

## COURSE INFORMATION SHEET

Winter 2009

- Course:** PMAT 421 Introduction to Complex Analysis  
**Lecture/Time:** MWF 15:00-15:50  
**Tutorial/Time:** T 11:00-11:50  
**Instructor:** Cristian Rios  
**Office/Phone/Email:** MS 546 / (403) 220-3221 / crios@math.ucalgary.ca
- Prerequisites:** Both Math 349 and 353; or both Math 283 and 381  
**NOTE:** The Faculty of Science policy on pre- and co-requisite checking is outlined in the current University Calendar (see [www.ucalgary.ca/pubs/calendar](http://www.ucalgary.ca/pubs/calendar)) *Faculty of Science, section 5C*. **It is the students' responsibility to ensure that they have the pre- and co-requisites for the course, and if they do not they will be withdrawn from the course without notice.**
- Fee policy:** After the last day to drop/add courses, there will be no refund of tuition fees if a student withdraws from a course, courses or the session.
- Academic Accommodations:** It is the student's responsibility to request academic accommodations. A student with a documented disability who may require academic accommodation must register with the Disability Resource Centre to be eligible for formal academic accommodation. DRC registered students are required to discuss their needs with the instructor no later than fourteen (14) days after the start of this course.
- The University policy on grading and related matters** is described in the current University Calendar, *Academic Standings*. In determining the overall grade in the course, the following weights will be used:

Quizzes	[ 5 ]	15 %
Assignments	[ 5 ]	15 %
Midterm Test	[ 1 ]	20 %
Final Exam	[ 1 ]	50 %

There will be a final examination scheduled by the Registrar's Office. \*\*\* The use of aids such as open book, etc. **is not** permitted. A passing grade on the FINAL EXAM is essential to passing the course as a whole.
- Missed Components of Term Work.** The regulations of the Faculty of Science pertaining to this matter are outlined in the current University Calendar, *Faculty of Science, section 6A*. It is the student's responsibility to familiarize herself/himself with these regulations.
- Academic misconduct** (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the current University Calendar. See: <http://www.ucalgary.ca/honesty/>
- Dates and times of class exercises held outside of class hours (evening tests, Saturday laboratory examinations, weekend field trips, etc.):**  
**\*\*THERE WILL BE NO OUT-OF-CLASS-TIME ACTIVITY.\*\***

REGULARLY SCHEDULED CLASSES HAVE PRECEDENCE OVER ANY OUT-OF-CLASS-TIME ACTIVITY. If you have a conflict with this out of class time activity, please inform your instructor at least one week in advance of the activity so that other arrangements may be made for you.

**PMAT 421 Winter 2010 - Tentative Course Calendar**

<b>Week</b>	<b>Dates</b>	<b>Section</b>	<b>Content (Basic Complex Analysis, Marsden-Hoffman, 3rd ed.)</b>	
1	Jan 11 - Jan 15	1.1	Introduction to Complex Numbers	
		1.2	Properties of Complex Numbers	
		1.3	Some Elementary Functions	
		1.4	Continuous Functions ( <i>suggested reading</i> )	
2	Jan 18 - Jan 22	1.5	Basic Properties of Analytic Functions : Definition, Conformal maps - Conformal mapping theorem - Cauchy- Riemann equations	
		1.6	Differentiation of the Elementary Functions	Assignment 1
3	Jan 25 - Jan 29	2.1	Contour Integrals	Quiz 1
		2.2	Cauchy's Theorem--A First Look	
4	Feb 1 - Feb 5	2.2	Cauchy's Theorem--A First Look	Assignment 2
		2.3	A Closer Look at Cauchy's Theorem	
5	Feb 8 - Feb 12	2.3	A Closer Look at Cauchy's Theorem	Quiz 2
		2.4	Cauchy's Integral Formula	
	Feb 15 - Feb 19		Reading Week	Assignment 3
6	Feb 22 - Feb 26	3.1	Convergent Series of Analytic Functions	Quiz 3
		3.2	Power Series and Taylor's Theorem	
7	Mar 1 - Mar 5	3.3	Laurent Series and Classification of Singularities	Assignment 4
		4.1	Calculation of Residues	
8	Mar 8 - Mar 12	4.2	Residue Theorem	Midterm
		4.3	Evaluation of Definite Integrals	
9	Mar 15 - Mar 19	4.3	Evaluation of Definite Integrals	
10	Mar 22 - Mar 26	4.4	Evaluation of Infinite Series and Partial- Fraction Expansions	Quiz 4
11	Mar 29 - Apr 2	5.1	Basic Theory of Conformal Mappings	Assignment 5
12	Apr 5 - Apr 9	5.2	Fractional Linear and Schwarz-Chistoffel transformations	Quiz 5
13	Apr 12 - Apr 16	5.3	Applications of Conformal Mappings	