

# MATH 372 Section S19N01

## Introductory Complex Variables

### Jan - Apr 2019



VANCOUVER ISLAND  
UNIVERSITY

**Time & Location:** Mon Wed & Fri 8:30-9:30 in Bldg 200 Rm 105

**Instructor:** Glen Pugh  
glen.pugh@viu.ca (This is by far the best way to reach me!)  
Bldg 359 Rm 201  
(250)753-3245 ext. 2752

**Office Hours:** Mon 11:30-12:30, Wed 2:30-3:30, Fri 10:30-11:30 or by appointment.

**webpage:** <https://web.viu.ca/pughg/Spring2019/math372S19N01>  
This page will be updated weekly with announcements, handouts, homework assignments and test solutions.

**Prerequisite:** B- or better in both Math 123 and Math 200.

**Text:** *A First Course in Complex Analysis* by Matthias Beck, Gerald Marchesi, Dennis Pixton, and Lucas Sabalka, available at the Campus Store for \$8.75 or for free here:

<http://math.sfsu.edu/beck/papers/complexorth.pdf>

**Course Outline:** This is a first course in complex variables, an extension of calculus to the field of complex numbers (numbers of the form  $a+ib$  where  $a$  and  $b$  are real and  $i$  is such that  $i^2=-1$ ). This extension leads to many surprising and deep results in calculus, differential equations and number theory. Topics include

1. Complex Numbers: basic properties and algebra
2. Analytic Functions, derivatives
3. Elementary Functions
4. Complex Integration
5. Series Representations of Analytic Functions
6. Residue Theory

**Homework:** Eight to ten problem sets will be assigned and collected for grading. These problem sets are worth 40% of your final grade. In addition, from the textbook I will assign supplementary practice exercises which should be completed to refine your understanding. The supplementary problems will not be graded, however they may appear on the term tests or final exam. Answers to a selection of textbook problems can be found in the back of the text.

Collaborative problem solving on homework assignments is permitted (encouraged even!), however your handed-in solutions must be written up independently. Evidence of plagiarism on an assignment will result in a zero grade or other measures (see **Academic Misconduct** below).

# Math 372 - Introductory Complex Variables

**Tests:** There will be two 50 minute class tests given on **Wednesday: Feb 13** and **Wednesday Apr 3**. Each test is worth 10% of your final grade.

No make-up tests will be given, but if you miss a class test for a good reason allowances may be made. Documentation must be provided to explain your absence: doctor's note in the case of illness, death certificate in the case of death in the family, police report in the case of car accident, etc. No exceptions.

Test absence due to religious observance may be accommodated, however you must notify me in advance of the test and provide full details of the observance in question.

If you are ill on test day and you elect to write the test anyway, your grade will stand.

**Final Exam:** There will be a comprehensive final exam in April worth 40% of your grade. The exam period is Apr 17-30 2019. Travel plans should not be made until the final exam schedule is released, which is at least one month before exams begin. **In no event will the final exam be rescheduled to accommodate travel plans.**

**Grading Summary:**

Class Tests:	20%
Homework:	40%
Final Exam:	40%

**Grade Review:** If you do not agree with the grade received on a test or assignment, you may submit your paper for regrading within three days of the date it was returned to you. In such cases, the entire paper will be regraded.

There is no possibility of end-of-term extra credit assignments or supplemental exams to improve final grades.

**Grading Scale:**

A+ : 90-100%	B+ : 76-79%	C+ : 64-67%	D : 50-54%
A : 85-89%	B : 72-75%	C : 60-63%	F : 0-49%
A- : 80-84%	B- : 68-71%	C- : 55-59%	

**Attendance:** Attendance will not be taken, however you are encouraged to attend all lectures. If you miss class, read the textbook sections covered and borrow notes from a classmate. I do not lend my class notes nor will I reteach material during office hours.

**Student email:** Ensure that you have an active email address listed in your student record and that you check it regularly. I occasionally email the class with reminders or notices.

**Classroom Environment:** I like the classroom environment to be relaxed yet respectful. I encourage you to ask questions, discuss the topics at hand, and quietly listen while your colleagues ask questions or offer comments. Please don't sit and chat if you don't feel like being in class on a particular day. Arrive on time, and if you must leave class early for an appointment, please advise me ahead of time so that disruption is minimized.

**Academic Misconduct:** Incidents of cheating or other academic misconduct carry severe consequences and will be dealt with seriously. Refer to VIU Policy 99.01 and Procedure 99.01.001.

**Calculators:** A basic scientific non-programmable, non-graphing calculator may be used for class tests and the final exam. (The Staples BD-107i, available at Staples for about \$8, is plenty). Sharing calculators during quizzes and tests is not permitted.

**Phones:** Cell phones must be turned off and put away before tests and may NOT be used as clocks or calculators.

**Formula Sheets:** A single double-sided letter-size "cheat sheet" containing formulae, theory and numerical values may be used for tests. The cheat sheet may not contain algorithms or worked examples and must be submitted when you hand in your test.