

**Applied Analysis II****Instructor: Dr. Ianna West**NICHOLLS  
STATE UNIVERSITY**Office:** Peltier 106-B**Office Hours:** *For immediate online consultation:* Monday & Wednesday 9:00 AM – 11:00 AM and Friday 9:00 AM – 10:00 AM unless otherwise specified. The instructor will also be available for consultation via email sometimes outside of regularly scheduled online hours. The instructor will reply to emails within 24 hours Monday through Friday. In addition, instructor will be available to answer questions on some weekends and holidays. Student may make an appointment to speak with the instructor by telephone, Skype or Adobe Connect.**Email:** [ianna.west@nicholls.edu](mailto:ianna.west@nicholls.edu)**Phone:** 985-448-4394**Moodle:** <http://moodle.nicholls.edu/moodle/>**Required Textbook:** *Fundamentals of Complex Analysis with Applications to Engineering and Science* 3<sup>rd</sup> Edition by E.B. Saff and A.D. Snider; Pearson Education with ISBN 0-13-907874-6**Required Internet and Resources**

Access to a computer with internet is required. A word processor such as Microsoft Word or a scanner is required. If a word processor other than Microsoft Word is used, the student must convert the file to PDF format. I highly recommend *Mathtype*, a powerful interactive equation editor for Windows and Macintosh that enables us to create mathematical notation for word processing. *Mathtype* works in conjunction with Microsoft Word. *Mathtype* may be purchased at a cost of \$57 online at

<http://www.dessci.com/en/products/mathtype/> .

**Prerequisites:** MATH 557**Catalog Description:** Functions of a complex variable; derivatives; integrals; analytic functions; Cauchy Riemann equations; Cauchy's integral theorem and formula; power series.

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**Student Outcome Objectives:**

Student will be able to:

- perform arithmetic and algebraic operations of complex numbers;
- use the complex plane to illustrate complex numbers;
- express complex numbers in polar form;
- solve problems involving powers and roots of complex numbers;
- describe the extensions of elementary functions to complex numbers including polynomial, exponential, trigonometric, and logarithmic and perform computations involving these numbers
- state and apply the Cauchy-Riemann equations, determine where a complex function is differentiable and where it is analytic, and compute its derivative;

- determine basic mapping properties of elementary functions, including how functions transform simple shapes;
- compute complex contour integrals in several ways including using Cauchy's integral formula;
- find the power series expansions for analytic functions and determine where the series converges;
- compute

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## Course Requirements, Course Content, and Methods of Evaluation

**Minimal Technical Skills and Software:** Students must have knowledge of the internet, including how to access a given website. Students must be able to use different components of the Moodle learning management system (LMS) and Nicholls' email. If the students are not familiar with web-based tools, students should have the ability to familiarize themselves with the necessary web-based tools and/or software either by exploration or tutorials. The links to the Moodle tutorial and other important tutorials are given below. The student must know how to receive and send emails, as well as, reply to an email.

Student must know how to use a word processor such as Microsoft Word or a scanner to submit assignments. Handwritten, scanned assignments must be legible once received by the instructor. If the handwritten assignments are not legible, the student will be required to use Microsoft Word or some other word processor to type the assignment. If a word processor other than Microsoft Word is used, the assignment must be submitted in PDF format, and the mathematical equations, expressions, symbols, etc. must be legible. If the students use a computer to complete their assignments, they must know how to use an equation editor.

**Hardware Requirements and Other Helpful Internet Sites:** The course will be conducted via internet using Moodle and Nicholls' email. The URL for the university's distance learning website is <http://www.nicholls.edu/distance/> . FAQs about internet courses can be viewed at <http://www.nicholls.edu/distance/faqs/> . A download for minimum computer requirements for taking a course on Moodle can be found on the FAQs site given above. A Moodle Tutorial can be viewed at <http://www.nicholls.edu/distance/moodle-tutorial/> .

**On-Campus Meeting or Proctor Requirements:** Students will meet on-campus to take the final exam if he/she lives within a reasonable driving distance of the campus. Distance learners must locate an approved testing facility near his or her home. A list of approved testing centers is given on the Proctor Approval form. **There is a link to the Proctor Approval form on the Moodle Home Page.**

### **Module Folders**

The instructor will post learning objectives, learning activities, assignments, and all pertinent information pertaining to each section's activities every 7 to 10 days on Moodle within Module folders.

### **Reading Assignments and Lecture Notes**

Reading assignments from the book and sometimes lecture notes will be posted on Moodle within the Module folders. Each time a reading assignment and a set of notes with corresponding assignments are posted on Moodle, the students will be notified via email and an announcement will be posted on Moodle

### **Exercise Assignments**

Exercises will be assigned from each section of the book. Students are required to complete all exercises. The exercises are used to assess the students' understanding of the concepts. The students will have 7 to 10 days to complete each assignment depending on the length and/or complexity of the material.

In each Module, the instructor will provide an instruction sheet that will specify the learning objectives and exercise assignments associated with the reading assignments. The final grade for the exercise assignments will be based on the average of all exercise assignments and will be worth 50% of the semester grade. The students will be required to upload all completed assignments in the corresponding Module folder in Moodle. Instructions on how to access and submit assignments and grading rubric for proofs are on the Moodle Home Page.

### ***Discussion Forums***

I will post Discussion Forums on Moodle within the Module folders. Each discussion forum will be worth 10 points. These assignments are to help facilitate discussions with your fellow classmates as well as receive comments from the instructor. The first forum will be for the purpose of introducing yourself to the class. The subsequent forums will correspond to the learning objectives and readings and will be located in the Module folders. Due dates will be given when the forum is posted. You will be required to post your answer to the question and to reply to at least one of your classmate's post. The final grade for discussion forums will be based on the average of all forum grades. The discussion activities will be worth 5% of the semester grade. The criteria for grading the forums is on the Moodle Home Page.

### ***Netiquette***

When posting on forums and writing emails, the students must always follow the rules of netiquette. These rules can be found at

<http://www.albion.com/netiquette/corerules.html> .

### ***Late Submission of Exercise Assignments and Discussion Forums***

Without prior permission from the instructor, students who submit the exercise assignments and forums late will be penalized. If a student needs more time on a particular assignment he or she must contact the instructor in advance to get permission to avoid a penalty. Without instructor permission, if a student submits an exercise assignment or posts on a forum after the deadline, but before the instructor grades the assignments, the student will be penalized 20%. If a student submits an assignment after the instructor has already graded the assignment, the student will be penalized 40%. I am aware that many of you have jobs and families, and unexpected things may occur during the semester. Therefore, it is very important to stay in touch with the instructor if you will be late on any assignment. Do not wait until after the assignment is due to ask for an extension.

### ***Final Exam***

There will be a final exam worth 45% of the semester grade. Students who live out-of-state, or students who do not live within a reasonable driving distance to the Nicholls' campus, may request an alternative location (an approved testing center) to take the exam. Arrangements need to be made by the student in advance. A list of approved proctors is available on the Proctor Approval Form which will be posted on the Moodle Home Page. The Proctor Approval form must be completed by the student and approved by the professor.

***\*\*On-campus Final Exam—Monday, May 7, 2012 @ 1:00 PM\*\****

### ***Distance Learning Form***

A copy of the distance learning Proctor Approval form can be found on the Moodle Home Page. This form is only for students who will take the exam off-campus. The form must be filled out by the student at the beginning of the semester to be approved by the instructor. The student must schedule the test with the approved proctor and send the date and time to the instructor prior to the exam. It is the student's responsibility to let the instructor know whether he or she will be taking the exam off-campus by completing the Proctor Approval form and sending it to the instructor by the deadline date given below. A Test Administration Procedure form will be sent **by the instructor** to the approved testing center

approximately one week before the exam and is to be filled out by the test administrator and returned to the instructor before the day of the test.

**\*\*Proctor Approval Form Due by March 5, 2012\*\***

### ***Semester Grade***

The semester grade will be calculated on a ten point grading scale 90-100 A, 80-89 B, 70-79 C, 60-69 D, below 60 F.

<i>Homework</i>	50%	<b>**Distribution of points may change during the semester**</b>
<i>Discussion Board</i>	5%	
<i>Final Exam</i>	45%	

**Make-up Procedure:** To make up a test, student must have a valid written excuse resulting from an emergency situation since we are only having a final exam.

**Behavioral Policy:** Students must **at no time** be disrespectful toward the instructor. Students must behave in a professional manner at all times. Failure to act in an appropriate manner will not be tolerated and will be handled according to the guidelines outlined in the *Code of Student Conduct*.

**Attendance Policy:** Participation in activities is required where an electronic record which clearly indicates time and date activity was submitted. For financial aid purposes, student must complete at least one activity, which is equivalent to having attended at least one class.

**Academic Honesty Policy:** Cheating will not be tolerated. Sanctions for academic cheating, plagiarism, and forgery of academic documents including signing another's name (Sec 1.9) are those outlined in the *Code of Student Conduct* handbook. Section 5 of the *Code of Student Conduct*, 'Academic Dishonesty and Disruptive Behavior,' includes a requirement that faculty file a charge complaint statement with their respective dean whenever a student is confronted or disciplined for cheating. The Office of Academic Affairs will maintain these records, and any student confronted and/or disciplined for multiple offenses of academic dishonesty will be brought before the Academic Affairs Integrity Committee for further review and potential sanctions. Please read the Code of Student Conduct for further details regarding this policy.

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### **Continued Learning following an Extreme Emergency:**

In order to make continued learning possible following an extreme emergency;

#### ***Students are responsible for:***

- reading regular emergency notifications on the NSU website;
- knowing how to use and access Moodle (or university designated electronic delivery system);
- being familiar with emergency guidelines;
- evacuating textbooks and other course materials;
- knowing their Moodle (or designated system) student login and password;
- contacting faculty regarding their intentions for completing the course.

#### ***Faculty are responsible for:***

- their development in the use of the Moodle (or designated) software;
- having a plan for continuing their courses using only Moodle and email;
- continuing their course in whatever way suits the completion of the course best, and being creative in the continuation of these courses;
- making adjustments or compensations to a student's progress in special programs with labs, clinical sequences or the like, only in the immediate semester following the emergency.

**Academic Grievances:**

The proper procedure for filing grade appeals or grievances related to academic matters is listed in Section 5 of the Code of Student Conduct and at the following link: [http://www.nicholls.edu/documents/student\\_life/code\\_of\\_conduct.pdf](http://www.nicholls.edu/documents/student_life/code_of_conduct.pdf).

**Americans with Disabilities Act:** If you have a documented disability that requires assistance, you will need to register with the Office of Disability Services for coordination of our academic accommodations. The Office of Disability Services is located in 158-A Shaver Gym. The phone number is 985- 448-4430 (TDD 449-7002).

**\*\*The last day to drop this course with a “W” is Wednesday, April 4, 2012\*\***