

# MATH6342 - Scientific Computing

[MATH 6342](#) Scientific Computing (3 semester credit hours) Introduction to scientific computing through projects in computational science and engineering. Topics include mathematical modeling; theoretical analysis of such models; numerical and symbolic computation; verification and validation; computational simulation. Representative projects will include applications of dynamical systems, Monte Carlo simulations, numerical optimization, and linear and nonlinear partial differential equations. The course includes an introduction to symbolic computation and to programming in MATLAB, Python, and/or C. Some prior programming experience is recommended. Prerequisites: Prior courses in numerical analysis and partial differential equations and [MATH 6315](#) or instructor consent required. (3-0) T