

MATH 4351.010

Topology



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Office Hours: MTWF 10:00-11:00 & 2:00-3:30

Course Outline

The following is a tentative weekly outline of the material to be covered. *I reserve the right to change the material and/or sequence.*

1. Set Theory
2. Cardinality, Functions, Images, Inverse Images
3. Topologies
4. Closure, Interior, Neighborhoods, Limit Points
5. Review **Test 1 (2.18)**
6. Bases
7. Introduction to Topological Properties, Second Countability
8. Homeomorphisms
9. Separation Axioms
10. Compactness
11. Review **Test 2 (4.8)**
12. Connectedness
13. Subspaces
14. Product Spaces
15. Metric Spaces
16. **Test 3 (5.11 – 1:00-3:00)**

Grading

Your grades will be computed using three tests and a homework/participation grade. The actual grade percentages are computed as follows:

Your Best Test Grade	35%
Your 2 nd Best Test Grade	25%
Your Worst Test Grade	20%
Your Participation Grade	20%

Course Delivery

This is a face-to-face course with online components that students are expected to access in [Blackboard](#).¹

Required Texts and Materials

A PDF containing all of the notes and problems will be distributed.

Course Information

Student Learning Outcomes

1. **The students will demonstrate factual knowledge including the mathematical notation and terminology used in this course.** Students will read, interpret, and use the vocabulary, symbolism, and basic definitions used in topology including set, cardinality, topology, open, closed, neighborhood, function, limit point, base, homeomorphism, connectedness, compactness, convergence, and metric.
2. **The students will describe the fundamental principles including the theorems arising from the concepts covered in this course.** Students will identify and apply definitions and theorems to various topological spaces, functions and sets. This will include applying theorems related to various separation axioms, closure, connectedness, compactness, continuity, and homeomorphisms.
3. **The students will apply the definitions, theorems and techniques covered in this course to further study or work in this or related fields.** Students will use the reasoning, techniques and factual information from this course to prove theorems related to metric spaces, topologies, and various properties. Students will demonstrate this through written assignments and oral presentations.
3. **Students will solve problems in this and related fields using techniques and**

procedures covered in this course. Students will demonstrate a level of proficiency in solving mathematical problems through the acquisition of logical, theoretical, and manipulative techniques. These techniques include inference, deduction, and research skills obtained through exposure to various theorems and their respective proofs.

General Policies Related to This Course

All students are required to follow the policies and procedures presented in these documents:

- [Angelo State University Student Handbook](#)²
- [Angelo State University Catalog](#)³

Academic Integrity

Students are expected to maintain complete honesty and integrity in all work. Any student found guilty of any form of dishonesty in academic work is subject of disciplinary action and possible expulsion from ASU.

The College of Science and Engineering adheres to the university's [Statement of Academic Integrity](#)⁴ (Page 97).

Accommodations for Students with Disabilities

ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subjected to discrimination by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA) and subsequent legislation.

Student Disability Services is located in the Office of Student Affairs, and is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability. It is the student's responsibility to initiate such a request by contacting an employee of the Office of Student Affairs, in the Houston Harte University Center, Room 112, or contacting the department via email at ADA@angelo.edu. For more information about the application process and requirements, visit the [Student Disability Services website](#).⁵ The employee charged with the responsibility of reviewing and authorizing accommodation requests is:

Dr. Dallas Swafford
Director of Student Disability Services
Office of Student Affairs
325-942-2047
dallas.swafford@angelo.edu
Houston Harte University Center, Room 112

Incomplete Grade Policy

It is policy that incomplete grades be reserved for student illness or personal misfortune. Please contact faculty if you have serious illness or a personal misfortune that would keep you from completing course work. Documentation may be required. See ASU Operating Policy 10.11 [Grading Procedures](#)⁶ for more information.

Plagiarism

Plagiarism is a serious topic covered in ASU's [Academic Integrity Statement](#)⁷ in the Student Handbook. Plagiarism is the action or practice of taking someone else's work, idea, etc., and passing it off as one's own. Plagiarism is literary theft.

Papers are subject to be evaluated for originality. Resources to help you understand this policy better are available at the [ASU Writing Center](#).⁸

Student Absence for Observance of Religious Holy Days

A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. See ASU Operating Policy 10.19 [Student Absence for Observance of Religious Holy Day](#)⁹ for more information.

Title IX at Angelo State University

Angelo State University is committed to providing and strengthening an educational, working, and living environment where students, faculty, staff, and visitors are free from sex discrimination of any kind. In accordance with Title VII, Title IX, the Violence Against Women Act (VAWA), the Campus Sexual Violence Elimination Act (SaVE), and other federal and state laws, the University prohibits discrimination based on sex, which includes pregnancy, and other types of Sexual Misconduct. Sexual Misconduct is a broad term encompassing all forms of gender-based harassment or discrimination and unwelcome behavior of a sexual nature. The term includes sexual harassment, nonconsensual sexual contact, nonconsensual sexual intercourse, sexual assault, sexual exploitation, stalking, public indecency, interpersonal violence (domestic violence or dating violence), sexual violence, and any other misconduct based on sex.

You are encouraged to report any incidents involving sexual misconduct to the Office of Title IX Compliance and the Director of Title IX Compliance/Title IX Coordinator, Michelle Miller, J.D. You may submit reports in the following manner:

Online: [Incident Reporting Form](#)¹⁰

Face to Face: Mayer Administration Building, Room 210

Phone: 325-942-2022

Email: michelle.miller@angelo.edu

Note, as a faculty member at Angelo State, I am a mandatory reporter and must report incidents involving sexual misconduct to the Title IX Coordinator. Should you wish to speak to someone in confidence about an issue, you may contact the University Counseling Center (325-942-2371), the 24-Hour Crisis Helpline (325-486-6345), or the University Health Clinic (325-942-2171).

For more information about resources related to sexual misconduct, Title IX, or Angelo State's policy please visit the [Title IX website](#).¹¹

Information About COVID-19

Please refer to ASU's [COVID-19 \(Coronavirus\) Updates](#)¹² web page for current information about campus guidelines and safety standards as they relate to the COVID-19 pandemic.

Modifications to the Syllabus

This syllabus, including grade evaluation and course schedule, is subject to modification on potentially short notice based on developing circumstances.

¹ <https://blackboard.angelo.edu/>

² <https://www.angelo.edu/current-students/student-handbook/>

³ <https://www.angelo.edu/academics/catalog/>

⁴ <https://www.angelo.edu/live/files/27603-student-handbook-2020-21#page=97>

⁵ <https://www.angelo.edu/current-students/disability-services/>

⁶ <https://angelo.policystat.com/policy/10659448/latest/>

⁷ <https://www.angelo.edu/live/files/27603-student-handbook-2020-21#page=97>

⁸ https://www.angelo.edu/current-students/writing-center/academic_honesty.php

⁹ <https://angelo.policystat.com/policy/10659368/latest/>

¹⁰ <https://www.angelo.edu/incident-form>

¹¹ <https://www.angelo.edu/title-ix>

¹² <https://www.angelo.edu/covid-19/>