

**SOUTHERN UNIVERSITY AND A&M COLLEGE  
DEPARTMENT OF MATHEMATICS**

**MATH 463  
INTRODUCTION TO COMPLEX VARIABLES**

COURSE DESCRIPTION: This is an introductory course in Complex Variables for the Mathematical Sciences, Physics and Engineering. Topics include complex numbers, functions of complex variables, differentiation and integration of complex variables, residues and poles, conformal mapping.

PRE-REQUISITE: Successful completion of Mathematics 364 with a grade of C or better, or consent from the Department of Mathematics.

INSTRUCTOR:

Phone: (225) 771-5180

E-mail:

Office Hours:

TEXT: Complex Variables and Applications, James W. Brown & Ruel Churchill, 7th edition, McGraw Hill

LEARNING OUTCOMES:

Upon successful completion of the course the student should be able to exhibit knowledge of the following topics

- (1) Basic algebraic properties of complex numbers
- (2) Complex numbers in exponential form
- (3) Roots of complex numbers
- (4) Functions of a complex variable
- (5) Limits of a function of a complex variable; theorems on limits;
- (6) Continuity of a function of a complex variable;
- (7) Derivatives and differentiation of a function of a complex variable;
- (8) Cauchy-Riemann equations and its applications
- (9) Analytic functions
- (10) Elementary functions of a complex variable;
- (11) Contour integrals; Cauchy-Goursat theorem; Cauchy integral formula and its extension

- (12) Taylor and Laurent's series; convergence of power series;
- (13) Theory and applications of residues and poles
- (14) Theory of conformal mapping

HOMEWORK ASSIGNMENTS: You are strongly urged to work out at least every other odd numbered problem.

QUIZZES/SEATWORK: Expect to have this activity at least once every week.

HOURLY EXAMS AND FINAL EXAM: There will be four 50-minute exams, each worth 50 points and a 2-hr comprehensive final exam, worth 100 points.

FINAL GRADE EVALUATION: Final course grade will be based on 350 points broken down as follows:

4 – Hr exams-----	200 points
Final Exam-----	100 points
Quizzes/Seatwork-----	50 points

and shall follow the usual letter grade conversion:

- A: 90-100%
- B: 80-89%
- C: 70-79%
- D: 60-69%
- F: 59% and below

POLICY ON MAKE-UP AND SPECIAL EXAMS: Make-up exams and any other special exams are usually given only under very special reasons: an illness that required a medical doctors attention or a family crisis. You would want to take the regularly scheduled test since a make-up exam or special exam tend to be more difficult.

ATTENDANCE POLICY: Regular attendance in a math class is a necessary ingredient for the successful completion of the course. Credit for attendance will be reflected in the points earned from weekly quizzes. Missed quizzes are lost opportunities for earned points that can not be made up.

OTHER POLICIES:

On Punctuality: **PLEASE COME ON TIME.** Let the instructor know if consistent tardiness is caused by some unavoidable work or family related reasons.

**LIVETEXT subscription is required:**

Southern University and A&M College-Baton Rouge has entered into partnership with LiveText, Inc. to provide online academic resources for student collaboration and learning outcomes assessment. Therefore, all students enrolled in this course are required to purchase a subscription from LiveText, Inc. through the Southern University Bookstore. LiveText, Inc. provides students with the electronic tools and services needed to serve them in their courses and in their career or academic pursuits beyond graduation.

LiveText is a dynamic tool that will enable you to:

- Create Electronic Portfolios for storing and displaying coursework for use anytime and anyplace;
- Share your résumés, professional portfolios and virtually any projects that can be photographed, video recorded, and uploaded to prospective employers and others who need or want to know about your accomplishments;
- Engage in discussion boards with other students, exchange feedback, and create study groups and other types of social networks.
- Complete assignments in key/required courses where LiveText has been embedded (without LiveText, you will not be able to complete these assignments).
- Create a complete record of your academic career that is malleable and easily accessible.
- Engage in developing a results driven culture of assessment at Southern University.
- Participate in a process that will allow for data-driven curricular improvements that foster improved student learning and performance.

On Academic Honesty and Integrity: As spelled out in the Students' Handbook strict adherence to honesty and integrity in work submitted for credit is expected from every student enrolled in this course.

DISABILITY STATEMENT: If you have a documented disability, then please discuss it with personnel at 771-3546 in Room 246 Blanks Hall. Learners, those considered having a disability, are to provide the professor with a letter from Professor P. Hebert through the Office of Disability Service stating the appropriate accommodations required of this course.

DISCLAIMER: These activities and assignments are tentative. Changes may occur due to assessment of learners by the professor and due to the professor.