

MA225 Syllabus
Spring 2019
North Carolina State University

Instructor: Dr. Brenda Burns-Williams

Office: 3242 SAS Hall

Office Hours: By Appointment

Office Phone: 513-2114 (I am rarely in the office, so the best way to contact me is by email)

Email: bdburns@ncsu.edu (emails are answered several times each day between 8 am and 6 pm.)

Description: This course was designed for math majors as a bridge between the lower level problem solving courses (calculus and differential equations) and the required upper level proof-based courses (MA 407 and MA 425). In MA 225 the course content includes the basic proof techniques and the logical basis of those proof techniques as well as the special technique of math induction. In addition, we go over relations and equivalence relations, functions and cardinality which are all topics that will be needed in later courses. More importantly, the student is expected to begin to think mathematically and write proofs and problem explanations in a clear, concise and logical fashion. Students should plan on taking this course concurrently with MA 242 and prior to MA 407 and MA 425. The prerequisite is MA 241.

Text: A TRANSITION TO ADVANCED MATHEMATICS by Smith, Eggen & St. Andre, 8th edition, Thomson Brooks/Cole, 2010.

We will cover the following sections:

Chapter 1: all [Propositions and Connectives, Conditionals and Biconditionals, Quantified Statements, Basic Proof Methods, Proofs involving Quantifiers]

Chapter 2: 2.1 – 2.5 [Basic Concepts of Set Theory, Set Operations, Indexed Families of Sets, Mathematical Induction, Complete Induction, Well Ordering Principle]

Chapter 3: 3.1 - 3.2 [Relations, Equivalences]

Chapter 4: 4.1 - 4.3 [Functions as Relations, Construction of Functions, Functions that are One-to-One and Onto, Inverse Functions]

Chapter 5: 5.1 – 5.3 [Equivalent sets, Finite Sets, Infinite Sets, Countable sets]

Tests/Exam: There will be 3 tests and a comprehensive final exam.

Test 1: February 6, 2019

Test 2: March 20, 2019

Test 3: April 17, 2019

The **final exam** is scheduled for:

Section 002: Monday, April 29, 2019 from 8:00 – 11:00 a.m.

Section 005: Monday, May 6, 2019 from 1:00 - 4:00 p.m.

Grading policy: Each hour exam is worth 20%, homework/quizzes are collectively worth 20% and the final exam is 20% of your semester average. As per the NCSU requirement, the plus/minus grading system will be in effect.

100-98 A+	92-97 A	90-91 A-
88-89 B+	82-87 B	80-81 B-
78-79 C+	72-77 C	70-71 C-
68-69 D+	62-67 D	60-61 D-
0-59 F		

Attendance/Test Make-up Policy: You are expected to attend all classes on time. If you have to miss an exam for reasons of illness or some other excused absence, please contact me prior to the exam (if possible) so we can arrange for a makeup. Test make-up policy is in accordance with the University policy

(http://www.ncsu.edu/policies/academic_affairs/pols_regs/REG205.00.4.php)

– All anticipated absences must be excused in advance of the test date. These include University duties or trips (certified by an appropriate faculty or staff member), required court attendance (certified by the Clerk of Court), or religious observances (certified by the Department of Parent and Family Services 515-2441). Emergency absences must be reported within one week of returning to class and must be appropriately documented. (illness by an attending physician or family emergencies by Parent and Family Services).

Students who miss a test *and have a university approved excuse* must fill out a Request for Make-up form (found on the Moodle Site) and submit it within one week of returning to class along with appropriate documentation for the absence. The dates for make-ups will be posted on the Moodle site. Make-ups are given from 7:00 – 8:00 am only on the dates listed. No exceptions.

Make-ups for oversleeping, car trouble, or any other excuse *not* approved by the university may ONLY be given ON THE DAY OF THE TEST! It is your responsibility to track me down if you miss a test for one of those reasons. DO NOT email me asking when to take the test.

Incomplete grades will be handled on an individual basis.

Expectations/Academic Integrity: It is my understanding and expectation that your signature on any exam or assignment means that you have neither given nor received any unauthorized aid. I expect all students to adhere to the University's regulations on academic integrity

(http://www.ncsu.edu/policies/student_services/student_discipline/POL11.35.1.php)

(i.e. No cheating or plagiarizing!). Talking or other disruptive behavior during a test or quiz will result in a student's paper being confiscated and the student receiving a 0 on the assignment. If evidence is present that a student was cheating, the violation will be reported to the Office of Student Conduct for further action.

Students may discuss homework assignments with other students in this section of the class and with me, but no other persons. Students are expected to write up their assignments individually. Homework assignments will be due at the beginning of the class on the day due. No late homework will be accepted.

DISABILITY SERVICES: Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with Disability Services for Students at 1900 Student Health Center, Campus Box 7509, 515-7653. For more information on NC State's policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities. Regulation (REG02.20.1). Students requesting special accommodations due to disabilities must have

appropriate documentation from Disability Services (<http://www.ncsu.edu/dso/>) **AND** must meet with me to discuss accommodations **PRIOR** to a test or quiz date.