IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
On Track - Undergraduate Space Education (3)

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AUSTRALIA'S FIRST MULTIDISCIPLINARY UNDERGRADUATE SPACE TECHNOLOGY EDUCATION SUITE; LESSONS LEARNED FROM CREATING AN INNOVATIVE AND PROGRESSIVE CURRICULUM

Abstract

Space Education is not typically available as multidisciplinary program for undergraduate students. Pathways for undergraduate students into a career in the space industry would typically be forged for discrete disciplines. E.g. Students had to study Physics, robotics, space science or other related technology programs to obtain any type of qualification in Space related fields. While multidisciplinary programs like the International Space University, Space Studies Program and Master of Space Studies program exists for professional graduates, Australian Universities did not offer generalist space education programs.

The Swinburne, Space Technology Undergraduate Space Education discipline is an innovative new multidisciplinary program which can be taken by students from every discipline. Students can enroll in Space Technology electives, Minor or Comajor programs. The Minor consists of four single subjects which can all be taken as electives and the Comajor consists of the Minor plus 3 project based units. Themes embedded in the program include Entrepreneurial Education, Space Career development and Space Industry Networking techniques and training along with opportunities for students to interface directly with industry through projects and a series of space industry events embedded within the program.

For maximum impact, the Space Technology suite of subjects were co-designed with industry, informed by specific industry needs for graduate employment to support the Australian Space Agency goal to triple the size of the Australian space industry by 2030. To establish whether the Australian Space Industry wanted graduates with generalist space technology education, I conducted a series of stakeholder engagement activities. Industry partners surveyed overwhelmingly indicated that they desired to employ graduates with established discipline degrees such as Computer Science, Physics/Chemistry, IT, Engineering etc. along with space industry specific experience.

The suite of Higher Education Undergraduate programs 'launched' in Semester 1, 2021, currently there are just under 100 enrolments (94) in this program. Student enrolments are from Computer Science, Physics, Engineering, Artificial Intelligence, Science, Aviation, Communications, Business, Gaming, Health and Biotechnology, just to name a few.

Lessons learned; The complex domestic and international industry engagement and management framework which supports the program is resource intensive. E.g. Industry partners receive measurable positive outcomes related to their engagement with the students in each unit, however companies do not always have a good methodology or sufficient management engagement and support for staff members working with Universities. This paper outlines some of the key strategies to maximizing the benefits for students working with industry partners.