

MATH 124 – Fall 2019
Calculus and Vector Algebra for Kinesiology

Instructor: Shubham Dwivedi
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Website: [LEARN](#) & [Course Webpage](#)

Office hours: Monday 10:30 AM - 11:30 AM in MC 5413
Wednesday 3:30 PM - 5 PM in MC 5413
or by appointment

Class Time and Place: M/W/F - 8:30 - 9:20 AM in M3 1006.

Tutorial Time and Place: T - 10:30-12:20 PM in AHS 1689.

Syllabus: Review of trigonometry and basic algebra. Introduction to vectors in 2- and 3-space: sums, addition, dot products, cross products and angles between vectors. Solving linear systems in two and three variables. Functions of a real variable: powers, rational functions, trigonometric, exponential and logarithmic functions, their properties. Intuitive discussion of limits and continuity. Derivatives of elementary functions, derivative rules; applications to curve sketching, optimization. Relationships between distance, velocity and acceleration. The definite integral, antiderivatives, the Fundamental Theorem of Calculus; change of variable; applications to area, centre of mass, work.

Textbook: The *recommended* textbook for the course is *Math 124 Calculus and Vector Algebra for Kinesiology*. It is available from the bookstore. However, lecture notes will also be posted as well as practice problems, so it is *not* required that you buy the book.

Course Website: Course notes will be posted on [LEARN](#) and the [Course Webpage](#) on Friday of every week. Practice problems and the solutions to the Assignments, Quizzes and the Midterm will be posted on [LEARN](#).

Marking Scheme: The marking scheme for the course will be as follows:

Assignments	10%
Quizzes	10%
Midterm	30%
Final Exam	50%

This scheme may be adjusted for exceptional cases at my discretion.

Homework Assignments: There will be 5 assignments, each worth 2% of your total grade. The assignments are (roughly) biweekly and they complement the quizzes. **Late assignments will not be marked and will receive a mark of 0.**

Collaboration is encouraged. But make an honest attempt to understand how to solve the problems! If you don't do the assignments yourself, it will show on the final.

Quizzes: There will be 5 quizzes, each worth 2% of your total grade. The quizzes will take place during your tutorials. The dates for the quizzes will be announced in advance. The quizzes will be closed-book.

Midterm: The midterm for the course is scheduled on **Tuesday, October 22** from **10:30-12:20 PM**, during the tutorial timings. The venue will be decided later.

Final Exam: The date and the venue for the final exam will be decided by the Registrar's office and will be announced later.

Academic Integrity: In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility. [Check www.uwaterloo.ca/academicintegrity/ for more information.]

Grievance: A student who believes that a decision affecting some aspect of his or her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read Policy 70, Student Petitions and Grievances, Section 4, www.adm.uwaterloo.ca/infosec/Policies/policy70.htm. When in doubt please be certain to contact the department's administrative assistant who will provide further assistance.

Discipline: A student is expected to know what constitutes academic integrity [check www.uwaterloo.ca/academicintegrity/] to avoid committing an academic offence, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about "rules" for group work/collaboration should seek guidance from the course instructor, academic advisor, or the undergraduate Associate Dean. For information on categories of offences and types of penalties, students should refer to Policy 71, Student Discipline, www.adm.uwaterloo.ca/infosec/Policies/policy71.htm. For typical penalties check Guidelines for the Assessment of Penalties, <http://www.adm.uwaterloo.ca/infosec/guidelines/penaltyguidelines.htm>.

Appeals: A decision made or penalty imposed under Policy 70 (Student Petitions and Grievances) (other than a petition) or Policy 71 (Student Discipline) may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to Policy 72 (Student Appeals) www.adm.uwaterloo.ca/infosec/Policies/policy72.htm.

Note for Students with Disabilities: AccessAbility Services, located in Needles Hall, Room 1132, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with AccessAbility Services at the beginning of each academic term.