

SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
In Orbit - Postgraduate Space Education (4)

Author: Mr. Joshua Nelson
International Space University (ISU), France

HANDS ON POST-GRADUATE SPACE EDUCATION AT THE INTERNATIONAL SPACE
UNIVERSITY

Abstract

Founded in 1987, the International Space University (ISU) provides international, intercultural, interdisciplinary education programs for graduates and space industry professionals. Program offerings include a Masters of Science in Space Studies and professional development programs such as the nine-week Space Studies Program, five week Southern Hemisphere Space Studies Program, and one week Executive Space Course. ISU prides itself in incorporating hands on projects and workshops in all of the seven disciplines covered in our interdisciplinary curriculum: Engineering, Physical Sciences, Policy and Law, Business and Management, Satellite Applications, Life Sciences, and Humanities.

While rockets get the most public attention, the true powerhouse behind the space industry is in satellite applications. ISU has strong support from companies and professionals working in the Satellite Communication, Remote Sensing, and Satellite Navigation fields. Students have the opportunity for hands on learning using the ISU Ground Station to communicate with cube satellites, process satellite images for agricultural and environmental projects, and ground trothing experiments utilizing both satellite navigation and imagery.

Before a satellite can take its first image or make the first transmission, it must be designed by the engineers. During their Space Engineering workshops, students at ISU our Concurrent Design Facility (CDF) to conduct a phase 0 study of a remote sensing or communications satellite. Developed in house specifically for education, the ISU CDF software allows for a variety of fidelity levels, permitting everyone from professional engineers to HR professionals to gain experience in satellite design. Planned upgrades to this facility will enable phase 0 studies of small satellites and on orbit servicing missions.

With international collaborations becoming more common, it is essential space industry leaders have experience in space policy, law, business, and management. As part of the Policy and Law curricula, ISU assigns each student the role of a policy maker from a different country in a mock international policy negotiation over a revised Moon Treaty. In their Business and Management classes students work in international groups to write mock business proposals and market analyses that are then evaluated by space industry venture capitalists.

After graduation, many students follow up on the work performed in their ISU projects by presenting their results at conferences such as IAC and founding companies based on the ideas they developed at ISU. With over 3,000 alumni from 100 different countries, it is hard to find a space company or organization without at least one ISU alumnus!