

Abstract Submitted  
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**Top-Down and Free** MICHAEL SCHILLACI, University of South Carolina — The “Top-Down Physics” (TDP) project is aimed at unifying material traditionally covered in Classical Mechanics, and Electricity & Magnetism, as well as elements of Quantum Mechanics and Statistical Dynamics at the undergraduate level. The main computational platforms for the student projects have been LaTeX, MAPLE and JAVA. Relevant theoretic, algorithmic and technical (software) elements are introduced as needed to simulate laboratory-style experiments carried out in class. Ideally, solutions developed by “senior” students can be “beta- tested” during classroom and laboratory demonstrations to lower- level students. In this way, the curriculum naturally “folds” onto itself. Current efforts include the use of the Open Source Physics and Maxima to develop a platform-independent (and free) framework for the TDP framework.

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