

Timberlake, Todd , and Javier E. Hasbun. "Computation in Classical Mechanics."
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Abstract. One way to introduce computation into the physics curriculum is to include it in a standard upper-level physics course. A course in intermediate classical mechanics is well-suited for this purpose. We discuss our approach and examples of student projects on solving differential equations and Liouville's theorem, projectile motion on a rotating Earth, motion of a charged particle in electric and magnetic fields, and approximate analytical and numerical solutions for a classical model of a molecule. The projects introduce students to these physics topics and develop the students' computational skills.