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The International Space University (ISU), in Strasbourg, France, offers postgraduate education in space and space related subjects to the future professionals of the emerging global space community and is a non-governmental organization.

ISU's academic programs, with their interdisciplinary, international and intercultural hallmarks of excellence, cover all aspects of space programs and enterprises – from space science, space engineering, systems engineering, to space policy and law, business and management, and space and society. They provide international graduate students and young space professionals both an intensive interdisciplinary curriculum and also the opportunity to solve complex problems together in a stimulating intercultural environment.

With an international student body - typically 20-30 different nations are represented in an ISU class - and the involvement of space agencies and the aerospace industry worldwide in supporting, providing faculty, and sending students to ISU, the international dimension found at ISU is unique. The ISU experience gives students a substantive intercultural knowledge and skill set for working with people from other cultures, and has created an extensive international network that is proving to be increasingly important in implementing international space ventures.

Since its foundation in 1988 in Massachusetts, USA with the first 104 students representing 21 nations, ISU has graduated almost 2,200 students from 85 countries. Three founders of ISU were then students of MIT and one of them, Dr. P. Diamandis is also in activity as a founder of X PRIZE foundation which recently led to the realization of the first privately financed human space flight.

Since 1995, in addition to the SSP the Master's course has been established and has offered at the central campus in the Strasbourg University. In September 2002 a new central campus has inaugurated under the support of the national and the local governments of France (see **Fig. 1**). ISU is a non-profit private educational institution registered in France (Alsace) and also in the USA, and in early 2004 the ISU has been recognized by the French government as a higher educational institute. The ISU corresponds to the 5th year of the (French) University.

Now ISU conducts two major academic programs:

- A two-month Summer Session Program (SSP) travels to a new location each year around the world and will take place in Vancouver, Canada in the summer of 2005 and in Strasbourg in the next year. The summer session attracts students who take advantage of scholarships provided by public and private organizations, as well as space professionals sent by their organizations and companies as part of their career development. A typical summer session class involves about 30 different nationalities and is supported by some 80 lecturers, many of whom are very high level managers in space agencies and space industry. This combination facilitates lively exchanges of ideas on space subjects and unique networking opportunities by living all together for a two-month period.



Fig. 1 ISU Central Campus in France.

- In the program attracting many students are the Team Projects, in which each team composed of 40-50 members with different cultural and disciplinary backgrounds work together for a selected topic and draw out a report.
- A one-year Master's program is based at the new ISU central campus in Strasbourg, France. It had been conducted as a Master of Space Studies (MSS) to offer comprehensive studies for diverse space subjects, and from the academic year 2004/2005 onwards a new Master of Space Management (MSM), a more management oriented stream, has been introduced in parallel. As a consequence the MSS has been reorganized as a more technical oriented program. The two programs are running in parallel and interacting strong as shown in **Fig. 2** below.

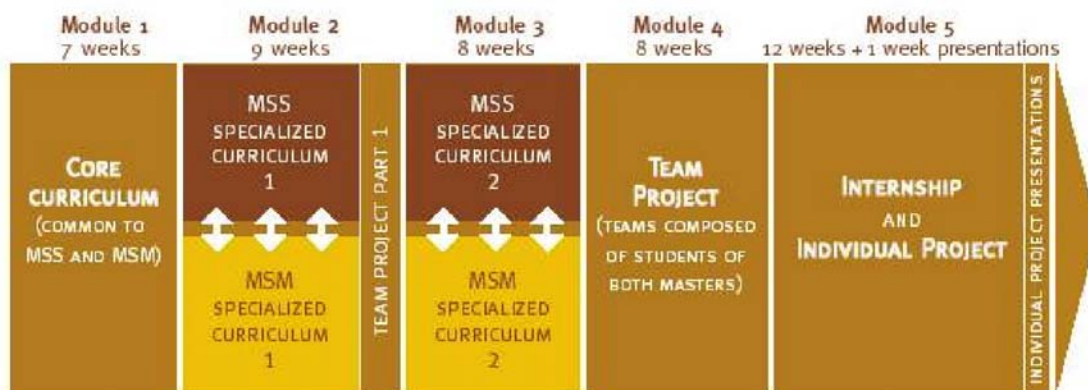


Fig 2. Structure of Masters Program.

It includes a twelve-week internship chosen by the student from a list of available opportunities in space agencies, institutes and industry. Creation of an individual report of thesis like is required through the internship.

Another feature of the Master's program is a modular structure which is composed of five modules of terms in an academic year. In the first three modules, core lectures for fundamentals and advanced topics are the main stream, and at module 4 the team project works are concentrated upon. The individual project follows through internship in module 5. This modular structure is useful for those who have difficulties to spend a whole year for the study in ISU to segment study periods over years.

This international class (typically some 20 nationalities are represented) is composed of selected students having a good undergraduate record and of young professionals either wishing to convert to a career in the space sector or sent by their parent organizations in order to prepare them for managerial and internationally oriented careers. A teaching body including several resident faculty members is composed of some 100 lecturers, many of whom are in the forefront of space agencies, academia and space industry.

For both programs a four year undergraduate degree (or equivalent) is the basic academic entry requirement. All applicants are evaluated by an admissions committee based on academic merit. The undergraduate specialization is less important and a typical class has a spread of students with engineering, physics, (bio)medical, legal, economic and humanities backgrounds, all of them, however, having expressed and demonstrated in their essays strong space related interest. English is the teaching language for both programs and a good knowledge of the language is an important entry requirement. Also the curriculum comprises a blend of experienced lecturers from a variety of professional fields, which guarantees a program that combines academic knowledge with practical skills training (including writing and presentation skills, cross-cultural negotiations, crisis management, etc.). Practical knowledge is also enhanced by a number of professional visits to space related establishments and industry, as well as participation in major space related public events and conferences.

ISU also offers an introductory short course and other short programs, seminars and workshops, either of general interest or tailored to a customer's specific needs.

Using its interdisciplinary network, ISU has been active in many research studies in the field of international

relations, spin-off, space tourism and so on.

Additionally, ISU hosts an Annual International Symposium that within an interdisciplinary and international forum encourages wide ranging discussion of topical space issues. The recent symposia are entitled,

- “*Civil, Commercial and Security Space : What will Drive the Next Decade?*” (2004)
- “*Satellite Navigation Systems : Policy, Commercial and Technical Interactions*” (2003)
- “*Beyond the International Space Station : The Future of Human Space Flight* ”(2002)
- “*Smaller Satellites: Bigger Business?* “(2001)
- “*The Space Transportation Market : Evolution or Revolution?* “(2000)

Lastly, interaction from Japan with ISU activities is overviewed briefly. The Japanese alumni of the SSP through 2004 amount around 125, which accounts 7% of overall 1,800 SSP alumni. In 1992 the SSP site was hosted in Japan by the city of Kitakyushu, where 17 students and some 50 lecturers had participated from Japan. From the middle of 1990’s onward, the participants have been stagnant in several students per year by a drop in financial support through progressive economic recession in the country.

For a one-year MSS, one or two employees sent yearly as students by the space agency, NASDA (present JAXA) for the first several years, as well as some Japanese graduate students have been granted ISU scholarship in recent years. Also in the first MSM class, a JAXA employee is participating. On the other hand, MSS internship opportunities in Japan have been growing and resulted in 6% of all MSS opportunities, which is the third most after the ones in the US and France. Motivated MSS students demonstrate rather high interest in Japanese space technologies as well as in its culture. Those motivated students will be future influential leaders in space sector and good communicators of Japanese culture to their countries or regions in the world.

Furthermore, a contribution to the teaching body has been some 10 lecturers each year for SSP after over 50 lecturers in 1992 when it was hosted in Japan. To Master’s program, a resident faculty member has been sent since 1999 as well as a few visiting lecturers for a several days from academia, the space agency, the national institutes etc. each year. The author is one of the resident faculty member detached by JAXA since 2002 and another resident faculty member, JAXA astronaut MD. C. Mukai has also been detached as a visiting professor since 2004.

It is worth while to notice that students from China and African countries are growing in numbers and studying with diligence.

For further information about the ISU, please consult the web site: www.isunet.edu

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Oct. 2003 – present: Senior Scientist, Japan Aerospace Exploration Agency

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