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Monterey, California. Naval Postgraduate School

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Systems Engineering and Analysis Curriculum
Naval Postgraduate School
 Monterey, California

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In lieu of a thesis, students lead and manage a **campus-wide interdisciplinary design project** of significant importance to the Navy. This begins in the fourth quarter with a course on project management, where the project plan is built. Then SEA students analyze the **need** for the system, determine its operational concept, develop functional requirements, produce the system architecture, allocate the requirements among sub-systems, manage the design of the sub-systems, assure that the final design is integrated, assess any trade-offs made, and then implement and test the solution. Other students across campus design the sub-systems.

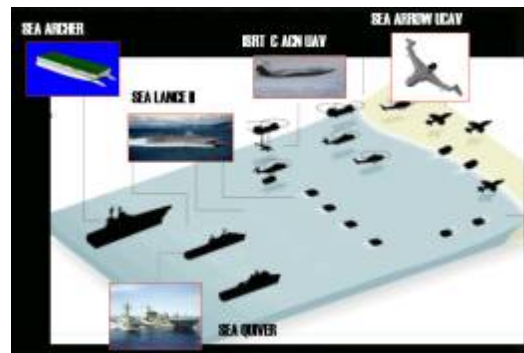
Project Impact

The project results are widely disseminated. Executive Summaries of last year's project were read by or briefed to the CNO and the Defense Science Board, among many others. Student work has great visibility and an impact on major policy discussions.

Students who lead and participate in the campus-wide projects leave NPS with an unparalleled grasp of the strategic, tactical, and technical issues surrounding an important Navy problem.

Project Examples

In 2002, SEI students developed the concept and designed a force for combat in the littorals. This force included UAV combat aircraft; UAV ISRT aircraft; small fast fighting ships; a new, very fast automated carrier built from the keel up to support UAVs; the command and control network; the logistical support system and ships; and several new weapon systems such as a Free Electron Laser for point defense. They developed and tested the operational concept through campaign analysis. [View an article from the NPS Journal about CROSSBOW.](#)



In 2003, SEA students designed a concept and force for expeditionary warfare. The project begins with an analysis of the status quo. Then starting from a clean sheet of paper, they began to design. The designs included the operational concepts, the ships, the aircraft, the ground vehicles, the logistical system, the command and control system, as well as many other pieces. [View a slide show description.](#)

This Year's Project

In June of 2004, SEA students completed a design for Maritime Dominance in the Littorals, evaluating several architectures each of which were a different mix of manned and unmanned future and legacy surface, underwater, and aerial systems. December's SEA project addresses the Joint Expeditionary Logistics System.

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