MATH 452/652: Complex Analysis   Spring 2019, 3 credits

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LECTURE HOURS	MWF 8:00am–8:50am, NDSU Minard Hall 308
OFFICE HOURS	MWF 12:00pm–12:50pm (or by appointment)
TEXTBOOK	Beck, Marchesi, Pixton, Sabalka, *A First Course in Complex Analysis*, version 1.54, a pdf file for the book can be found at http://math.sfsu.edu/beck/complex.html
PREREQUISITES	MATH 265 and MATH 270
COURSE DESCRIPTION	Complex number systems, analytic and harmonic functions, elementary conformal mapping, integral theorems, power series, Laurent series, residue theorem, and contour integral.
COURSE OBJECTIVES	Upon completion of the course the student should be able to use various interpretations of complex numbers to solve algebraic and/or geometric problems; understand the notions of holomorphic and analytic functions and their central role in the theory of complex functions; differentiate and integrate complex functions; prove and apply Cauchy's theorem; rigorously work with power series; apply the residue theorem to calculate real integrals.
CLASS ATTENDANCE	According to NDSU Policy 333 (www.ndsu.edu/fileadmin/policy/333.pdf), attendance in classes is expected. The students are solely responsible for missed handouts or announcements made during the lectures.
HOMEWORK	There will be regular weekly homework, which will be collected and graded. No late homework will be accepted. Group work on homework problems is encouraged, however, the final writing of solutions should be entirely your own.
EXAMS	There will be three midterm in-class exams, and one final two hour long comprehensive exam (May 9, Thursday, 3:30pm). A standard 8 1/2 by 11 sheet of paper with student's notes (both sides) is allowed for the final exam only. The midterm exams are closed books.
CALCULATORS	Calculators will not be allowed during the tests and exams.
GRADING	The grading of the course will be based on the grade throughout the semester [weekly homework (30%), midterm exams (15% each), and the final exam (25%)] or on the final exam grade, whichever turns out to be bigger. The final grade will be A/B/C/D/F with the thresholds 90/80/70/60.

ACADEMIC RESPONSIBILITY AND CONDUCT
The academic community is operated on the basis of honesty, integrity, and fair play. NDSU Policy 335: Code of Academic Responsibility and Conduct applies to cases in which cheating, plagiarism, or other academic misconduct have occurred in an instructional context. Students found guilty of academic misconduct are subject to penalties, up to and possibly including suspension and/or expulsion. Student academic misconduct records are maintained by the Office of Registration and Records. Informational resources about academic honesty for students and instructional staff members can be found at www.ndsu.edu/academichonesty.

Any student found guilty of academic dishonesty will receive a grade of 0 for the homework assignment, or quiz, or test, or exam in question. In addition, every such student will be reported to the Chair of Mathematics, the Dean of their major college, the Dean of the College of Science and Mathematics, the Provost, and the Registrar. The Registrar will add any such student to NDSU's Student Academic Misconduct Database. (Multiple entries in this database may result in additional sanctions from NDSU.)

SPECIAL NEEDS
Any students with disabilities or other special needs, who need special accommodations in this course, are invited to share these concerns or requests with the instructor and contact the Disability Services Office (www.ndsu.edu/disabilityservices) as soon as possible.

SCHEDULE
Note: This is a tentative schedule and subject to a change.

Weeks 1-2. Complex Numbers. Differentiation.

Weeks 3-4. Cauchy–Riemann equations. Examples of functions. First midterm exam.

Weeks 5-7. Integration. Cauchy's theorem.

Weeks 8-9. Cauchy's theorem. Harmonic functions. Second midterm exam.

Week 10. Spring break.

Weeks 11-12. Power series.

Weeks 13-14. Taylor and Laurent series. Third midterm exam.

Weeks 15-17. Residue theorem and additional topics. Review classes.

Week 18. Final exam (May 9, Thursday, 3:30pm).