

# Syllabus: Math 4361 - 010

## Complex Analysis

### Spring, 2022

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#### Instructor Information

Dr. Andrew J. Siefker

Office: MCS 219B

Phone: 486 - 5440 (office)

Email: [andrew.siefker@angelo.edu](mailto:andrew.siefker@angelo.edu)

Office Hours: M: 10:30 – Noon

T: 9:00 – 10:30 a.m.; 2:30 – 3:30 p.m.

W: 10:30 – Noon; 1:00 – 2:00 p.m.

Th: 9:00 – 10:30 a.m.

F: 10:30 – Noon; 1:00 – 2:00 p.m.

or by appointment

#### Major Course Requirements

**Text:** Several *OER textbooks*

**Prereqs:** Math 2414.

**Grading**

- Exams ..... 2 Exams: 45% each
- Homework and Quizzes .... 10%.
- Final ..... 0%; 5-11-22 (Wed) at 8:00 am  
Final  $\geq 90\%$  - up 1 letter grade; Final  $< 60\%$  - down 1 letter grade.

**Note:** I reserve the right to adjust the grading scheme and grading scale for an individual or the class as warranted. Please note that ASU's interpretation of federal law (Buckley amendment) prohibits me from relaying your grades via phone or email.

#### Fall Math Lab Hours

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
4 p.m. - 8 p.m.	11 a.m. - 8 p.m.	11 a.m. - 8 p.m.	11 a.m. - 8 p.m.	11 a.m. - 8 p.m.	11 a.m. - 3 p.m.

#### Need a Math Tutor?

Students can login to [Upswing](#) to receive online help.

#### Attendance:

Attendance will be taken but does not count towards your final grade except in borderline cases.

**April 28, 2022: LAST DAY TO DROP A CLASS OR WITHDRAW FROM ASU**

## Course Policies:

### Disclaimer

This syllabus is current and accurate as of its posting date, but will not be updated. For the most complete and up-to-date course information, [contact the instructor](#). Also, the subject matter schedule listed below is tentative, and subject to change and adaptation. For current, updated information about course topics, [contact the instructor](#).

### Course Policies:

#### **Homework and Quizzes:**

Homework is regularly collected and quizzes may be administered. When collected, homework is due when the instructor requests it (usually at the beginning of class.) Late homework is not accepted for correction, and receives a grade of ZERO. When given, quizzes count as a homework score and NO MAKE-UP QUIZZES will be given. You must show complete solutions (i.e. all steps and calculations) and write LEGIBLY to receive credit for any problem.

Homework turned in for a grade must follow a specific template. (1) Write the problems in numerical order, in a single column, using only one side of a sheet of paper. (2) Staple multiple sheets of paper together in the upper, left-hand corner. Be certain the problems are in numerical order. (3) Fold your homework longwise so that it opens like a book. Write your name, the course (e.g. Math 1324) and course time (e.g. 9 am), and the home work section number.

#### **Examinations:**

You must show complete solutions (i.e. all steps and calculations) and write LEGIBLY to receive credit for any "essay" problem. Scrap paper will be provided upon request; you may not use your own. If you miss or will miss an exam, contact the instructor ASAP. NO MAKE-UP EXAMS will be administered, and the use of calculators is at the discretion of the professor.

#### **Grades:**

All grades become final one week after the grade is recorded. Therefore, any questions you may have regarding a grade must be resolved before this one week deadline.

#### **Class Etiquette:**

Please be courteous of others in the class including: not utilizing cell phones, silencing cell phones, not habitually arriving late, not leaving during lectures (unless you notify me beforehand), not engaging in non-math related conversations or activities, etc.

#### **Information About COVID-19**

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

## **Student Disability Services**

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](mailto:ADA@angelo.edu). For more information about the application process and requirements, visit the Student Disability Services website at [www.angelo.edu/ADA](http://www.angelo.edu/ADA). The employee charged with the responsibility of reviewing and authorizing accommodation requests is:

[Ms. Dallas A. Swafford](#), Director of Student Disability Services  
325-942-2047  
[dallas.swafford@angelo.edu](mailto:dallas.swafford@angelo.edu)  
Houston Harte University Center

## **Title IX**

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. Sex discrimination, sexual misconduct, public indecency, interpersonal violence, sexual assault, sexual exploitation, sexual harassment, and stalking are not tolerated at ASU. As a faculty member, I am a Responsible Employee meaning that I will report any allegations I am notified of to the Office of Title IX Compliance in order to connect students with resources and options in addressing the allegations reported. You are encouraged to report any incidents to ASU's Office of Title IX Compliance and the Director of Title IX Compliance/Title IX Coordinator. You may do so by contacting:

[Michelle Miller, J.D.](#), Director of Title IX Compliance/Title IX Coordinator  
Mayer Administration Building, Room 210  
325-942-2022  
[michelle.miller@angelo.edu](mailto:michelle.miller@angelo.edu)

**You may also file a report online 24/7 at [www.angelo.edu/incident-form](http://www.angelo.edu/incident-form).**

If you are wishing to speak to someone about an incident in confidence you may contact the *University Health Clinic and Counseling Center* at 325-942-2173 or the *ASU Crisis Helpline* at 325-486-6345.

The Office of Title IX Compliance also provides accommodations related to pregnancy (such as communicating with your professors regarding medically necessary absences, modifications required because of pregnancy, etc.). If you are pregnant and need assistance or accommodations, please contact the Office of Title IX Compliance utilizing the information above.

For more information about Title IX in general you may visit [www.angelo.edu/title-ix](http://www.angelo.edu/title-ix).

### **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](#) for more information.

### **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](#) for more information.

### **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](#).

### **Plagiarism**

Plagiarism is a serious topic covered in ASU's [Academic Integrity policy](#) 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.

In your discussions and/or your papers, it is unacceptable to copy word-for-word without quotation marks and the source of the quotation. It is expected that you will summarize or paraphrase ideas giving appropriate credit to the source both in the body of your paper and the reference list.

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

### **Copyright Policy**

Students officially enrolled in this course should make only one printed copy of the given articles and/or chapters. You are expressly prohibited from distributing or reproducing any portion of course readings in printed or electronic form without written permission from the copyright holders or publishers.

### **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](#)
- [Angelo State University Catalog](#)

## **Student Learning Outcomes**

- 1. The students will demonstrate factual knowledge including mathematical notation and terminology used in this course.** Students will read, interpret, and use the vocabulary, symbolism and basic definitions used in complex analysis.
- 2. The students will describe the fundamental principles including the laws and theorems arising from the concepts covered in this course.** Students will develop and apply the theorems about and the characteristics of complex numbers and functions defined on the complex numbers.
- 3. The students will apply course material along with techniques and procedures covered in this course to solve problems.** Students will apply theorems and results from this class to solve complex variable problems as well as related problems in other areas of mathematics including analysis and topology.
- 4. The students will develop specific skills, competencies and thought processes sufficient to support further study or work in this or related fields.** Students will acquire the skills related to the study of complex variables including integration and differentiation techniques and the results associated to these ideas.

# Course Content

## Required Texts or Readings:

There is no required textbook for this course.

## Subject Matter Schedule

The subject matter schedule listed below is tentative, and subject to change and adaptation. For current, updated information about course topics, [contact the instructor](#).

**Textbook:** Several *OER textbooks*.

Selected portions of the following topics

### Week #

1. Introduction; Origins of Complex Analysis
2. Algebra, Geometry, Topology of the Complex Plane
3. Differentiation
4. Exponential and Trigonometric Functions; **Exam #1**
5. Integration
6. Cauchy – Goursat Theorem
7. Cauchy's Theorem
8. Various Theorems
9. Power Series
10. Taylor Series
11. Laurent Series
12. Residues; **Exam #2**
13. Conformal Transforms
14. Analytic Continuation
15. TBA

- 1 <https://blackboard.angelo.edu/>
- 2 <https://www.angelo.edu/covid-19/returning-to-campus/health-and-safety.php>
- 3 <https://www.angelo.edu/student-handbook/>
- 4 <https://www.angelo.edu/catalogs/>
- 5 <https://www.angelo.edu/student-handbook/community-policies/academic-integrity.php>
- 6 <https://www.angelo.edu/services/disability-services/>
- 7 <https://www.angelo.edu/content/files/14197-op-1011-grading-procedures>
- 8 <https://www.angelo.edu/student-handbook/community-policies/academic-integrity.php>
- 9 [https://www.angelo.edu/dept/writing\\_center/academic\\_honesty.php](https://www.angelo.edu/dept/writing_center/academic_honesty.php)
- 10 <https://www.angelo.edu/content/files/14206-op-1019-student-absence-for-observance-of>
- 11 <https://www.angelo.edu/services/title-ix/>
- 12 <http://www.texastech.edu/downloads/ttus-policy-face-coverings.pdf>