1125-VK-2496   **Eric J Kostelich*** (`kostelich@asu.edu`), School of Mathematical & Statistical Sciences, Box 871804, Arizona State University, Tempe, AZ 85287. *High-Performance Computing for Undergraduate and Graduate Mathematics Students.*

I will describe two courses in high-performance computing, one aimed at undergraduates and the other at first-year graduate students in applied mathematics. The informal goal is to help students "hit the ground running" in internships or thesis work that involves a substantial amount of numerical computing. The undergraduate course emphasizes software development skills in a Linux environment with applications in numerical linear algebra and ordinary differential equations. Topics include shell scripting, C/C++ and Fortran programming, the make utility, and libraries like LAPACK and ODEPACK. The graduate course includes some of these same topics plus a survey of models of parallelism, including vectorization; multithreading with OpenMP; distributed memory programming with the Message Passing Interface; and partitioned global address space environments (e.g., coarray Fortran and Unified Parallel C). I will include examples of programming exercises and other topics that are suitable for lower-division programming courses. (Received September 20, 2016)