Math 311 Spring 2014
Theory of Functions of a Complex Variable

Department of Mathematical and Statistical Sciences
University of Alberta

Lecture A1: M T W R F 9:00 - 10:10 CSC B - 2

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(class notes, handouts, solutions, etc. will be available here)

office hours: T R 11:00 - 12:00 in CAB 679, or by appointment

Course Objectives:

To provide an introduction to one of the basic topics of both pure and applied mathematics, suitable for those with either practical or theoretical interests. To study the algebra and geometry of complex numbers, and the analysis of complex valued functions of a complex variable, including differentiation and integration, as well as applications to Fourier analysis.

Course Description:

Complex numbers. Complex series. Functions of a complex variable. Cauchy's theorem and contour integration. Residue Theorem and its applications. Introduction to Fourier integrals and the Heisenberg inequality.

Course Prerequisites:

Math 209 or 215.

Required Textbook:

Complex Variables and Applications, 8th Edition

by James Ward Brown and Ruel V. Churchill

Lecture Topics:

1. Complex Numbers
2. Analytic Functions
3. Elementary Functions
4. Integrals
5. Series
6. Residues and Poles
7. Applications of Residues

Assignments:

There will be two problem sets given each week during the term, and each problem set will consist of problems taken from the text. Problem sets will be collected for marking and are to be submitted before 5:00 pm on the due date in the assignment box on the third floor of CAB. Solutions to the problem sets will be posted on the course webpage and the examination problems will be similar to problems from these problem sets.

Grading Scheme:

Assignments 15%
Midterm Exam ... Friday May 23, 2014 (CSC B-2) 35%
Final Exam ..... Thursday June 12, 2014 (CSC B-2) 50%

Grade Evaluation:

Grade	Percent	Grade	Percent
A+	95 – 100	C+	65 – 69
A	90 – 94	C	60 – 64
A−	85 – 89	C−	55 – 59
B+	80 – 84	D+	50 – 54
B	75 – 79	D	45 – 49
B−	70 – 74	F	0 – 44

Format of Lectures and Examinations:

Lectures: 70 minute lectures. No electronic devices (phones, computers, etc.) are allowed.

Midterm Exam: 70 minute written examination. No calculators or course materials are allowed.

Final Exam: 3 hour written examination. No calculators or course materials are allowed.

Missed Term Examinations:

A student who cannot write the quiz or the midterm examination because of an incapacitating illness, severe domestic affliction or other compelling reasons can apply for deferral of the weight of the missed quiz or examination to the final examination.

Applications for deferral of term work worth less than or equal to 20% of the final grade must be made in writing to the *instructor*, with supporting documentation, within 48 hours of the missed quiz or examination date.

Applications for a deferral of term work greater than 20% of the final grade must be made to the *instructor* within 48 hours of the missed quiz or examination and must be supported by a completed University of Alberta Medical Statement Form or other appropriate documentation (Calendar section 23.5.6).

Deferral of term work is a privilege and not a right; there is no guarantee that a deferral will be granted. Misrepresentation of facts to gain a deferral is a serious breach of the *Code of Student Behaviour*.

Deferred Final Examination:

A student who cannot write the final examination because of an incapacitating illness, severe domestic affliction or other compelling reasons can apply for a deferred final examination.

Such an application must be made to the student's Faculty Office within 48 hours of the missed examination and must be supported by a completed University of Alberta Medical Statement or other appropriate documentation (Calendar section 23.5.6).

Deferred examinations are a privilege and not a right; there is no guarantee that a deferred examination will be granted. Misrepresentation of facts to gain a deferral is a serious breach of the *Code of Student Behaviour*.

Reexamination:

A student who writes the final examination and fails the course may apply for a reexamination. It should be noted that reexaminations are rarely granted in the Faculty of Science. These exams are governed by University (Calendar section 23.5.5) and Faculty of Science Regulations (Calendar Section 182.5.9). Misrepresentation of facts to gain a reexamination is a serious breach of the *Code of Student Behaviour*.

Student Responsibilities:

Academic Integrity:

The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the *Code of Student Behavior* (online at http://www.ualberta.ca/secretariat/appeals.htm) and avoid any behavior which could potentially result in suspicion of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

All forms of dishonesty are unacceptable at the University. Cheating, plagiarism, and misrepresentation of facts are serious offenses. Anyone who engages in these practices will receive at minimum a grade of zero for the examination or paper in question and no opportunity will be given to replace the grade or redistribute the weights. Any offense will be reported to the Senior Associate Dean of Science, who will determine the disciplinary action to be taken.

Examinations:

Your student photo I.D. is required at examinations to verify your identity. Students will not be allowed to begin an examination after it has been in progress for 30 minutes. Students must remain in the examination room for at least 30 minutes from the time the examination commenced. Electronic equipment is not to be brought to the examination.

Cell Phones: Cell phones are to be turned off during lectures, labs, and seminars. Cell phones are not to be brought to examinations.

Students with Disabilities:

Students who require accomodation in this course due to a disability are advised to discuss their needs with Specialized Support and Disability Services (2-800 Student Union Building).

Academic Support Centre:

Students who require additional help in developing strategies for better time management, study skills, or examination skills, should contact the Academic Support Centre (2-703 Student Union Building).

Additional tutorial services are available through the Mathematics and Applied Sciences Centre

http://www.uofaweb.ualberta.ca/MASC/