Course Information

Course Number:	Math 2335
Course Name:	Transition to Advanced Mathematics
CRN:	20540
Location:	MCS 220
Class Hours:	Tuesday and Thursday 10am-10:50am MWF
Textbook:	A Transition to Advanced Mathematics by Smith, Eggen, & St. Andre. 8th Edition
Prerequisites:	Math 1497

Instructor Information

Name:	Dr. Jeffrey Beyerl
Office Location:	MCS 231
E-mail:	jbeyerl@uca.edu
Phone:	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. When you schedule an appointment, please specify what you're coming for.

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
• Each homework assignment has a written and typed portion
• Computer programing 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

- **Participation**

  On many occasions we will have activities in class that you are expected to participate in. To receive full participation credit you should both participate in the activities and consistently share your ideas when appropriate. Unexcused absences and tardiness will affect your participation score negatively.

- **Oral Problem Presentations**

  Oral problem presentations are in Dr. Beyerl's office. Each student will sign up for a time to meet with the instructor.

- **Tests**

  Three tests will be traditional in class written tests. The fourth test will be an Oral Exam. Each student will sign up for a time to meet with the instructor. During the oral exam, you will solve the problems on a whiteboard and explain your reasoning. 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	15%
Test 2	15%
Test 3	15%
Test 4 (Oral)	10%
Homework	10%
Oral Problem Presentations	5%
Quizzes	6%
Participation	4%
Final Exam	20%

Question: What will homework be like?

Answer: Homework comes in 3 flavors:

    (1) Written computational problems

    (2) Written theoretical problems

    (3) Typed problems that are used to develop mathematical grammar and communication skills

Homework will come from both the textbook and Dr. Beyerl's supplementary problem list.

Question: What will tests be like?

Answer: Tests in this course will have some problems very similar to the homework, and some problems that require applying what you've learned to new problems.

Calculating Grades on Proof Problems

Computational and conceptual problems will be graded on a standard scale: 90-100 for an A, 80-89 for a B, etc. However, proof problems will use the table below. At the end of the semester, scores for proofs are then quantified using the values appropriate for the final exam.

Week	A+	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F+	F	F-
1/13-1/17	67	62	57	55	52	47	45	42	37	35	32	27	17	2	1
1/20-1/24	73	68	63	61	58	53	51	48	43	41	38	33	23	8	2
1/27-1/31	78	73	68	66	63	58	56	53	48	46	43	38	28	13	3
2/3-2/7	82	77	72	70	67	62	60	57	52	50	47	42	32	17	4
2/10-2/14	85	80	75	73	70	65	63	60	55	53	50	45	35	20	5
2/17-2/21	87	82	77	75	72	67	65	62	57	55	52	47	37	22	7
2/24-2/28	89	84	79	77	74	69	67	64	59	57	54	49	39	24	9
3/2-3/6	91	86	81	79	76	71	69	66	61	59	56	51	41	26	11
3/9-3/13	93	88	83	81	78	73	71	68	63	61	58	53	43	28	13
3/16-3/20	95	90	85	83	80	75	73	70	65	63	60	55	45	30	15
Break															
3/30-4/3	96	91	86	84	81	76	74	71	66	64	61	56	46	31	16
4/6-4/10	97	92	87	85	82	77	75	72	67	65	62	57	47	32	17
4/13-4/17	98	93	88	86	83	78	76	73	68	66	63	58	48	33	18
4/20-4/24	99	94	89	87	84	79	77	74	69	67	64	59	49	34	19
Final Exam	100	95	90	88	85	80	78	75	70	68	65	60	50	35	20

Minimum score required for each grade during each week. For example, for a proof due on 2/6, a 67% is a B, but a 66% would be a B-.

Rationale and explanation: An important part of this course is learning how to communicate mathematics through proofs. As such, the expectation at the beginning of the course is different from the exaptation toward the end of the course. This is why proofs will be graded with an increasing expectation throughout the course. Work submitted on the first week could be passing, while the identical work halfway into the semester could be failing because you should be able to write better proofs halfway into the semester.

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	January 15th
Oral Problem Presentation 1	February 17th-21st
Test 1	February 7th
Oral Problem Presentation 2	March 16th-20th
Test 2	March 6th
Last day to Withdraw Withdraw means the course is on your record with a "W" but does not factor into your GPA	March 30th
Test 3	April 17th
Test 4 (Oral)	April 20-23rd
Final Exam	Monday April 27th 8am-10am

Outside of class resources

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

Late Work
Homework assignments may be turned in late for a 20% penalty. They will be kept by the instructor; at the end of the semester if there is a chance they can affect your course letter grade, they will be graded.

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 consolation during office hours if you would like assistance developing a study plan.

Excused Absences
If you are part of an organization that includes official university trips, you will be excused from each day that you are on travel as long as you contact me each time to make arrangements for any missed work. It is your responsibility to make arrangements to make up any missed work before you leave for the trip. If you are going to miss a test or quiz, you must contact me approximately one week beforehand to make arrangements for the make-up, preferably by email.
For personal emergencies, you should contact me when it is safe and reasonable to do so, include documentation of the emergency. At his discretion, the instructor may choose to administer a make-up, issue a zero, or use the final exam to replace the missing test or quiz.

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.