Abstract Submitted
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Introduction to Naval Hydrodynamics using Advanced Computational and Experimental Tools[1] JAMES BUCHHOLZ, PABLO CARRICA, JAE-EUN RUSSELL, MATTHEW PONTARELLI, AUSTIN KREBILL, RANDALL BERDON, The University of Iowa — An undergraduate certificate program in naval hydrodynamics has been recently established at the University of Iowa. Despite several decades of graduate research in this area, this is the first formal introduction to naval hydrodynamics for University of Iowa undergraduate students. Central to the curriculum are two new courses that emphasize open-ended projects conducted in a novel laboratory/learning community that exposes students to advanced tools in computational and experimental fluid mechanics, respectively. Learning is pursued in a loosely-structured environment in which students work in small groups to conduct simulations and experiments relating to resistance, propulsion, and seakeeping using a revised version of the naval hydrodynamics research flow solver, REX, and a small towing tank. Survey responses indicate that the curriculum and course format has strongly increased student interest in naval hydrodynamics and effectively facilitated depth of student learning.

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