide some reasonable documentation about your circumstance so I know you just didn't make the story up.

**Attendance Policy**

Your active participation in this course is expected and required for you to learn the material and earn a passing grade. If you miss more than two weeks of class meetings throughout the term, you may be administratively dropped from the course.

**Academic Integrity Statement**

The University of Central Arkansas affirms its commitment to academic integrity and expects all members of the university community to accept shared responsibility for maintaining academic integrity. Students in this course are subject to the provisions of the university's Academic Integrity Policy, approved by the Board of Trustees as Board Policy No. 709 on February 10, 2010, and published in the Student Handbook. Penalties for academic misconduct in this course may include a failing grade on an assignment, a failing grade in the course, or any other course-related sanction the instructor determines to be appropriate. Continued enrollment in this course affirms a student's acceptance of this university policy.

Academic integrity is taken seriously: cheating on a test will result in a failing grade in the course; allowing another student to copy off of your test will result in a one-letter-grade penalty.

**Americans with Disabilities Act Statement**

The University of Central Arkansas adheres to the requirements of the Americans with Disabilities Act. If you need an accommodation under this Act due to a disability, please contact the UCA Office of Disability Services, 450-3613.

**Title IX disclosure:**

If a student discloses an act of sexual harassment, discrimination, assault, or other sexual misconduct to a faculty member (as it relates to "student-on-student" or "employee-on-student"), the faculty member cannot maintain complete confidentiality and is required to report the act and may be required to reveal the names of the parties involved. Any allegations made by a student may or may not trigger an investigation. Each situation differs and the obligation to conduct an investigation will depend on those specific set of circumstances. The determination to conduct an investigation will be made by the Title IX Coordinator. For further information, please visit: <https://uca.edu/titleix>. \*Disclosure of sexual misconduct by a third party who is not a student and/or employee is also required if the misconduct occurs when the third party is a participant in a university-sponsored program, event, or activity.

**Sexual Harassment and Academic Policies Statement**

All students are required to familiarize themselves with the University of Central Arkansas policy on sexual harassment and on academic policies. These policies are printed in the Student Handbook.

**Building Emergency Plan Statement**

An Emergency Procedures Summary (EPS) for the building in which this class is held will be discussed during the first week of this course. EPS documents for most buildings on campus are available at <http://uca.edu/mysafety/bep/>. Every student should be familiar with emergency procedures for any campus building in which he/she spends time for classes or other purposes.

### **Departmental Program Assessment**

Toward the end of the semester there will be an assessment that will be used both for this course and for program assessment. Program here refers to the math major program that the department of mathematics runs.

### **Pandemic Information**

- All students are expected to know and comply with university policy related to Covid-19. For information and resources, see <https://uca.edu/coronavirus/>. At the time of this writing, masks are optional.
- I've been vaccinated. You are encouraged to get vaccinated if you haven't yet. If I had access to information that everyone in our course has been vaccinated for COVID, that would be stated here.
- If you are sick, do not come to class. E-mail me and I will make individual accommodations based on the information you provide.
- If we are directed to pivot online and cease in person meetings, we will meet synchronously on Zoom.
- If we are directed to limit in-person seating below the enrollment of the course, we will cease in person meetings and meet synchronously on Zoom.