

Math 2405H-2406H: Mathematics in a Computational Context

The yearlong sequence (5 credits fall and 5 credits spring) will include all topics that will be taught in Math 2114, 2214, and 2204, motivated by applications and taught with attention to algorithmic implementation.

Prerequisite for Math 2405H: Credit for the two semesters of calculus, Math 1225-1226, (for example, by a score of 4 or 5 on the AP Calculus BC exam).

Prerequisite for Math 2406H: Math 2405H

Mathematics in a Computational Context provides an integrated treatment of linear algebra, differential equations, and multivariable calculus. Students learn to distinguish between problems that can be solved “by hand” and those requiring approximation to specified accuracy. Students learn analytical methods as well as algorithms and their efficient implementation on a computer. This course provides an introduction to the mathematics and computation commonly encountered in today’s scientific and engineering workplaces.

The course is designated as an honors section, though it is not restricted to honors students.

Student Comments

"Challenges inspire greatness, and 2405H can be the first of many."

"MATH 2405H and 2406H, are challenging courses that force you to push yourself into a challenge-ready mindset. Completing the courses provides a confidence that anything in college may be possible. Farther, the course material and depth provide a math class you have never experienced before and a true understanding for the applications of the math you are learning."

"Aside from academics, the environment and friendships you make with your peers and your teachers holds a special place in my heart as our class became a tight knit group and even surprised our teachers at the end of the semester by going to hibachi at Turner and celebrating his birthday! As an engineering major, I would not have met such talent and genius that is quite different than the engineering department. At a predominantly engineering school, this class also made me realize that there are other majors besides engineering that are "insanely cool" for lack of better wording."

"It's not easy, but it's definitely worth it. Not only do you gain a firm understanding of the material, but you also gain friends that are just as excited about the material as you are (interpret that as you wish). Take this course. You won't regret it."

"I hope you take this class! Even if it gets tough, it will get better if you work for it, which helped shape my outlook on the rest of my college career that pushed me through the hardest times."

"Mathematics in a Computational Context" is one of the most unique and rewarding courses offered at Virginia Tech. The subject matter was interesting as well as useful, the professors are fantastic, and the course prepared me extremely well for upper level mathematics (and CMDA!) courses. If you have the opportunity to take this course DO IT! You will be so glad you did."

"It is rigorous and requires effort outside of classroom to have a good grade and understand the material. The course is a great preparation for those who are looking for a career in math, computer science or simply interest in computation which it wills teach students the knowledge beyond any introductory math course at university level. The pace is fast and require utmost attention but the achievement of completing course will get the students way ahead of their fellow freshman and gives them substantial new experiences in the field and therefore, worth the price to fulfill. So good luck and enjoy the course"

"I have loved almost every math class I have taken, but these are by far my favorite math classes. I met some amazing people in the class and the professors were also amazing. They did a great job at explaining everything and putting it into context. I would say that the skills and the knowledge that I gained from these classes are invaluable to me and I am so glad I decided to take them."

"These classes are challenge. However, when you join in and insist to the end, you will be trained to have a rigorous logic and good attitude to help you keep seeking more different areas and topics in the future and be succeed. "