

EHB 235E Theory of Complex Functions Wednesday, 12:30-15:30



Assistant Prof. Dr. Mehmet Nuri AKINCI

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Please check Ninova page and my website regularly for any update.

Course Description: The course aims to give a solid background for theory of complex variables.

Prerequisite(s): A background in calculus (limits, derivative, integrals) is useful.

Text Book:

- 1. Complex Variables and Applications, R. V. Churchill;
- 2. Kompleks Değişkenli Fonksiyonlar Teorisi, M. Idemen
- 3. Complex Analysis: An Introduction to the Theory of Analytic Functions of One Complex Variable, Ahlfors, Lars V.

Course Outline:

- 1. Complex Numbers and Basic Operations
- 2. Elementary Complex Functions
- 3. Inverse Functions of Elementary Complex Functions (Square Root Function)
- 4. Inverse Functions of Elementary Complex Functions (Logarithm Complex Power Inverse Trigonometric Inverse Hypergeometric Functions)
- 5. Limit, Derivative, Analytic Functions, Harmonic Functions
- 6. Conformal Mapping
- 7. Applications of Conformal Mapping
- 8. Integrals (Contour integrals, Antiderivatives, Cauch-Goursat Theorem)
- 9. Midterm (20 Nov. 2019 Will include everything covered until this date.)
- 10. Integrals (Cauchy Integral Formula, Residues and Poles)
- 11. Evaluation of Some Integrals via Complex Integration
- 12. Series (Taylor Series)
- 13. Series (Laurent Series)
- 14. Evaluation of Summation of Some Infinite Series via Complex Analysis

Grade Distribution:

Assignments (Min. 5)	20%
Midterm Exam (1) (At 20 of Nov. 2019)	40%
Final Exam (1)	40%

Letter Grade Distribution:

>= 84.50	AA	54.49 - 44.50	CC
84.49 - 74.50	BA	44.49 - 34.50	DC
74.49 - 64.50	BB	34.49 - 29.50	DD
64.49 - 54.50	CB	<= 29.49	\mathbf{FF}

Course Policies:

- General
 - Computers usage is encouraged for solution of any problem in your homeworks.
 - Exams are closed book, closed notes. If a formula sheet is required it will be supplied by the instructor.
 - No makeup exams will be given without an official report.

• Grades

- Grades in the A range represent work that is excellent; Grades in the B range represent performance that is substantially better than the expectations; Grades in the C range represent performance that meets expectations.
- Grades will be maintained in the Ninova. Students are responsible for tracking their progress by referring to the online gradebook.

• Assignments

- Homeworks (HWs) are given for your learning of basic concepts. There will be at least 5 homeworks.

• Attendance and Absences

 Attendance is encouraged but not compulsory. Students are responsible for all missed work, regardless of the reason for absence. It is also the absentee's responsibility to get all missing notes or materials.