

GENERAL EDUCATION PROGRAM REQUEST FOR WRITING INTENSIVE MARKER: EXPLANATIONS

In this course, students must learn to “do proofs.” This means organizing their thoughts and work on a given problem logically, and then writing it all down from a logical beginning to a logically derived end, in such a way that each statement along the way is complete, correct, precise, and completely unambiguous.

A. Indicate the range of writing assignments you will use (i.e., their types and approximate number and length).

Homework assignments: Homework is assigned weekly, with most homework assignments a mixture of computational and theoretical work. They include proof problems that require students to come up with and write down a valid mathematical argument in complete English sentences. A typical proof at this level is approximately 1/2 page of text. Students are not required to typeset these assignments.

In-class quizzes: The quizzes require students to state theorems. Additionally, they must provide definitions of illustrate the definitions with examples and/or counterexamples.

Writing assignments: The writing assignment is the main writing project in the course. It consists of typing a detailed argument for a problem and then resubmitting the revised version taking into account comments on the original version. Additional details can be found in the *MAT 311 Guidelines for Writing Assignments* at

www.uncg.edu/mat/undergraduate/courses/mat311.html .

Tests: There are two tests and a comprehensive final examination. Students must provide detailed proofs on each test. Each proof problem is of length comparable to the exercises in the homework assignments.

B. Explain the ways in which those assignments will both help students improve their writing and promote learning of class material.

Throughout this course, students are studying topics in advanced mathematics. In the assignments of this course, students are expected to explain mathematical reasoning as opposed to simply providing answers. They must also respond clearly to questions clearly. In order to articulate mathematical concepts precisely, the student must understand the concept deeply.

Students have to learn what constitutes an acceptable proof and how to produce acceptable proofs themselves. Examples of good proof-technique are demonstrated in lecture. Students practice these proof techniques in the weekly homework assignments and receive feedback on their progress. The quizzes check that they are retaining precise statements of formal constructions (definitions and theorems) from lecture, and give them the opportunity to show understanding by providing examples. The writing assignment is a major writing project that requires not just a mastery of the material, but also proper technical typesetting. Students are encouraged to learn L^AT_EX, a high-quality typesetting system for the production of technical and scientific documents.

C. Indicate how this course will include at least one substantive assignment in which all students submit at least one draft for comments from the instructor and then revise the draft to take account of those comments.

The *writing assignments* described in Section A consists of writing a argument for a problem. Detailed feedback is provided. The student then resubmits the revised version taking into account comments on the original version.

D. Describe ways in which you will provide coaching and instruction for students.

We spend a majority of the lecture time explaining how to construct proper proofs, which involves technical writing in the discipline. We introduce many examples of proof technique and style. We provide students with a handout explaining how to write mathematics. A sample is given on the course website. In-call discussions on writing mathematics may additionally draw from the many resources at the Mathematical Association of America's Mathematical Communication resources page (mathcomm.org).

E. Explain how the assessment of quality and improvement in students' writing will be included in the final grade.

For each writing assignment we provide detailed comments which students must address in their final submission. The assessment is based on the initial draft, improvements made addressing the comments, and the final draft as described in the *MAT 311 Guidelines for Writing Assignments*.

F. Because of the personal attention and guidance that students will receive, class size should not exceed 25.

The course enrollment is officially capped at 25 students.

G. If WI credit is sought all times the course is offered as proposed, explain what will be done to ensure appropriate faculty preparation to maintain the integrity of the course.

WI credit is sought all times the course is offered. This course will be taught following the Writing Intensive Guidelines.

utlc.uncg.edu/genedu/proposals/guidelines-for-a-writing-intensive-course

Each instructor will be given a copy of this document and will follow the approved syllabus. The approved syllabus be centrally maintained as a model on the course homepage.

www.uncg.edu/mat/undergraduate/courses/mat311.html