



UMass

Dartmouth

COLLEGE OF ENGINEERING

IMPULSE – An innovative program in active and collaborative learning

Integrated **M**ath, **P**hysics, **U**ndergraduate **L**aboratory **S**cience & **E**ngineering

Engineering majors working together in teams. . . faculty from several disciplines teaching together. . . specially-designed classrooms with the latest in software and computers. . . engaged, involved students.

IMPULSE is our innovative learning program for freshmen majoring in engineering and physics. At the program's core is an integrated curriculum, coupled with active and collaborative learning, that has been invaluable to students as they move from high school into the university.

In **IMPULSE**, students take several integrated courses: engineering and calculus in the first semester, and engineering, calculus, and physics in the second semester. While students in most colleges take such courses, our engineering majors do so in a creatively different way. The engineering professor, for example, integrates physics and calculus by threading these topics into in-class team activities, projects, and team-based homework assignments. In this way, you apply what you've learned about all three subjects and see how the disciplines are connected. These courses are completed as a set, although you receive a separate grade in each.

Learning involves more than lectures

With **IMPULSE**, you actively participate in your education, collaborating with faculty and other students. The program emphasizes hands-on experiments and methodical solutions to engineering, calculus, and physics problems.

Students learn from their peers, work in teams, and develop a real understanding of teaming.

Classes are held in rooms specially designed for **IMPULSE**, with new computers and the latest math, physics, and engineering software. You'll use these computers and other equipment to conduct experiments, collect data, and analyze information in tackling your assignments.

IMPULSE is the cornerstone of UMass Dartmouth engineering education. Faculty give the program solid support, as more freshmen make it through their first engineering year and students learn how to collaborate on projects and problems, an essential skill needed in the workforce.



www.umassd.edu/engineering/coe/departments/impulse

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