



Engineering Division Course Syllabus

Course Title: Engineering Analysis: Complex Variables

Course Number: ENGR-AD-194

Course Description: Course Description: The course covers functions of a complex variable. The topics covered are: Derivatives and Cauchy-Riemann equations. Integrals and Cauchy integral theorem. Harmonic functions, the exponential function, trigonometric functions, logarithmic functions. Contour integrals, anti-derivatives, Cauchy-Goursat theorem, Cauchy integral formula, Liouville's theorem, fundamental theorem of algebra. Power and Laurent Series. Residue theory.

Course Structure: 7 weeks course, 3 lectures per week, 3 Quizzes, 2 Midterm Exams, Final exam.

Credits 2

Prerequisite Courses: MATH-AD 112 Multivariable Calculus

Instructor : Professor Yi Fang

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Text Book : Complex Variables and Application, James Ward Brown and Rule V. Churchill, Eighth Edition

Note : The best way to contact me is by email

Teaching and Learning Methodologies: Lecture is the primary mode of delivery. PowerPoint slides will be provided to the students prior to the lectures. Students will be provided with homework problems, which will not be graded; selected problems from these homework sets will be asked in quizzes. These quizzes will be graded quickly and provided back to the students to enable them to learn from their mistakes. Recitation sessions will be used to review the course material and solve problems.

Grading

Activities	Percentages
Quizzes	20%
Midterm Exam	20%(x2)
Final Exam	40%

Schedule: A typical schedule for course topics, homework, and exam is given in the table below.

<i>Week</i>	<i>Lecture Topic</i>	<i>Quizzes</i>	<i>Exam Schedule</i>
<i>1</i>	<i>Complex numbers</i>		
<i>2</i>	<i>Function of a Complex Variable</i>	<i>Quiz 1</i>	
<i>3</i>	<i>Function of a Complex Variable</i>		<i>Midterm I</i>
<i>4</i>	<i>Integrals</i>		
<i>5</i>	<i>Integrals</i>	<i>Quiz 2</i>	
<i>6</i>	<i>Convergence of sequences</i>		<i>Midterm II</i>
<i>7</i>	<i>Method of Residues</i>	<i>Quiz 3</i>	
			<i>Final Exam</i>