

# Teaching

Dr. Talitha M. Washington

Modified September 2017

## TEACHING STATEMENT

To teach effectively, one must understand, motivate, and challenge students. Through formal interactions in the classroom and informal discussions in the office, I aspire to inspire students to explore a variety of mathematical concepts and applications.

In my courses, I want students to grow mathematically, academically, and socially in an atmosphere that is both stimulating and adaptive to their diverse needs. I find that encouraging students in the classroom to contribute to discussions and to present homework solutions have been pivotal in increasing student involvement and enthusiasm. Throughout the lecture, I incorporate just enough humor to make the experience enjoyable and productive. With this style of teaching, students take an active role in their learning in a relaxed environment, while I curtail my role to that of mathematical guide and motivator. I believe that students learn not only by what is shown to them, but by what they accomplish.

In many of the courses that I have taught, I assigned writing assignments. Each group would type a report which includes answers to preassigned questions. Since this would be the first time students would write a scientific paper, I would encourage the students to come to me for assistance with revisions. I also encouraged students to utilize the writing center on campus. By working in groups, students would learn how to talk about mathematics in a technical sense, and then organize the information into a technical paper. Writing can be a powerful tool to reinforce concepts.

As a result of my research in applied mathematics, I have been able to expose undergraduates to mathematical research. For example, I enhanced students' understanding of calculus through projects that applied the subject to fundamental topics in the sciences. Over the years, I have created a number of topics courses in the areas of mathematical biology and scientific computing which exposed undergraduates to current trends in the field. Topics include utilizing mathematics to describe oscillations made by the Tacoma Narrows Bridge on the days of its collapse, the spread of infectious diseases, and systems in synthetic biology. As a result, the students find that the material "comes alive;" they can see interesting ways that mathematics describes the world around them. I look forward to developing more research-based courses so that students can both understand the applicability the mathematics and learn to appreciate the beauty of the subject.

I am accessible to students by holding weekly office hours plus appointments, conducting evening and weekend review sessions, and posting teaching materials online via *Blackboard*. Students frequent my office for consultation on scheduling, balancing personal interests with educational responsibilities, and ways to attain academic success. Often, students will visit just to chat as they can be quite anxious about their life's trajectory. I am sympathetic to students' needs and help them seek positive solutions especially in the midst of personal and academic turmoil. I ultimately assist students as they define their path in life while encouraging them not to give up on their dreams.

I believe it takes more than a single individual to make a difference in the lives of students. Therefore, I have learned the value of being a team player and the importance of communicating with colleagues, students, and administrators so that I will be able to provide the best education possible for my students. I take great pride in being a teacher and a motivator, and feel my strengths and talents are well utilized in this stimulating career. As I grow as an instructor and mentor, I hope to continue to convey my enthusiasm for acquiring knowledge and give students tools that will help them grow as learners.

COURSES TAUGHT SINCE FALL OF 2001

**Duke University, Durham, North Carolina, USA.**

*Spring 2002*

MATH 31\* Laboratory Calculus I

*Fall 2002*

MATH 31L Laboratory Calculus I

MATH 131 Elementary Differential Equations

**The College of New Rochelle, New Rochelle, New York, USA.**

*Fall 2003*

MTH 109 Quantitative Reasoning

MTH 111 College Mathematics

MTH 116 Precalculus/Elementary Functions

MTH 121 Calculus I

*Spring 2004*

MTH 117 Elementary Statistics

MTH 122 Calculus II

MTH 214 Differential Equations

MTH 330 Numerical Analysis

*Fall 2004*

MTH 100\* Intermediate Algebra

MTH 121 Calculus I

MTH 390 Seminar in Mathematics: Geometry

*Spring 2005*

MTH 121 Calculus I

MTH 122 Calculus II

MTH 256 Discrete Mathematics

**University of Evansville, Evansville, Indiana, USA.**

*Fall 2005*

MATH 105\* College Algebra

MATH 211 Calculus I with Precalculus Review

*Spring 2006*

MATH 222 Calculus II

MATH 324\* Differential Equations

*Fall 2006*

MATH 323\* Calculus III

MATH 495 Senior Seminar: Mathematical Modeling

CE 499 Topics Course on Modeling the Tacoma Narrows Bridge

*\*Two sections taught*

*Spring 2007*

MATH 324\* Differential Equations  
MATH 373 Numerical Methods

*Fall 2007*

MATH 134\* Survey of Calculus  
MATH 495 Senior Seminar: Mathematical Modeling

*Spring 2008*

MATH 202 Mathematics for Elementary Teachers  
MATH 222\* Calculus II  
MATH 373 Numerical Methods (Independent Study)  
DISC 300 African American Experience: Law and Society

*Summer 2008*

MATH 324 Differential Equations

*Fall 2008*

MATH 211 Calculus I with Precalculus Review  
MATH 495 Senior Seminar: Mathematical Modeling

*Spring 2009*

MATH 222\* Calculus II  
MATH 373 Numerical Methods

*Summer 2009*

MATH 134 Brief Calculus

*Fall 2009*

MATH 101\* Mathematical Ideas  
MATH 355 Foundations of Geometry

*Spring 2010*

MATH 202 Mathematics for Elementary Teachers  
MATH 222\* Calculus II  
MATH 490 Independent Study on Applied Differential Equations

*Summer 2010*

MATH 324 Differential Equations

*Fall 2010*

MATH 101 Mathematical Ideas  
MATH 191 Mathematical Modeling in Synthetic Biology  
MATH 222\* Calculus II

*Spring 2011*

MATH 101\* Mathematical Ideas  
MATH 373 Numerical Methods

*\*Two sections taught*

**Howard University, Washington, District of Columbia, USA.**

*Fall 2011*

FRSM 001 Freshman Seminar Group Project Advisor  
MATH 157 Calculus II  
MATH 164 Numerical Analysis

*Spring 2012*

MATH 156 Calculus I  
MATH 192/450<sup>G</sup> Topics in Applied Mathematics: Mathematical Biology

*Fall 2012*

FRSM 001 Freshman Seminar Group Project Advisor  
MATH 006 College Algebra I  
MATH 159 Differential Equations  
MATH 089 Directed Readings in Honors for Juniors: Modeling Calcium Homeostasis

*Spring 2013*

MATH 156 Calculus I  
MATH 192/450<sup>G</sup> Topics in Applied Mathematics: Mathematical Biology  
MATH 166 Directed Readings: Discrete Programming in MATLAB and Proof Writing  
MATH 166 Directed Readings: Stochastic Programming in Sage

*Fall 2013*

MATH 156 Calculus I  
MATH 222<sup>G</sup> Real Analysis I

*Spring 2014*

MATH 021 Fundamental Concepts of Mathematics for Education II  
MATH 223<sup>G</sup> Real Analysis II

*Fall 2014*

MATH 007 Honors Precalculus  
MATH 020 Fundamental Concepts of Mathematics for Education I

*Spring 2015*

MATH 021 Fundamental Concepts of Mathematics for Education II  
Math 450<sup>G</sup> Topics in Applied Mathematics: Scientific Computing (with MATLAB)

*Fall 2015*

MATH 020 Fundamental Concepts of Mathematics for Education I  
Math 101 Proof and Problem Solving I  
Math 247<sup>G</sup> Numerical Analysis I (of Differential Equations with MATLAB)

*Spring 2016*

MATH 006 College Algebra I  
MATH 021 Fundamental Concepts of Mathematics for Education II  
MATH 166/290<sup>G</sup> Directed Readings: Introduction to Data Science with R/RStudio

*Fall 2016*

MATH 084/296<sup>G</sup> Data Science with R/RStudio Seminar  
MATH 020 Fundamental Concepts of Mathematics for Education I  
Math 158 Calculus III

*Spring 2017*

MATH 007 Precalculus  
MATH 021 Fundamental Concepts of Mathematics for Education II  
MATH 247<sup>G</sup> Numerical Analysis I (of Partial Differential Equations with MATLAB)

<sup>G</sup>Indicates graduate-level course