

COURSE INFORMATION Location: MTH 215
 Class Times: MWF 9:00-9:50
 Instructor: Dr. Karl Frinkle
 Office: MTH 112
 Office Hours: MTWR 12:30-14:00, TR 9:00-9:50, or by appt.
 E-mail: kfrinkle@se.edu
 Website: <http://homepages.se.edu/kfrinkle>

TEXT *Fundamentals of Mathematical Proof*, by Charles Matthews

COURSE PREREQUISITES MATH 2315 or departmental approval.

COURSE OVERVIEW In this course, we will cover topics from the following list (we may cover items not on this list as well):

- proof techniques
- functions
- relations
- induction
- countability

We will spend a significant portion of in-class time solving problems from the text. It is expected that you will attempt these problems before class, and you may be asked to present your work in front of the class.

COURSE WORK Please view the schedule pdf on BlackBoard on a regular basis for the most up-to-date information. The schedule will also list the homework exercises you are to work out for each section. There will be three in-class hour-long exams, and a final exam. The final exam may or may not be cumulative, depending on how much material we cover throughout the semester.

LEARNING OBJECTIVES The following objectives will be met in this class:

1. construct truth tables and determine if two logical statements are equivalent
2. construct direct proofs and proofs by contraposition
3. construct proofs by contradiction
4. show that a mathematical statement is false by using a counterexample
5. construct proofs of statements involving single or nested quantifiers
6. construct proofs using the Principle of Mathematical Induction
7. construct and make use of recursive definitions of mathematical objects
8. write down definitions of the mathematical terms covered in the course from memory
9. prove that not all infinite sets have the same size

GRADING POLICY The work you will do in this course which will add to your final grade can be categorized as follows:

- **Homework:** Homework will be assigned on a section-by-section basis. Each homework will be given a grade, and the resulting average is worth 40% of the course grade. If you do not receive full credit on a problem, you will have the opportunity to redo the problem an unlimited

number of times in an attempt to receive full credit. I may request that you stop by my office and explain the solution to a problem in certain circumstances.

- **Class Participation:** You will be expected to be an interactive part of the face-to-face learning experience. This facet of the course will be worth 10% of your final grade.
- **Exams:** There will be at least four exams in this course, counting for a total of 50% of your final grade. These exams will be in-class, and you will not be able to use your notes or the text.

Rounding to the next letter grade is not automatic and will be at the discretion of the instructor. The grading scale is as follows:

Letter Grade	Percentage Range
A	90-100 %
B	80-89 %
C	70-79 %
D	60-69 %
F	0-59 %

MANDATORY
STATEMENTS

Mental Health Support: Any student (in-person or online) who desires free, confidential, mental health services is encouraged to contact Student Wellness Services at (580) 745-2988, during business hours, to discuss the options currently available to them. For 24-hour emotional crises, you may call the National Lifeline at 1-800-273-TALK (8255) or use the online chat at suicidepreventionlifeline.org/chat/.

Disability Accommodations: Any student needing special accommodations due to a disability should contact the Office of Disability Services, GDJ Student Union Room 328 or call (580) 745-3036. It is the responsibility of each student who anticipates or experiences barriers to their academic experience to make an official request for disability related accommodations in a timely manner. If you have questions regarding disability accommodation process or policy please contact Tiffany Tate, ttate@se.edu for more information.

Equity and Non-Discrimination Statement: Southeastern Oklahoma State University, in compliance with all applicable federal and state laws and regulations, does not discriminate on the basis of race, color, religion, national origin, sex, age, disability, sexual orientation, gender identity, or status as a veteran in any of its policies, practices, procedures, or programs. This includes, but is not limited to: admissions, employment, financial aid, and educational services. Inquiries regarding non-discrimination and equity policies may be directed to: Michael Davis, Title IX Coordinator, (580) 745-3090, or mdavis@se.edu

Academic Dishonesty: Academic dishonesty of any kind will not be tolerated. You may fail an assignment, fail the course or be expelled from the University for academic dishonesty. As a student, it is your responsibility to be familiar with and abide by The Student Code of Conduct, which may be viewed in the Student Handbook. Please note that your own original work is expected for all assignments that you submit. Ignorance is not generally accepted as an excuse.

COVID
STATEMENTS

Conversion to Online Format: Southeastern students should be aware that in the event of an announced extended University closure due to emergency reasons (including but not limited to: controlling outbreaks such as COVID or flu, weather, issues with campus facilities, etc.) onsite classes may be converted to an online/remote format. Students should plan ahead to ensure they have access to the computer equipment (either PC, MAC, or tablet), webcam, and internet connectivity to continue their classes in an online/remote format. Please read all of your official Southeastern student emails as the transition from onsite to online/remote might require a reorganization in your personal situation. Students will be granted a 72-hour transition and grace period. Online classes will continue as scheduled without disruption unless otherwise announced. When these situations

arise stay safe and contact your Instructor as the situation requires. This policy was updated on June 11, 2021 and is subject to change.

Face Coverings: Southeastern has removed the previous guidance requiring that masks be worn on campus. The voluntary wearing of masks is still allowed per current CDC guidance. The University strongly recommends masking for all unvaccinated individuals when inside Southeastern's academic, athletic, housing and administrative facilities. Please note that there may be some limited specific areas of campus where mask wearing may be required such as in the student health services area. This policy was updated on June 11, 2021 and is subject to change.

Attendance Policy: The guidance surrounding the current pandemic is starting to change, however, while the numbers may be smaller there is still the possibility that people may become infected with COVID. Due to this some of the attendance policies related to COVID will remain in place as follows: students who are sick or need to quarantine should not attend classes. Students should provide proper notification to campus health officials in accordance with the guidelines stated below. (<https://form.jotform.com/201426138264046>)

Faculty will:

- Set attendance policies which should include notifying students regularly about important course information and delivery changes through Blackboard and campus email.
- Consider the overall health of the University community when implementing attendance policies.

Students will:

- Provide notification to campus officials (<https://form.jotform.com/201426138264046>) if they have tested positive for COVID-19 or have to quarantine so we can confirm the reported absence with instructors, monitor, and assist the campus community.
- Notify instructors in advance of the absence.
- Keep up with and/or make up missed classwork or assignments.
- Submit assignments digitally through Blackboard or other means as announced by your instructor.
- Work with their instructors to reschedule exams, labs, and other critical academic activities as allowed and described in the course syllabus.
- Check Blackboard and campus email daily to receive important announcements pertaining to the course.

At this time, all faculty will still continue to establish assigned seating to facilitate roll-taking, and, if necessary, contact tracing. While social distancing is no longer required, quarantines for those who test positive and for those who are vaccinated but show symptoms may occur. Faculty should not ask students if they are vaccinated.

Additionally, we ask all members of the University community to be attentive to their health, and safeguard others, by following the CDC's guideline to "stay home when you are sick." You should stay home if you have symptoms. More information on what to do if you are sick is available at the CDC's website.

These policies and procedures were updated on June 11, 2021 and are subject to change.