

Washington University - St. Louis  
Fall 2019  
Math 310 - Foundations for Higher Mathematics  
Lecture: Room: Lopata Hall 229 Time: MWF 2:00pm – 2:50pm

**Instructor:** Brett D. Wick      Office: Cupples I Room 212  
Office Phone: 314-935-6765      Office Hours: MWF 1:00pm – 2:00pm  
Email: [wick@math.wustl.edu](mailto:wick@math.wustl.edu)      or by appointment  
Webpage: [http://www.math.wustl.edu/~wick/teaching/math310\\_F2019.html](http://www.math.wustl.edu/~wick/teaching/math310_F2019.html)

**Text:** The following text is required for the course:

Title: “Transition to Higher Mathematics: Structure and Proof”

Authors: Dumas and McCarthy

Edition: 2nd

Available at <http://dx.doi.org/10.7936/K7Z899HJ>

The following text is recommended for the course:

Title: “Mathematical Proofs: A Transition to Advanced Mathematics”

Authors: Chartrand, Polimeni, and Zhang

Publisher: Pearson

**Prerequisite and Description:** An introduction to the rigorous techniques used in more advanced mathematics. Topics include set theoretic methods of proof, counter-examples, basic logic, foundations of mathematics. Use of these methods in areas such as construction of number systems, counting methods, combinatorial arguments and elementary analysis. Prerequisite: Math 233.

Topic Outline: Fundamentals of mathematical abstraction including sets, logic, equivalence relations, and functions. Thorough development of the basic proof techniques: direct, contrapositive, existence, contradiction, and induction. Introduction to proofs in analysis and algebra.

**Attendance:** Attendance is required for all lectures. The student who misses a class meeting is responsible for any assignments and/or announcements made. Office hours will not be utilized to re-teach material presented in class. However, questions to better understand the course are always welcome.

There will be no opportunities for make-up tests after the fact. **In the event of an absence due to travel representing Washington University - St. Louis, such as an intercollegiate sports competition, you must notify the professor at least two weeks in advance to arrange an early test or other alternative.** Otherwise, such absences will be treated as personal. In the event of a missed exam, contact Blake Thornton: [bthornton@wustl.edu](mailto:bthornton@wustl.edu).

**Homework:** This course will have weekly homework assignments which will be graded.

**Worksheets:** There will be weekly worksheets throughout the semester.

**Exams:** This course will have three mid-term exams and a comprehensive final exam. The exam dates for the course will take place on:

Exam Dates:

Exam 1	Monday, September 30
Exam 2	Wednesday, October 30
Exam 3	Friday, December 6
Final Exam	Monday, December 16, 3:30pm – 5:30pm

**Exam Re-Grading Policy:** Exams will be returned in class, and upon return you will have an opportunity to review your exam and its grading. If you disagree with the grading of your exam you are to notify me of the issue at the time of return. If you take the exam when it is returned to you without registering a complaint regarding the grading, then your score is set and no additional regrades will be considered for that exam. If you request a regrading of your exam, you may additionally arrange a meeting to discuss the regrading issue with me directly.

**Learning Disabilities:** It is the right of any student with a certified learning disability to request necessary accommodation. Such requests must be made well in advance of the time that the accommodation is required and a letter of documentation from the [Disability Resources](#) office must be presented at the time of any request.

**Academic Honesty:** It is expected that all students are aware of their individual responsibilities under the [WUSTL Academic Integrity Policy](#), which will be strictly adhered to in this class. **Any violations must be reported directly to the Dean of Students.**

**Grades:** Grades will be based upon attendance, worksheets, homework's, mid-term exams, and the final exam. Course grades will be assigned from the *maximum* of the following formulas:

	Method 1	Method 2	Method 3
Worksheets	10%	10%	10%
Homework	10%	10%	10%
Midterm Exams	45%	40%	35%
Final Exam	35%	40%	45%

The usual ten-point scale will be used (A: 90-100, B: 80-89, C: 70-79, D: 60-69, F: 0-59), however, if necessary, adjustments will be made to arrive at a standard grade distribution for the course. On an individual basis, significant improvement over the semester will be taken into account. Two worksheet grades and a to be announced number of homework will be dropped when computing your grade. This is the only mechanism for coping with personal events such as illness and family emergencies. For students taking the course with the Pass/Fail option, the threshold for a passing grade will be a "C".

**Important Dates for Fall 2019:**

August 26	First day of classes
September 2	Labor Day - No Class
October 12 - 15	Fall Student Recess - No Class
November 27 - December 1	Thanksgiving Break - No Class
December 6	Last day of classes