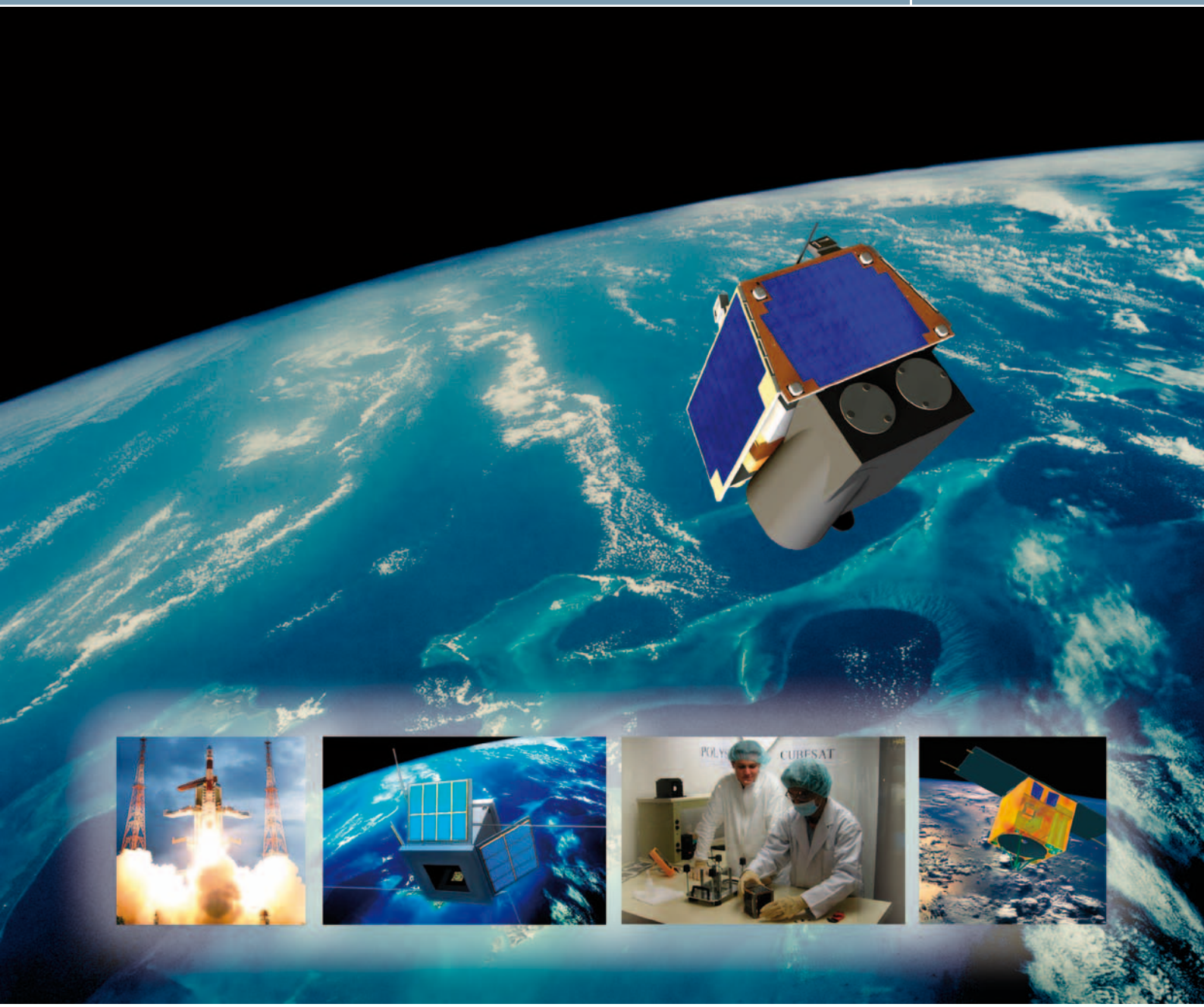
UNITED NATIONS

OFFICE FOR OUTER SPACE AFFAIRS

Educational Opportunities in Aerospace Engineering and Small Satellite Development



UNITED NATIONS

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Waseda University, Japan; University of Tokyo, Japan; Institute of Space Systems, University of Stuttgart, Germany

OFFICE FOR OUTER SPACE AFFAIRS
UNITED NATIONS OFFICE AT VIENNA

Educational Opportunities in Aerospace Engineering and Small Satellite Development

UNITED NATIONS
New York, 2010

This publication has not been formally edited.

Foreword

Since 1971 the United Nations Programme on Space Applications has provided support to capacity building in the use of space applications to Member States of the United Nations. During this time period the programme has organized more than 200 training courses, workshops, seminars and conferences and provided funding support for approximately 11,000 participants, mainly from the developing countries.

In recent years the growing affordability to develop and launch small satellites has led to an increasing interest in a growing number of countries to establish basic space technology capacities. For this reason the United Nations Office for Outer Space Affairs, in the framework of the United Nations Programme on Space Applications, has launched the Basic Space Technology Initiative (BSTI). The Initiative aims to support capacity building in basic space technology through the organization of workshops and training courses, the development of an education curriculum, the creation of long-term fellowship opportunities and the promotion of opportunities for international cooperation in the development and use of basic space technology and its applications.

As part of the Initiative the United Nations Office for Outer Space Affairs has conducted a comprehensive survey of world-wide academic programmes in aerospace engineering and small satellite development. The Office contacted approximately 250 universities and institutions from more than 40 countries to compile a list of educational opportunities in aerospace engineering and small satellite development as a resource for Member States to assess the availability of relevant educational opportunities and to help prospective students – particularly those from developing countries and emerging space nations – to identify suitable programmes they may wish to apply for.

The publication you now hold in your hands is the result of this survey. It contains the replies received from 43 academic institutions in 18 countries with information on their areas of specialization, details on the programmes they are offering, the admission requirements and scholarships available for international students, along with contact details where further information may be obtained. The programme listing has been arranged in alphabetical order. The information is reproduced as provided by the responding institutions and has not been verified by the Office for Outer Space Affairs.

We thank all contributors that have responded to the survey and hope that this publication will be a useful tool for Member States, prospective students and for the institutions themselves that are offering these programmes. We would also like to acknowledge the assistance of Ms. Rada Popova in preparing the initial edition of this publication. The Office for Outer Space Affairs will periodically update the programme listing and welcomes updates to the existing as well as new entries.

For additional information on the activities of the Basic Space Technology Initiative please visit the website of the United Nations Office for Outer Space Affairs (UNOOSA) at http://www.unoosa.org/oosa/en/SAP/bsti/index.html.

Vienna, August 2010

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United Nations Basic Space Technology Initiative

As a consequence of the launch of the first artificial satellite Sputnik I on 4 October 1957 Member States of the United Nations established the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS). Even before the beginning of the space age the potential benefits of space technology and its applications have been described. Now those benefits could finally be realized. COPUOS provided the forum to discuss matters related to the international cooperation in outer space activities. At three United Nations Conferences on the Exploration and Peaceful Uses of Outer Space, the UNISPACE conferences, held in Vienna in 1968, 1982 and 1999 the international community discussed and set the agenda for cooperation in outer space activities. The aim of such cooperation is to assure that space benefits would accrue to all countries and their citizens to improve the life on Earth.

In particular since the end of the Third United Nations Conference on the Peaceful Uses of Outer Space (UNISPACE III) in 1999 we have witnessed considerable progress in the operational use of space technology and its applications. Space-based assets such as telecommunication, Earth Observation and navigation satellites enable applications that deliver a wide array of services to the public or provide information contributing to policy- and decision making for sustainable development. Today space assets are essential elements of public infrastructures and the vast majority of countries are relying on space-based solutions. Individual users are increasingly experiencing space applications with services such as satellite television or satellite-based navigation being integrated into a growing number of very-day consumer products that are becoming more and more affordable to people in developed and developing countries.

Countries that have previously been mainly users of space applications are showing an interest in establishing basic capacities in space technology development. This aspiration has partially been guided by the fact that increasingly capable small satellites can be developed with an infrastructure and at a cost that is now also affordable to universities and smaller institutions. There have been recent examples where university-based small satellite projects have led to the establishment of small and medium-sized space enterprises that are now marketing their products on a commercial and world-wide basis. Developments such as these are not only creating new opportunities for international space cooperation but also contribute to further promoting the use of space technology and its applications.

In reaction to these developments a new activity line in the framework of the United Nations Programme on Space Applications, the United Nations Basic Space Technology Initiative (BSTI), is aiming to support capacity building in basic space technology. The mission of BSTI is to enhance access to space application tools through building capacity in basic space technology development.

The objectives of the Initiative can be summarized as follows:

- Respond in the framework of the United Nations Programme on Space Applications to the growing interest in many countries to establish indigenous capacities in basic space technology development
- Address the growing role of small satellites for education, basic space science and for operational applications
- Assist countries to comply with the relevant regulatory frameworks (registration of space objects, frequency allocation, space debris mitigation guidelines…)
- Promote the use of standards
- Promote international cooperation and information exchange

Initially the Initiative will focus on the following areas of priority:

I. Foundations

Conduct a series of international conferences on capacity building in basic space technology development. The UN/Austria/ESA Symposiums on Small on Small Satellite Programmes for Sustainable Development, a three-year series of symposiums, will be held from 2009 to 2011. Among other goals the Symposium series will contribute to define the overall direction of BSTI. A dedicated website and a mailing list to inform about the Initiative have been set up (http://www.unoosa.org/oosa/en/SAP/bsti/index.html).

II. Regional Conferences

In cooperation with host countries, BSTI plans to organize regional conferences on capacity building in basic space technology development in the regions that correspond to the United Nations Economic Commissions for Africa, Asia and the Pacific, Latin America and the Caribbean and Western Asia.

III. Education Curriculum

Following the UNISPACE'82 conference, a network of Regional Centres for Space Science and Technology Education, affiliated to the United Nations was established. The teaching at the centres is based on a set of education curriculums in the fields of remote sensing and Geographical Information Systems, satellite communications, satellite meteorology and global climate and space and atmospheric sciences. Education curriculums on space law and Global Navigation Satellite Systems are under preparation. The Initiative plans to develop an education curriculum in aerospace engineering and small satellite development. Educators involved with developing the curriculum would meet at the regional conferences. The survey of world-wide academic programmes in aerospace engineering and small satellite development is a first step towards the development of this curriculum. It is anticipated that educators from several of the institutions listed in this publication will contribute with their teaching experience to the education curriculum.

IV. Long-term Fellowship Programmes

Opportunities to participate in long-term fellowship programmes have been identified as important contributions to capacity building. Over the years the Programme on Space Applications, in cooperation with several donor countries and institutions has provided a range of such fellowship programmes for various space applications. BSTI will make available fellowship programme opportunities at the PhD level to candidates from developing countries and countries with economies in transition.

V. Projects

Still largely undefined at this point in time, but expected to emanate, as a follow-up, from the international and regional conferences is the possibility for BSTI to contribute to dedicated projects. Examples of projects under consideration are a best-practices handbook for small satellite development and opportunities for international cooperation, for example, constellations of small satellites sharing a common payload or purpose.

For additional information please consult the webpages of the Basic Space Technology Initiative on the website of the United Nations Office for Outer Space Affairs at http://www.unoosa.org/oosa/en/SAP/bsti/index.html, or contact Mr. Werner Balogh, Programme Officer for Basic Space Technology in the Space Applications Section of the Office for Outer Space Affairs (Tel.: +43-1-26060-4952, Email: werner.balogh@unoosa.org).

ARGENTINA

Argentina Association for Space Technology

I. General Information and Contact Person:

Name of Institution/University: Argentina Association for Space Technology

Name of Contact Person: Pablo de León, President
Mailing Address: C. C. 142 Suc. 28 (1428) Buenos Aires, Argentina
Telephone: +5411939229097
E-mail Address: deleon@aate.org
Website: http://www.aate.org

II. Programme Details:

Name of Programme/Activity: Course in Aerospace Technology
Type of Programme Short course
Language(s) of Instruction: Spanish
Number of Faculty Members in the Programme: 5
Number of Students in the Programme: 14
Duration of the Programme: 3 months

Cost of the Programme: **Tuition** 600 US Dollars
Website of the Programme: http://www.aate.org
Any Other Relevant Programme Information: Offered every three years only. Next course in 2012.

III. International Students:

Is the programme open to international students? Yes ☒ No ☐
Admission Requirements: Undergraduate diploma in science or engineering
Are there scholarships or is there any other type of support for international students? Yes, for Mercosur (South America Common Market) students.

BELGIUM

Von Karman Institute for Fluid Dynamics (VKI)

I. General Information and Contact Person:

Name of Institution/University: Von Karman Institute for Fluid Dynamics (VKI)

Name of Faculty/Department: Department of Aeronautics and Aerospace
Name of Contact Person: Prof. Herman Deconinck, Head of Department
Mailing Address: Waterloosesteenweg 72
1640 Sint-Genesius-Rode
Belgium
Telephone: +32 2 359 96 18
Fax: +32 2 359 96 00
E-mail Address: deconinck@vki.ac.be
Website: http://www.vki.ac.be

II. Programme Details:

Name of Programme/Activity: 1) Research Masters in Fluid Dynamics, option Aeronautics and Aerospace, Masters after Masters level.
2) Stagiaire and Final Year Thesis program for Master students (from Belgian or foreign universities)
3) PhD program

Type of Programme 1) Masters after Masters Level
2) Undergraduate Degree Level
3) PhD Level

Language(s) of Instruction: English

Number of Faculty Members in the Programme: 13

Number of Students in the Programme: 35

Duration of the Programme:
1) Research Masters: 9 months (October - June)
2) Stagiaire and Final Year Thesis: from 3 to 6 months
3) PhD: 3-4 years

Cost of the Programme: For Research Masters: No tuition fee for students from Albania, Belgium, Bulgaria, Czech Republic, Croatia, Estonia, France, Germany, Hungary, Iceland, Italy, Latvia, Lithuania, Luxemburg, Norway, Portugal, Romania, Slovakia, Slovenia, Spain and Turkey. Citizens of Canada, Denmark, Greece, The Netherlands, Poland, the U.K. and the U.S.A. may receive information on the tuition fee by writing to the Director, von Karman Institute (secretariat@vki.ac.be). For further information, please contact secretariat@vki.ac.be

Website of the Programme: http://www.vki.ac.be (click on Education)

Any Other Relevant Programme Information: 2nd VKI Cube Sat symposium 19-22 October, 2010.
Student work is integrated with ongoing funded Research programs, e.g. related to launch and development of Cube Sats, in flight measurement techniques, atmospheric entry aerothermodynamics, hypersonic entry, launch vehicles

III. International Students:

Is the programme open to international students?	Yes ☒ No ☐
Admission Requirements:	For Research Masters program (MAM level): Academic Masters (Ms) in engineering sciences, physics or mathematics required, see website VKI
Are there scholarships or is there any other type of support for international students?	For Research Masters: Scholarships available for students from the following countries: Albania, Belgium, Bulgaria, Czech Republic, Croatia, Estonia, France, Germany, Hungary, Iceland, Italy, Latvia, Lithuania, Luxemburg, Norway, Portugal, Romania, Slovakia, Slovenia, Spain and Turkey. Citizens of Canada, Denmark, Greece, The Netherlands, Poland, the U.K. and the U.S.A. may receive information on the tuition fee by writing to the Director, von Karman Institute. For other programs please check with the VKI secretariat: secretariat@vki.ac.be

CANADA

Carleton University

I. General Information and Contact Person:

Name of Institution/University: Carleton University

Name of Faculty/Department: Mechanical and Aerospace Engineering
Contact Person: Metin I. Yaras, Professor and Chair
Mailing Address: 3135 Mackenzie Building - 1125 Colonel By Drive,
Ottawa, Ontario, Canada K1S 5B6
Telephone: 1 613 520 2600 ext 1174
Fax: 1 613 520 5715
E-mail Address: metin_yaras@carleton.ca
Website: http://www.mae.carleton.ca

II. Programme Details:

Name of Programme/Activity: Aerospace Engineering
Type of Programme Undergraduate Degree Level
Graduate Degree Level
PhD/Postdoc Level
Language(s) of Instruction: English
Number of Faculty Members in the Programme: 35
Number of Students in the Programme: Undergraduate: 1st-year intake: 120 students
Graduate: typically 60 to 80 students (30%PhD, 70% MASc/MEng)
Duration of the Programme: Undergraduate: 4 years Master's: 2 years; PhD: 3-5 years
Cost of the Programme:
Tuition Undergraduate: $15000-$17000 (international students)
Graduate: $16000-$17,000 (international students)
Textbooks 1300$
Living costs 10000$
Website of the Programme: www.mae.carleton.ca
Other Relevant Programme Information: Undergraduate:
http://www.mae.carleton.ca/maehtmls/projects.html
Graduate:
http://research.mae.carleton.ca/

III. International Students:

Is the programme open to international students? Yes ☒ No ☐
Admission Requirements: www.carleton.ca
Are there scholarships or is there any other type of support for international students? http://www2.carleton.ca/admissions/howtoapply/
http://www2.carleton.ca/awards/

University of Toronto

I. General Information and Contact Person:

Name of Institution/University: University of Toronto

Name of Faculty/Department: Institute for Aerospace Studies
Name of Contact Person: Prof. Chris Damaren
Mailing Address: University of Toronto
Institute for Aerospace Studies
4925 Dufferin Street, Toronto, Ontario, M3H 5T6 Canada
Telephone: 1-416-667-7704
Fax: 1-416-667-7799
E-mail Address: damaren@utias.utoronto.ca
Website: http://www.utias-sfl.net

II. Programme Details:

Name of Programme/Activity: Space Flight Laboratory
Type of Programme Graduate Degree Level — Master
PhD/Postdoc level — PhD
Language(s) of Instruction: English

Number of Faculty Members in the Programme: 2
Number of Students in the Programme: 10
Duration of the Programme: 2 years

Cost of the Programme: **Tuition** CDN $23,000/year
Website of the Programme: http://www.utias-sfl.net
Any Other Relevant Programme Information: The Space Flight Laboratory (SFL) at the University of Toronto Institute for Aerospace Studies (UTIAS) seeks outstanding candidates for graduate study at the Masters and Ph.D. levels. Students admitted to the program will have the chance to be involved in real space missions and gain practical, hands-on space systems engineering experience under the tutelage of our expert staff. UTIAS/SFL seeks students with strong backgrounds in Aerospace, Electrical and Computer Engineering and Mechanical Engineering. UTIAS/SFL offers students the opportunity to be a part of an integrated multi-disciplinary team that designs, builds, launches and operates real satellites in approximately two year cycles, or the time it takes to complete a Masters degree. While at UTIAS/SFL, students work side by side with engineering professionals in small teams of 10-15 people to define and realize space missions involving satellites under 10 kilograms, or “nanosatellites.” In two years, students are exposed to the complete spacecraft development cycle, from mission conception to launch and on-orbit operations. UTIAS/SFL nanosatellite missions include technology demonstration and space science missions exploiting the latest commercial technologies. These technologies offer high performance and miniaturization not typically available in traditional space missions. Recent missions in the Canadian Advance Nanospace eXperiment (CanX) program include CanX-2, a technology demonstration mission with atmospheric science payloads, CanX-3 (BRITE), a space astronomy mission involving four nanosatellites performing long duration stellar photometry, and CanX-4&5, two identical satellites demonstrating precise on-orbit

formation flight. Mission concepts currently under study include the Lunette lunar farside gravity mapping mission and the Magnetic Observations of Mars Enabled by Nanosatellite Technology (MOMENT) mission. As part of a tightly integrated design team, students specialize in one of several areas, while actively participating in the design of the complete spacecraft.

III. International Students:

Is the programme open to international students?	Yes ☐ No ☒

DENMARK

Aalborg University

I. General Information and Contact Person:

Name of Institution/University: Aalborg University

Name of Faculty/Department: Faculty of Engineering and Science
Name of Contact Person: Prof. Jens Frederik Dalsgaard Nielsen, manager of University Student Satellite Program
Mailing Address: Fredrik Bajersvej 7C
DK - 9220 Aalborg O
Denmark
Telephone: +45 287 287 53
Fax: +45 98151739
E-mail Address: jdn@es.aau.dk
Website: http://www.studentspace.aau.dk

II. Programme Details:

Name of Programme/Activity: AAUSAT3 - constructing of our 3rd cubesat to be launched 2011. AIS as scientific payload
- smad
- system engineering

Type of Programme Graduate Degree Level
PhD/Postdoc Level
Language(s) of Instruction: English/Danish
Number of Faculty Members in the Programme: 3
Number of Students in the Programme: 30
Duration of the Programme: 2 years
Cost of the Programme: **Tuition** EU students no tuition, outside depends ...
Website of the Programme: http://www.studentspace.aau.dk

III. International Students:

Is the programme open to international students? Yes ☒ No ☐
Admission Requirements: We do carry out visitation.
Are there scholarships or is there any other type of support for international students? No

EGYPT

Cairo University - Aerospace Engineering

I. General Information and Contact Person:

Name of Institution/University:	The University of Cairo
Name of Faculty/Department:	Faculty of Engineering/Department of Aerospace Engineering
Name of Contact Person:	Nader Abuelfoutouh, Head of Department
Mailing Address:	Department of Aerospace Engineering, Faculty of Engineering Cairo University, 12613 Giza, Egypt.
Telephone:	+20-101595817 (mobile)
E-mail Address:	naderabuelfoutouh@yahoo.com
Website:	http://www.eng.cu.edu.eg/aerospace/

II. Programme Details:

Name of Programme/Activity:	Aerospace Engineering		
Type of Programme	Undergraduate Degree Level		BSc
	Graduate Degree Level		MSc
	PhD/Postdoc Level		PhD
Language(s) of Instruction:	English		
Number of Faculty Members in the Programme:	20 active		
Number of Students in the Programme:	300		
Duration of the Programme:	4 years		
Cost of the Programme:	**Tuition**	For Egyptian students (free)	
		Foreign undergraduate student	$3000/year
		Foreign graduate student Diploma	$3000/year
		Foreign graduate student MSc	$3200/year
		Foreign graduate student PhD	$4200/year
		More information at: http://foreign.cu.edu.eg/english/TuitionFees.html	
	Textbooks	$300 per semester	
	Living costs	$600 per month	
	Other costs	$100 transportation/month	
Website of the Programme:	http://www.eng.cu.edu.eg/aerospace/		
Any Other Relevant Programme Information:	Anticipated is to build and launch a University nano-satellite		

III. International Students:

Is the programme open to international students?	Yes ☒ No ☐
Admission Requirements:	Undergraduate level : One basic sciences year (Math, calculus, graphics, Mechanics, Physics, Chemsity) Diploma level : BSc in engineering + TOEFL MSc level : TOEFL +BSc or Diploma in engineering PhD level : MSc in engineering
Are there scholarships or is there any other type of support for international students?	No

Cairo University - Space Technologies and Applications

I. General Information and Contact Person:

Name of Institution/University: The University of Cairo

Name of Faculty/Department: Faculty of Engineering/Aerospace Engineering Department
Name of Contact Person: Mohammed Khalil Ibrahim, Associate Professor
Mailing Address: Aerodynamic Laboratory, Department of Aerospace Engineering, Faculty of Engineering, Cairo University, 12613 Giza, Egypt.
Telephone: +20-10 676 4242
Fax: +20-2-3572 3486
E-mail Address: mkhalil@eng.cu.edu.eg
Website: http://www.eng.cu.edu.eg/aerospace/

II. Programme Details:

Name of Programme/Activity: Space Technologies and Applications
Type of Programme Undergraduate Degree Level Final Year Only
Graduate Degree Level
PhD/Postdoc Level
Language(s) of Instruction: English
Number of Faculty Members in the Programme: Around 30
Number of Students in the Programme: 10-30
Duration of the Programme: Min. 2 Years, max. 5 Years
Cost of the Programme:
Tuition TBD
Textbooks Available
Living costs TBD
Other costs TBD
Website of the Programme: http://www.eng.cu.edu.eg/aerospace/

III. International Students:

Is the programme open to international students? Yes ☒ No ☐
Admission Requirements: TOEFL, science based B.Sc. for graduate studies
Are there scholarships or is there any other type of support for international students? TBD

GERMANY

Hochschule Bremen, University of Applied Sciences

I. General Information and Contact Person:

Name of Institution/University: Hochschule Bremen, University of Applied Sciences

Name of Faculty/Department: Institute of Aerospace Technology

Name of Contact Person: Prof. Dr.-Ing. Bernd Steckemetz
Mailing Address: Hochschule Bremen
Prof. Dr.-Ing. Bernd Steckemetz
Institute of Aerospace Technology
Flughafenallee 10
28199 Bremen
Germany
Telephone: +49 (0) 421 5905 5520
Fax: +49 (0) 421 5905 5536
E-mail Address: Bernd.Steckemetz@hs-bremen.de
Website: http://www.hs-bremen.de

II. Programme Details:

Name of Programme/Activity: Aeronautical and Space Engineering
Type of Programme Undergraduate Degree Level
Language(s) of Instruction: German
Number of Faculty Members in the Programme: 10
Number of Students in the Programme: 35
Duration of the Programme: 7 semesters
Cost of the Programme: TBD
Website of the Programme: http://www.hs-bremen.de
Any Other Relevant Programme Information: AISAT

III. International Students:

Is the programme open to international students? Yes ☒ No ☐
Admission Requirements: http://www.hs-bremen.de
Are there scholarships or is there any other type of support for international students? TBD

Julius-Maximilians-Universität Würzburg

I. General Information and Contact Person:

Name of Institution/University:	Julius-Maximilians-Universität Würzburg
Name of Faculty/Department:	Lehrstuhl Informatik VII
Name of Contact Person:	Professor Dr. Klaus Schilling
Mailing Address:	Am Hubland Informatikgebäude, B 200 97074 Würzburg, Germany
Telephone:	+49 931 31 86647
Fax:	+49 931 31 86679
E-mail Address:	space@informatik.uni-wuerzburg.de
Website:	http://www.spacemaster.uni-wuerzburg.de/

II. Programme Details:

Name of Programme/Activity:	SpaceMaster - Joint European Master in Space Science and Technology	
Type of Programme	Graduate Degree Level	M.Sc
	Other	Double Degree, M.Sc
Language(s) of Instruction:	English	
Number of Faculty Members in the Programme:	3	
Number of Students in the Programme:	50 per year	
Duration of the Programme:	2 Years	
Cost of the Programme:	**Tuition**	€ 500/semester
	Textbooks	0 -200 €
	Living costs	depending on the country, approx. 700 €/Month
	Other costs	travel expenses
Website of the Programme:	http://www.spacemaster.uni-wuerzburg.de	
Any Other Relevant Programme Information:	There are PhD-programs in place with emphasis on spacecraft design and engineering. The university pursues in this program the design and the operations of the UWE (University Würzburg's Experimental satellites) small satellites. So far UWE-1 (2005) and UWE-2 (2009) have been launched successfully into earth's orbit. http://www7.informatik.uni-wuerzburg.de/en/research/research_groups /space_exploration/projects/cubesat/ Joint European Master in Space Science and Technology, 120 ECTS in a 2-year degree programme. Consortium of Universities responsible for the SpaceMaster Course: • Luleå University of Technology, Sweden (Coordinating University) • University of Würzburg, Germany (place of 1st semester) • Cranfield University, England • Czech Technical University, Czech Republic • Helsinki University of Technology / Aalto University, Finland • Université Paul Sabatier Toulouse III, France • University of Tokyo, Japan • Utah State University, U.S.A. Lecturers are top-researchers and experienced professionals from space organisations, industry and academia.	

III. International Students:

Is the programme open to international students?	Yes ☒ No ☐
Admission Requirements:	Bachelor's degree in Engineering or science English proficiency test
Are there scholarships or is there any other type of support for international students?	Erasmus Mundus Scholarships for non-European students Additional Scholarships • European students can apply for the EU Erasmus mobility grant oriented to promote studies abroad. The student's home university will give information and support on how to apply for these scholarships. • Students from ESA Member States may receive support from the European Space Agency, Directorate of Human Space Flight (pdf, web info). • Non-EU students can apply for scholarships from the National Institutes of Consortium countries. • Zonta International Programs: Amelia Earhart Fellowships • Leonardo programme

SRH University of Applied Sciences Heidelberg

I. General Information and Contact Person:

Name of Institution/University:	SRH University of Applied Sciences Heidelberg
Name of Faculty/Department:	Electrical Engineering
Contact Person:	Prof. Dr. Achim Gottscheber
Mailing Address:	Bonhoefferstrasse 11, 69123 Heidelberg, Germany
Country:	Germany
Telephone:	+49 6221 88 2387
Fax:	+49 6221 88 1011
E-mail Address:	achim.gottscheber@fh-heidelberg.de
Website:	http://www.fh-heidelberg.de/satellite

II. Programme Details:

Name of Programme/Activity:	HeidelSat
Type of Programme	Undergraduate Degree Level Graduate Degree Level PhD/Postdoc Level
Language(s) of Instruction:	English, German
Number of Faculty Members in the Programme:	3
Number of Students in the Programme:	20 per semester (October/April)
Duration of the Programme:	1,5 years
Cost of the Programme:	**Tuition** 10.000,- EUR - 20.000,- EUR **Textbooks** Manuscript **Living costs** 500 EUR per month
Website of the Programme:	http://www.fh-heidelberg.de/satellit
Any Other Relevant Programme Information:	Cubesat project, measurement of cosmic rays for long term climate reserach

III. International Students:

Is the programme open to international students?	Yes ☒ No ☐
Admission Requirements:	Bachelor degree
Are there scholarships or is there any other type of support for international students?	EU Erasmus mobility grant ESA support National Institutes of Consortium countries Amelia Earhart Fellowship Leonardo Program

INDIA

Hindustan Aviation Academy

I. General Information and Contact Person:

Name of Institution/University: Hindustan Aviation Academy

Name of Faculty/Department: Institute of Aerospace Engineering
Name of Contact Person: Air Cmde Sajjad Rahim VSM
Mailing Address: PB NO.3776, Chinnapanahalli, Marathahalli P.O, Bangalore-560 037
Telephone: +918025238650,25232217
Fax: +8025232448
E-mail Address: haeas@rediffmail.com, contactus@evehans.com
Website: http://www.hindustanacademy.com

II. Programme Details:

Name of Programme/Activity: B.Tech. Aerospace Engineering
Type of Programme Graduate Degree Level
Language(s) of Instruction: English

Number of Faculty Members in the Programme: 10
Number of Students in the Programme: 180
Duration of the Programme: 4 years (8 semesters)
Cost of the Programme:
Tuition Aprx. Rs.5 Lac
Textbooks Aprx.Rs.25000
Living costs Aprx.1 Lac per annum
Website of the Programme: http://www.hindustanacademy.com

III. International Students:

Is the programme open to international students? Yes ☒ No ☐
Admission Requirements: 10+2, MIn.55% in Physics, Chemistry & Maths Group
Are there scholarships or is there any other type of support for international students? Yes

Indian Institute of Aeronautical Engineering

I. General Information and Contact Person:

Name of Institution/University: Indian Institute of Aeronautical Engineering

Name of Faculty/Department:	Aircraft-Aeronautical-Aerospace Engineering
Name of Contact Person:	Mahendra Kumar, Director
Mailing Address:	c-66, Sect-2, Keshar Singh Marg, Defence Colony, Dehradun, Harakhand, Pin: 248001
Telephone:	+91 135 3293326, 999 730 7530
Fax:	+91 135 2665136
E-mail Address:	iiaedehradun@gmail.com
Website:	http://www.iiaedehradun.org

II. Programme Details:

Name of Programme/Activity:	Aircraft-Aeronautical-Aerospace Engineering	
Type of Programme	Undergraduate Degree Level	
	Other:	Pilot (in partnership with NMC, USA)
Language(s) of Instruction:	English	
Number of Faculty Members in the Programme:	18	
Number of Students in the Programme:	80	
Duration of the Programme:	2 years at the IIAE, Dehradun plus at least 1,5 years at partner UK universities	
Cost of the Programme:	**Tuition**	Rs 260 000/ year
	Textbooks	Rs 20 000 /for the whole study
	Living costs	Rs 60 000/year
	Other costs	Rs 60 000
Website of the Programme:	http://www.iiaedehradun.org	
Any Other Relevant Programme Information:	Student-made model of missile anticipated in Remote Control Aircraft, made mode design of Airport, Made jet engine at partner college Perth (Scotland)	

III. International Students:

Is the programme open to international students?	Yes ☒ No ☐
Are there scholarships or is there any other type of support for international students?	50% scholarship to economically weak students from underdeveloped countries

Indian Institute of Technology Bombay

I. General Information and Contact Person:

Name of Institution/University: Indian Institute of Technology Bombay

Name of Faculty/Department: Aerospace Engineering Department
Name of Contact Person: Prof. P. M. Mujumdar, Professor & Head
Mailing Address: Department of Aerospace Engineering,
Indian Institute of Technology Bombay,
Powai, Mumbai 400 076, India
Telephone: +91-22-25767100
Fax: +91-22-25722602
E-mail Address: head.aero@iitb.ac.in
Website: http://www.aero.iitb.ac.in

II. Programme Details:

Name of Programme/Activity: Established in 1966-67 as Department of Aeronautical Engineering, the department was renamed as Department of Aerospace Engineering in 1992. The academic programs of the department focus mainly on the science and engineering/technology behind flight vehicles and their sub-systems.
The courses cover fundamentals of fluid dynamics, propulsion, structural mechanics, vehicle dynamics, control and guidance etc., as well as applications of these fundamentals to the analysis of aerospace vehicles and also to some extent their design. The program does not deal with the operational side of aerospace engineering such as airport and airline operations, piloting/flying, maintenance etc. Although the program deals with science and engineering of both aircraft and spacecraft, the emphasis is primarily on the former.
Courses related to spaceflight are included in the curriculum but the number of courses dealing explicitly with the space part is lesser than the aeronautical part. The department runs strong undergraduate and graduate programs in Aerospace Engineering and carries out basic and applied research as well as continuing education activities in various sub-disciplines of Aerospace Engineering such as Aerodynamics, Propulsion, Structures, Dynamics and Control.
The academic programs include the 4 year BTech degree program, the 5 year Dual Degree program, the 2 year MTech program and the PhD program.
The department is an excellent fusion of academics, research and technology development, coupled with education beyond the classroom and co-curricular activities.

Type of Programme Undergraduate Degree Level
Graduate Degree Level
PhD/Postdoc Level

Language(s) of Instruction: English

Number of Faculty Members in the Programme: 20

Number of Students in the Programme: About 200 UG & 125 PG across all the years of all the programs

Duration of the Programme: 4 years; Dual Degree (BTech+MTech) – 5 years;
MTech - 2years.

Cost of the Programme:	Varies from program to program. Please see the brochures for different programs available through links on the webpage http://www.iitb.ac.in/academic/toadmission.jsp. There is a separate brochure for foreign students. The cost of the programs for international students is substantially different from the cost for Indian nationals. International students in the PG programs are admitted under the Self-financed category.
Website of the Programme:	http://www.iitb.ac.in/academic/toadmission.jsp
Any Other Relevant Programme Information:	The landmark project PRATHAM, the IIT Bombay student satellite project was initiated in 2008. It involves complete ab-initio design, development and launch of a nano-satellite of 10 Kg class, under the design-build-fly initiative nurtured during the past few years by the department. This student initiative is a pathbreaker indicating the new trends and new opportunities in learning of satellite and space technologies in the institute. The project is entirely a student project involving students from all departments of IIT Bombay and mentored by faculty from several departments as well as scientists from the Indian Space Research Organization. The leadership and co-ordination is provided by the students and mentors from the Aerospace Engineering Dept. Please note that this work is not a part of academic program requirement of the students. This is a co-curricular initiative with almost no academic credit. Students from other Indian Institutions as well as students from foreign institutions have collaborated on this project, specially in respect of establishing ground stations. Detailed information is available on the project webpage at http://www.aero.iitb.ac.in/pratham

III. International Students:

Is the programme open to international students?	Yes ☒ No ☐
Admission Requirements:	International students can be admitted to the UG program only through the Joint Entrance Examination (JEE) conducted by all IITs. International students can apply to the PG programs as self-financed students or through the Cultural Exchange Fellowship Programmes (Govt. Of India). The eligibility requirements for all the programs and the admissions procedure are given in the separate brochure for admission of foreign students at http://www.iitb.ac.in/academic/toadmission.jsp
Are there scholarships or is there any other type of support for international students?	ICCR (Indian Council for Cultural Relations Scholarship (Government of India) is available to foreign students applying for PG programs only. Candidates desirous of admission under this Fellowship Programme are required to apply through the Indian High Commission/Embassy as the case may be, in their respective Countries. They will send the application to ICCR Government of India and then ICCR will forward the application/s to various University / Institute in India as the case may be for consideration. In case the applicant is found suitable for admission, admission offer letter will be sent to him/her through Indian Council for Cultural Relations, New Delhi.

Noorul Islam Centre for Higher Education / Noorul Islam University

I. General Information and Contact Person:

Name of Institution/University: Noorul Islam Centre for Higher Education/Noorul Islam University

Name of Faculty/Department: Department of Aerospace Engineering
Name of Contact Person: Dr. Vijayan Baburaj, Senior Professor and Dean, School of Inter-Disciplinary Studies
Mailing Address: Noorul Islam University
Kumaracoil
KK Dist. Tamil Nadu
India 629180
Telephone: +91 4651 - 250566
Fax: +91 4651 - 250266
E-mail Address: info@niuniv.com
Website: http://www.niuniv.com

II. Programme Details:

Name of Programme/Activity: Bachelor's Degree in Aerospace Engineering (B.E)
Type of Programme Undergraduate Degree Level
Language(s) of Instruction: English
Number of Faculty Members in the Programme: 12
Number of Students in the Programme: 60 in every academic year
Duration of the Programme: 4 years (8 semesters)
Cost of the Programme:

Tuition	US$ 5000 per year
Textbooks	US$ 1500 per year
Living costs	US$ 2500~4000 per year
Other costs	US$ 1500~2000 per year

Website of the Programme: http://www.niuniv.com
Any Other Relevant Programme Information: A course designed to meet the present demand of Aerospace industries in general with emphasis on rockets and satellite technology, reentry missions and space station R&D activity.
The university also offers a separate 4-year B.E degree course in Aeronautical Engineering under a separate department with emphasis on design and production of aircrafts and helicopters, airport / airlines manangement and civil aviation sector.
Both the streams have almost the same curiculum for the first 4 semesters and specialised subjects are offered in the final and pre-final years (remaining 4 semesters) and also the final year projects are undertaken in the specialised Aerospace Engineering.

Outer space applications and international co-operation such as material processing, formulation of life-saving drugs, biological development etc. under the influence of zero gravity environment are also included in the curriculum of this new course.

III. International Students:

Is the programme open to international students?	Yes ☒ No ☐
Admission Requirements:	A Pass in + 2 level (12 years of schooling) with 60% marks with Physics, Chemistry and Mathematics subjects and a pass in the Entrance examination conducted by the university (NIUEE)
Are there scholarships or is there any other type of support for international students?	Available to a limited extent to really needy students and shall be considered cese by case. For more information, please contact the HOD of Aerospace Engineering Department.

ISRAEL

Technion – Israel Institute of Technology

I. General Information and Contact Person:

Name of Institution/University: Technion - Israel Institute of Technology

Name of Faculty/Department: Aerospace Engineering
Name of Contact Person: Pini Gurfil, Associate Professor
Mailing Address: Faculty of Aerospace Engineering Technion
Israel Institute of Technology
Technion City
Haifa 32000, Israel
Telephone: +972-4-8294973
Fax: +972-4-8295643
E-mail Address: pgurfil@technion.ac.il
Website: http://www.technion.ac.il

II. Programme Details:

Name of Programme/Activity: The undergraduate program of the Faculty provides its students with the basis for an engineering career and for developing professional skills. This objective is achieved by a broad scientific base in the first three semesters, followed by the fundamentals of all major aerospace disciplines. These include fluid mechanics, structures, propulsion, as well as control theory, space engineering, production and design. In their fourth year a broad spectrum of elective courses are offered in order to acquaint the students with modern aerospace developments, including computer applications in aerospace engineering.

Fields of study include: Aerodynamics, Aeroelasticity, Aerostructures of composites and metals; Combustion and Detonation, Heat and Mass transfer, Flight mechanics, Space mechanics, Space systems, Flight control, Instrumentation and Guidance, Spacecraft control, Fluid dynamics, Jet and Rocket propulsion

Type of Programme

Undergraduate Degree Level	Bachelor of Science
Graduate Degree Level	Master of Science, Master of Science in Aerospace Engineering
PhD/Postdoc Level	Doctor of Science

Language(s) of Instruction: Undergraduate programs are taught in Hebrew. Currently the Faculty of Aerospace Engineering is in the process of developing international undergraduate programs to be taught in English. Graduate studies are taught at both Hebrew and English. The Faculty of Aerospace Engineering is in the process of building an international Master of Engineering program, to be taught in English

Number of Faculty Members in the Programme: 25

Number of Students in the Programme: 400

Duration of the Programme: 4 Years (BSc); 2 Years (MSc); 3 Years (PhD)

Cost of the Programme: **Tuition** ~$12,000 per year
Living costs ~$12,000 per year.

Website of the Programme: http://ae-www.technion.ac.il/

Any Other Relevant The students of the Faculty of Aerospace engineering have built

Programme Information:	and launch the TechSat, a 50-kg micro-satellite holding the world record for mission lifetime for satellites of this size (12 years in orbit). The Faculty of Aerospace Engineering, jointly with the Asher Space Research Institute, have built innovative laboratories for space systems research and development. These include the Distributed Space Systems Laboratory, which conducts experimental validation of satellite formation flying technologies, nano-satellite and femto-satellite development, and design of control, navigation and sensing technologies for small satellites.

III. International Students:

Is the programme open to international students?	Yes ☒ No ☐
Admission Requirements:	The Faculty of Aerospace Engineering is in the process of defining and consolidating the admission conditions for international students. Graduate students may contact faculty members on a personal basis.
Are there scholarships or is there any other type of support for international students?	The Technion may be providing financial support for international students.

ITALY

University of Bologna

I. General Information and Contact Person:

Name of Institution/University:	University of Bologna
Name of Faculty/Department:	II Faculty of Engineering
Name of Contact Person:	Paolo Tortora, Associate Professor, coordinator for Space Systems activities
Mailing Address:	Via Fontanelle 40, Bologna, Italy
Telephone:	+39 0543 374456
Fax:	+39 0543 374477
E-mail Address:	paolo.tortora@unibo.it
Website:	http://www.ing2.unibo.it

II. Programme Details:

Name of Programme/Activity:	Alma Mater Satellite (ALMASat)	
Type of Programme	Undergraduate Degree Level Graduate Degree Level PhD/Postdoc Level	
Language(s) of Instruction:	Italian (English if foreign studens are present)	
Number of Faculty Members in the Programme:	4	
Number of Students in the Programme:	10 per year (approximately)	
Duration of the Programme:	3-6 months for undergraduates, 6-9 months for graduates, 3 years for PhD students	
Cost of the Programme:	**Tuition**	2500€ per year (only for undergraduate and graduate students)
	Textbooks	About 300€ per year
	Living costs	500€ per month
Website of the Programme:	http://www.almasat.unibo.it	

III. International Students:

Is the programme open to international students?	Yes ☒ No ☐
Admission Requirements:	Basic knowlege in Orbital Mechanics, Spacecraft Subsystems
Are there scholarships or is there any other type of support for international students?	Scholarships are available for PhD students, not at undergraduate or graduate level

University of Pisa

I. General Information and Contact Person:

Name of Institution/University:	University of Pisa
Name of Faculty/Department:	Department of Aerospace Engineering
Name of Contact Person:	Prof. Mariano ANDRENUCCI, Full Professor of Aerospace Propulsion
Mailing Address:	Università di Pisa Dipartimento di Ingegneria Aerospaziale 8, Via Gerolamo Caruso 56122 Pisa Italy
Telephone:	390502217211
Fax:	390502217244
E-mail Address:	m.andrenucci@ing.unipi.it
Website:	http://www2.ing.unipi.it/~a003183/

II. Programme Details:

Name of Programme/Activity:	Master of Science in Aerospace Engineering	
Type of Programme	Graduate Degree Level	
Language(s) of Instruction:	English	
Number of Faculty Members in the Programme:	8	
Number of Students in the Programme:	32	
Duration of the Programme:	2 years	
Cost of the Programme:	**Tuition**	6000 EUR for EU Nationals 10000 for Non-EU Nationals
	Textbooks	1000 EUR
	Living costs	Accommodation and utilities 4200 EUR Board 1800 EUR
	Other costs	Health and dental 1000 EUR
Website of the Programme:	http://www.spaceatdia.org/	
Any Other Relevant Programme Information:	http://www.spaceatdia.org/index.php?page=about-us http://www.spaceatdia.org/index.php?page=MSSE-program http://www.spaceatdia.org/index.php?page=research-at-dia http://www.alta-space.com/	

III. International Students:

Is the programme open to international students?	Yes ☒ No ☐
Admission Requirements:	EU citizens: Admission to the Laurea Magistrale in Ingegneria Aerospaziale is open to all candidates in possession of the relevant requirements. A yearly tuition fee, established on the basis of academic ability and financial circumstances of the student, is due. Admission to the Dottorato di Ricerca in Ingegneria Aerospaziale (Philosophy Doctor Degree in Aerospace Engineering) is obtained through an entrance examination open to candidates in possession of a Laurea Magistrale in Ingegneria Aerospaziale, or of a recognized equivalent degree. A yearly tuition fee is required (see

later).
Non-EU citizens:
The University establishes every year the maximum number of non-EU students that can be admitted in each educational program. Within this limit, admission is granted on a competitive basis to the candidates of superior ability in possession of the relevant requirements. A yearly tuition fee, established on the basis of academic ability and financial circumstances of the student, is due.
To be admitted to the Laurea Magistrale in Ingegneria Aerospaziale an applicant must have received an undergraduate degree in science or engineering approved by the Consiglio del Corso di Laurea Magistrale in Ingegneria Aerospaziale. He or she must, moreover, have attained such a scholastic record and present such recommendations as to indicate fitness to pursue, with distinction, advanced study and research.
In order to be admitted to the space engineering option of the Laurea Magistrale in Ingegneria Aerospaziale international students from non-English-speaking countries are expected to read, write, and speak English and comprehend the spoken language. In addition, to be a candidate for an advanced degree, the student must have acquired the power of clear and forceful self-expression in both oral and written English.

Are there scholarships or is there any other type of support for international students?

The MSSE Graduate Program offers financial aid to international students in the following forms:
Tuition waivers/reductions. Tuition waivers or reductions are granted on the basis of merit and need within the limits of the allocated resources. Non-EU Nationals partaking in this program will be waived the 4000 EUR difference between the Non-EU national tuition and EU national tuition.
EU Nationals (or Non-EU Nationals who have obtained the Non-EU National tuition supplement waiver) may be offered a reduced tuition rate.
A limited number of Graduate Research Assistantships (GRA) awarded by individual faculty members is available every year on a competitive basis. Graduate Research Assistants perform laboratory work or research of a character that affords useful academic experience while permitting a full academic schedule of courses. Typical GRAs have half-time (20 hours/week) salaries ranging from 800 to 1000 EUR per month plus full coverage of tuition fees.
Graduate Teaching Assistantships (GTA) are also awarded on a competitive basis, typically to second year students willing to devote part of their time to teaching and to the related activities of class preparation, grading, and consulting with younger students. Typical GTAs with a 12 to 15 hours per week workload receive from 800 to 1000 EUR per month and qualify for reduced tuition.
Financial aid recipients are expected to be full-time students, who register for (and complete) 30 credits per semester. In order to renew their financial aid students must maintain satisfactory academic progress toward the completion of their degree. Approval of a petition to the MSSE Board is required before dropping any course. A C grade or better in each course is required for maintaining a status of satisfactory academic progress.
Continuity of registration must also be maintained until all requirements for the degree have been completed, with the exception of summer terms and authorized sabbaticals. All graduate students are expected to complete 60 credits each academic year. The Registrar Office checks satisfactory academic progress each academic year.
If you wish to be considered for graduate financial assistance you must fill the relevant application form for each academic year of the

degree program following the procedure indicated in the Applications sections of this web site.
Potential applicants are also encouraged to seek financial support from outside sources. Attempts to do so will be viewed favourably by the admission committee. External fellowships and grants require direct application to the granting agency.

JAPAN

Kagoshima University

I. General Information and Contact Person:

Name of Institution/University: Kagoshima University

Name of Faculty/Department: Department of Physics and Astronomy
Name of Contact Person: Prof. Masanori Nishio
Mailing Address: 1-21-35, Korimoto
Kagoshima, 890-0065
Japan
Telephone: +81-99-285-6047
Fax: +81-99-285-8088
E-mail Address: mxnishio@sci.kagoshima-u.ac.jp
Website: http://www.sci.kagoshima-u.ac.jp/jhsrc/departments-e_dir/gakka-buturi-e.html

II. Programme Details:

Name of Programme/Activity: Development of Cubesats for Atmospheric Water Vapour Observations
Type of Programme Undergraduate Degree Level
Graduate Degree Level
Language(s) of Instruction: English, Japanese
Number of Faculty Members in the Programme: 2(+3)
Number of Students in the Programme: 5(+4)
Duration of the Programme: 5 years

Cost of the Programme: About $100,000

Website of the Programme: http://kasat.jp/

III. International Students:

Is the programme open to international students? Yes ☒ No ☐
Are there scholarships or is there any other type of support for international students? International Academic Exchange under Academic Exchange Agreements between Kagoshima University and Counterpart institutions.

Kyushu University

I. General Information and Contact Person:

Name of Institution/University: Kyushu University

Name of Faculty/Department: Department of Aeronautics and Astronautics
Name of Contact Person: Dr. Hiroshi HIRAYAMA
Mailing Address: 744 Motooka, Nishi-ku, Fukuoka, 819-0395
Telephone: +81-92-802-3048
Fax: +81-92-802-3001
E-mail Address: hira@aero.kyushu-u.ac.jp
Website: http://www.aero.kyushu-u.ac.jp/

II. Programme Details:

Name of Programme/Activity: Small satellite development / assessment of orbital debris
Type of Programme Undergraduate Degree Level
Graduate Degree Level
PhD/Postdoc Level
Language(s) of Instruction: Japanese
Number of Faculty Members in the Programme: 2
Number of Students in the Programme: 15
Duration of the Programme: Unlimited
Cost of the Programme: **Tuition** 29,700 yen/month.
Living costs Approximately 100,000 yen/month.
Website of the Programme: http://ssdl.aero.kyushu-u.ac.jp/

III. International Students:

Is the programme open to international students? Yes ☒ No ☐
Admission Requirements: Admission is required to be a regular course foreign student. Otherwise a special research student without admission is acceptable.
Are there scholarships or is there any other type of support for international students? No

PORTUGAL

Instituto Superior Técnico, Technical University of Lisbon

I. General Information and Contact Person:

Name of Institution/University: Instituto Superior Técnico, Universidade Técnica de Lisboa

Name of Faculty/Department: Mechanical Engineering Department
Name of Contact Person: Prof. Paulo Gil, Assistant professor
Mailing Address: Departamento de Engenharia Mecanica
Instituto Superior Técnico
Av. Rovisco Pais, 1049-001 Lisboa
Portugal
Telephone: +351218417196
E-mail Address: p.gil@dem.ist.utl.pt

II. Programme Details:

Name of Programme/Activity: Integrated Master in Aerospace Engineering/ PhD in Aerospace Engineering
Courses:
Orbital Mechanics - Undergrad
Space Mission Design) - Grad
Space Dynamics - PhD

Type of Programme Undergraduate Degree Level
Graduate Degree Level
PhD/Postdoc Level

Language(s) of Instruction: Portuguese (Undergrad)
English (Grad, PhD)

Number of Faculty Members in the Programme: 2

Number of Students in the Programme: 20

Duration of the Programme: Undergraduate 3 years, Graduate 5 years, PhD 3 years

Cost of the Programme:

Tuition	500 EUR/semester
Textbooks	500 EUR/semester
Living costs	Minimum wage: 500 EUR/month Accommodation outside faculty: 2 room apartment ~700 EUR/month

Website of the Programme: http://www.ist.utl.pt/en/education/

III. International Students:

Is the programme open to international students? **Yes** ☒ **No** ☐

Admission Requirements: ERASMUS programme

Are there scholarships or is there any other type of support for international students? No, apart from the ERASMUS programme

University of Beira Interior

I. General Information and Contact Person:

Name of Institution/University:	Universidade da Beira Interior / University of Beira Interior
Name of Faculty/Department:	Faculdade de Engenharia / Faculty of Engineering Departamento de Ciências Aeroespaciais / Department of Aerospace Sciences
Name of Contact Person:	**Undergraduate level:** José Miguel ALMEIDA DA SILVA, Assistant Professor **Graduate level:** André Resende RODRIGUES DA SILVA, Assistant Professor **PhD/Postdoc level:** Jorge Manuel MARTINS BARATA, Full Professor
Mailing Address:	Universidade da Beira Interior Faculdade de Engenharia Departamento de Ciências Aeroespaciais Calçada Fonte do Lameiro 6201-001 Covilhã – Portugal
Telephone and Fax:	José Miguel Almeida da Silva jmas@ubi.pt Tel. (+351) 275 329 701, Fax. (+351) 275 329 768 André Resende Rodrigues da Silva andre@ubi.pt Tel. (+351) 275 329 701, Fax. (+351) 275 329 768 Jorge Manuel Martins Barata jbarata@ubi.pt Tel. (+351) 275 329 733, Fax. (+351) 275 329 768
Website:	http://www.ubi.pt http://www.dca.ubi.pt

II. Programme Details:

Name of Programme/Activity:	Engenharia Aeronáutica / Aeronautical Engineering	
Type of Programme	Undergraduate Degree Level	1st cycle of studies leading to Licentiate degree
	Graduate Degree Level	2nd cycle of studies leading to Master's degree
	PhD/Postdoc Level	3rd cycle of studies leading to a Doctoral degree
Language(s) of Instruction:	Portuguese (tutorial support in English is available for international and/or exchange students)	
Number of Faculty Members in the Programme:	Undergraduate: 36 (2009/2010) Graduate: 15 (2009/2010) PhD: 9 (2009/2010)	
Number of Students in the Programme:	Undergraduate: 151 (2009/2010) Graduate: 46 (2009/2010) PhD: 3 (2009/2010)	
Duration of the Programme:	Undergraduate: 6 semesters/ 3 years Graduate: 4 semesters/ 2 years PhD: 6 semesters/ 3 years	

Cost of the Programme:	**Tuition**	Undergraduate: 996.85 Euro per annum (2009/2010), reviewed annually. Graduate: 996.85 Euro per annum, (2009/2010) reviewed annually) PhD: 2000 Euro per annum, (2009/2010) reviewed annually
	Textbooks	variable
	Living costs	variable
	Other costs	variable
Website of the Programme:	**www.ubi.pt**, www.dca.ubi.pt	
Any Other Relevant Programme Information:	There are two R&D units within the scientific area of this degree: - Centre of Aerospace Science and Technology (CAST): http://www.aerospace.ubi.pt/ - AeroG - Aeronautics and Astronautics Research Centre: http://aeronautics.ubi.pt/ UBI participated in the portuguese consortium PoSAT between 1992 and 1995 to develop the 50kg micro-sattelite PoSAT-1 and had a ground station implemented to follow the sattelite after its launch in 1993.	

III. International Students:

Is the programme open to international students?	Yes ☒ No ☐
Admission Requirements:	**Undergraduate:** Have successfully completed the Portuguese 12th year of schooling, or equivalent; Have sat for the national examinations of secondary school in either Mathematics + Physics and Chemistry, or Mathematics + Descriptive Geometry **Graduate:** Have successfully completed an undergraduate programme (1st cycle), or equivalent; **PhD:** Have successfully completed a postgraduate (2nd cycle) master's degree, or equivalent.
Are there scholarships or is there any other type of support for international students?	**Undergraduate and graduate:** The Portuguese government grants scholarships for students from households with low income. Further information is available at: http://www.dges.mctes.pt/DGES/en **PhD:** The University of Beira Interior does not grant scholarships for PhD students. Many Portuguese as well as international public and private institutions and bodies award scholarships based on the merit of the applicants. The Portuguese Foundation of Science and Technology under the Ministry of Science, Technology and Higher Education in very active in that respect: http://alfa.fct.mctes.pt/index.phtml.en

REPUBLIC OF KOREA

Korea Advanced Institute of Science and Technology (KAIST)

I. General Information and Contact Person:

Name of Institution/University: KAIST (Korea Advanced Institute of Science and Technology)

Name of Faculty/Department: Division of Aerospace Engineering
Name of Contact Person: Prof. Seung-Hyun Kong
Mailing Address: Bldg #N7-2, Rm #4308
335 Gwahangno, Yuseong-Gu
Telephone: +82-42-350-3726
Fax: +82-42-350-3710
E-mail Address: skong@kaist.ac.kr
Website: http://www.ae.kaist.ac.kr

II. Programme Details:

Name of Programme/Activity: Division of Aerospace Engineering
Type of Programme Undergraduate Degree Level
Graduate Degree Level
PhD/Postdoc Level
Language(s) of Instruction: English
Number of Faculty Members in the Programme: 16
Number of Students in the Programme: 200
Duration of the Programme: 4yrs/BS, 2yrs/MS, 4yrs/Ph.D
Cost of the Programme: **Tuition** 4,308,000 KW (about 4,000 USD) per semester
Living costs 300,000 KW per month
Website of the Programme: http://www.ae.kaist.ac.kr

III. International Students:

Is the programme open to international students? Yes ☒ No ☐
Admission Requirements: GRE, TOEFL
Are there scholarships or is there any other type of support for international students? Yes, the scholarship covers tuition and basic living costs.

Satrec Initiative

I. General Information and Contact Person:

Name of Institution/University: Satrec Initiative

Name of Contact Person: Hyon Sock Chang, Ph.D, VP, Program Development Division
Mailing Address: 461-26 Jeonmin-dong, Yuseong-gu, Daejeon, 305-811, Korea
Telephone: +82-42-365-7506
Fax: +82-42-365-7559
E-mail Address: hschang@satreci.com
Website: http://www.satreci.com

II. Programme Details:

Name of Programme/Activity: Intensive short course on satellite engineering
Type of Programme Undergraduate Degree Level
Graduate Degree Level
Language(s) of Instruction: English
Number of Faculty Members in the Programme: 8
Number of Students in the Programme: 10-20
Duration of the Programme: 5 days
Cost of the Programme:

Tuition	US$ 3,000 / person
Textbooks	Included
Living costs	US$ 600 / 5 days
Other costs	US$ 200 / 5 days

Website of the Programme: http://www.satreci.com/eng/service/service_01.htm
Any Other Relevant Programme Information: Satrec Initiative has provided satellite engineering training courses to 9 international and national institutions.
The trainees would acquire knowledge in satellite engineering including:
Orbit Mechanics, Space Environment, Launchers, Spacecraft Bus Payloads, Satellite Operation, System Engineering

III. International Students:

Is the programme open to international students? Yes ☒ No ☐
Admission Requirements: Undergraduate degree level
Intermediate level in English
Are there scholarships or is there any other type of support for international students? No

RUSSIAN FEDERATION

The Moscow State Technical University of Civil Aviation

I. General Information and Contact Person:

Name of Institution/University:	The Moscow State Technical University of Civil Aviation
Name of Faculty/Department:	Faculty of Aviation Systems and Complexes
Name of Contact Person:	Nechaev Evgeny, Vice Rector
Mailing Address:	20, Kronshtadtsky blvd, Moscow, 125993
Telephone:	+ 7 (495) 458 75-76
Fax:	+ 7 (495) 458 75-76
E-mail Address:	enechaev@mstuca.ru
Website:	http://www.mstuca.ru

II. Programme Details:

Name of Programme/Activity:	Maintenance of transport radio equipment
Type of Programme	PhD/Postdoc Level
Language(s) of Instruction:	Russian
Number of Faculty Members in the Programme:	12
Number of Students in the Programme:	15
Duration of the Programme:	3 Years
Cost of the Programme:	**Tuition** 128 000 rub. **Textbooks** 2 000 rub. **Living costs** 30 000 rub.
Website of the Programme:	http://www.mstuca.ru

III. International Students:

Is the programme open to international students?	Yes ☒ No ☐
Admission Requirements:	According to order № 814 of Government of Russian Federation
Are there scholarships or is there any other type of support for international students?	No

SOUTH AFRICA

University of Stellenbosch

I. General Information and Contact Person:

Name of Institution/University:	University of Stellenbosch
Name of Faculty/Department:	Department of Electrical and Electronic Engineering
Name of Contact Person:	Prof WH Steyn, Professor in Satellite and Control Systems
Mailing Address:	Private Bag XI, Matieland 7602
Telephone:	+27-21-808-4926
Fax:	+27-21-808-4981
E-mail Address:	whsteyn@sun.ac.za
Website:	http://www.sun.ac.za

II. Programme Details:

Name of Programme/Activity:	Masters/PhD Degree in Satellite Engineering
Type of Programme	Graduate Degree Level PhD/Postdoc Level
Language(s) of Instruction:	English
Number of Faculty Members in the Programme:	4
Number of Students in the Programme:	12
Duration of the Programme:	2 year Masters, 3 year PhD
Cost of the Programme:	**Tuition** US$ 2000/year **Textbooks** US$ 200/year **Living costs** US$ 4000/year
Website of the Programme:	http://esl.ee.sun.ac.za/index.php/Main/HomePage
Any Other Relevant Programme Information:	The ESL lab was the birthplace of Africa's first indigenous earth orbiting satellite SUNSAT-1. Many of the subsystems flown successfully on the next South African satellite SumbandilaSAT were also initially developed in the ESL. The satellite lab also contains the commissioning ground station of SumbandilaSAT. Currently students are involved in various Cubesat activities with the Cape Town Peninsula University.

III. International Students:

Is the programme open to international students?	Yes ☒ No ☐
Admission Requirements:	Apply through International Office of the University of Stellenbosch
Are there scholarships or is there any other type of support for international students?	No

SPAIN

Universidad Politecnica de Madrid

I. General Information and Contact Person:

Name of Institution/University:	Universidad Politecnica de Madrid
Name of Faculty/Department:	Escuela Tecnica Superior de Ingenieros Aeronauticos
Name of Contact Person:	Prof. Jose L. Sagredo, Deputy Director for External Relations
Mailing Address:	Subdirector Relaciones Exteriores, ETSIA, Plaza cardenal Cisneros, 3 28040 Madrid, Spain
Telephone:	+34 91 3366356
E-mail Address:	subdirector.re.aeronauticos@upm.es

II. Programme Details:

Name of Programme/Activity:	Ingeniero Aeronautico (300 ECTS) Master en IngenierÃ-a Aeroespacial (120 ECTS) Doctor Ingeniero Aeronautico
Type of Programme	Undergraduate Degree Level Graduate Degree Level PhD/Postdoc Level
Language(s) of Instruction:	Spanish
Duration of the Programme:	5 years
Cost of the Programme:	**Tuition** 15 eur per ECTS
Website of the Programme:	http://www.aero.upm.es/

III. International Students:

Is the programme open to international students?	Yes ☒ No ☐
Are there scholarships or is there any other type of support for international students?	No

THAILAND

King Mongkut's University of Technology North Bangkok

I. General Information and Contact Person:

Name of Institution/University:	King Mongkut's University of Technology North Bangkok
Name of Faculty/Department:	Department of Mechanical and Aerospace Engineering
Name of Contact Person:	Chanyut Kolitawong
Mailing Address:	1518 Piboolsongkram Bangsue Bangkok 10800 Thailand
Telephone:	+66 (0)2 913 2500
Fax:	+66(0) 2 586 9541
E-mail Address:	ckw@kmutnb.ac.th
Website:	http://www.me.kmutnb.ac.th

II. Programme Details:

Name of Programme/Activity:	Aerospace Engineering	
Type of Programme	Undergraduate Degree Level	B. Eng.
	Graduate Degree Level	M. Eng
Language(s) of Instruction:	Thai	
Number of Faculty Members in the Programme:	30	
Number of Students in the Programme:	100	
Duration of the Programme:	4 years for undergraduate level and 2 years for master degree.	
Website of the Programme:	http://www.me.kmutnb.ac.th	

III. International Students:

Is the programme open to international students? **Yes** ☐ **No** ☒

UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

University of Glasgow

I. General Information and Contact Person:

Name of Institution/University: University of Glasgow

Name of Faculty/Department: Engineering
Contact Person: Faculty Secretary
Mailing Address: Engineering Faculty Office
James Watt Building (South)
University of Glasgow
Glasgow G12 8QQ,
Scotland
Telephone: +44(0)141 330 2032
Fax: +44(0)141 330 4885
E-mail Address: gradschool@eng.gla.ac.uk
Website: http://www.glasgow.ac.uk/engineering/gradschool

II. Programme Details:

Name of Programme/Activity: Space Mission Analysis & Design
Type of Programme Graduate Degree Level MSc
Language(s) of Instruction: English
Number of Faculty Members in the Programme: 3
Number of Students in the Programme: 8
Duration of the Programme: 1 year
Cost of the Programme: **Tuition** http://www.gla.ac.uk/services/registry/fees/
Living costs http://www.gla.ac.uk/services/registry/students/
Website of the Programme: http://www.gla.ac.uk/postgraduate/taught/engineering/spacemissionanalysisdesign/
Any Other Relevant Programme Information: This MSc programme is designed to prepare graduates from engineering, mathematics and the physical sciences for careers in the space industry, space agencies and space-related research institutes.
The MSc in Space Mission Analysis and Design is strongly supported by UK and EU industry. Guest lecturers from world leading space companies and agencies deliver a series of professional development seminars.
The degree programme is particularly suitable for graduates who work, or intend to work, in the space industry, space agencies or space research institutes, both in the UK and abroad.

III. International Students:

Is the programme open to international students?	Yes ☒ No ☐
Admission Requirements:	http://www.gla.ac.uk/postgraduate/taught/engineering/spacemissionanalysisdesign/
Are there scholarships or is there any other type of support for international students?	http://www.eng.gla.ac.uk/faculties/engineering/gradschool/prospectivestudents/scholarshipsandfees/

UNITED STATES OF AMERICA

Boston University

I. General Information and Contact Person:

Name of Institution/University:	Boston University
Name of Faculty/Department:	Mechanical Engineering Department
Name of Contact Person:	Donald Wroblewski, Associate Professor, Associate Chair Undergraduate Aerospace Studies
Mailing Address:	Mechanical Engineering Dept. Boston University 110 Cummington St. Boston, MA 02215 United States of America
Telephone:	+1 617-353-9739
Fax:	+1 627-353-5866
E-mail Address:	dew11@bu.edu
Website:	http://www.bu.edu/me/

II. Programme Details:

Name of Programme/Activity:	Mechanical Engineering with Concentration in Aerospace Engineering
Type of Programme	Undergraduate Degree Level BS
Language(s) of Instruction:	English
Number of Faculty Members in the Programme:	45 for entire department servicing 2 other programs in addition to Aerospace.
Number of Students in the Programme:	121 in Aerospace; 432 total for department
Duration of the Programme:	4 years
Cost of the Programme:	**Tuition** http://www.bu.edu/reg/registration/t+freg.html
Website of the Programme:	http://www.bu.edu/me/
Any Other Relevant Programme Information:	Students from this program work on small satellite design through the Center for Space Physics at Boston University, an interdisciplinary research center that includes faculty and students from engineering, physics, and astronomy. http://www.bu.edu/dbin/csp/

III. International Students:

Is the programme open to international students?	Yes ☒ No ☐
Admission Requirements:	Accepted students typically have an A- average in the most challenging and demanding classes their high school offers. The middle 50% score between an 1880-2100 on the SAT and a 27-31 on the ACT. Students are also required to take 2 SAT II subjects tests. Extracurriculars, recommendations and essays are also required to determine students who will create a unique and diverse community at BU. International students are also required to provide proof of English proficiency as well as a Financial Statement showing the ability to pay yearly tuition.

Are there scholarships or is there any other type of support for international students?	While limited, there are some academic scholarships available to international students, ranging from half to full tuition. A small population of students will receive these, however, and there is no need based aid available for international students.

California Polytechnic State University

I. General Information and Contact Person:

Name of Institution/University:	California Polytechnic State University
Name of Contact Person:	Dr. Jordi Puig-Suari, Aerospace Professor
Mailing Address:	Cal Poly Aerospace Department 1 Grand Ave. San Luis Obispo, CA 93407 United States of America
Telephone:	+1 805 756-6479
E-mail Address:	jpuigsua@calpoly.edu
Website:	http://www.cubesat.org

II. Programme Details:

Name of Programme/Activity:	CubeSat and PolySat
Type of Programme	Undergraduate Degree Level Graduate Degree Level
Language(s) of Instruction:	English
Number of Faculty Members in the Programme:	1
Number of Students in the Programme:	30
Duration of the Programme:	Ideally students are involved around 2 - 4 years. Program has been around since 1999.
Cost of the Programme:	No cost to the students.
Website of the Programme:	www.cubesat.org http://polysat.calpoly.edu/
Any Other Relevant Programme Information:	These two programs are not part of the core curriculum. All student positions require interviews prior to selection. All positions are volunteer positions. CUBESAT: Primarily responsible for maintaining the CubeSat standard, integrating satellites into PPODS, and finding launch opportunities. POLYSAT: Cal Poly's satellite development team. To date, PolySat has integrated 5 satellites on three launch vehicles. Three of those satellites (CP3, CP4 and CP6) successfully reached orbit and remain operation. CP1 and CP2 were lost in a DNEPR rocket failure. We're currently developing CP5, CP7 and LightSail. CP5 is testing a de-orbiting deployable mechanism. CP7 is testing vibration dampeners is zero gravity. LightSail is a solar sail demonstration with The Planetary Society. Our facilities include a class 10k clean room, work stations, electronics benches with typical equipment, vibrations table, thermal-vacuum chamber, and a secure server housing our websites, subversion file system and various other databases.

III. International Students:

Is the programme open to international students?	Yes ☐ No ☒
Admission Requirements:	To conform with ITAR requirements, all students working in the lab must either be US Citizens, or carry a Green Card.
Are there scholarships or is there any other type of support for international students?	No

Georgia Institute of Technology

I. General Information and Contact Person:

Name of Institution/University:	Georgia Institute of Technology
Name of Faculty/Department:	Aerospace Engineering
Name of Contact Person:	Cindy Pendley, Program coordinator
Mailing Address:	270 Ferst Drive Atlanta GA 30332-0150 United States of America
Telephone:	+1 404-385-3819
E-mail Address:	cindy.pendley@ae.gatech.edu
Website:	http://www.ae.gatech.edu

II. Programme Details:

Name of Programme/Activity:	Space Systems Engineering
Type of Programme	Undergraduate Degree Level Graduate Degree Level PhD/Postdoc Level
Language(s) of Instruction:	English
Number of Faculty Members in the Programme:	10
Number of Students in the Programme:	82
Duration of the Programme:	B.S. 4 years; M.S. 1.5 years, PH.D. varies
Cost of the Programme:	**Tuition** $25,500 (non-resident of Georgia) **Textbooks** $1000/ year **Living costs** $5,000/ year
Website of the Programme:	http://www.ssdl.gatech.edu
Any Other Relevant Programme Information:	The Center for Space Systems was founded in 2008 with the goal of creating a world class research and educational organization dedicated to the design, development and operation of advanced space systems. A ground tracking station is under construction and will be available to support research and educational activities Fall10. Currently the Center is building a nanosat to demonstrate autonomous detection of a thermal target of interest via satellite remote sensing which is part of AFOSR's University Nanosat Competition. Additional information available at http://www.css.gatech.edu.

III. International Students:

Is the programme open to international students?	Yes ☒ No ☐
Admission Requirements:	Graduate Level: B.S. in any Engineering, GPA >3.5
Are there scholarships or is there any other type of support for international students?	Very limited number of graduate research assistantships are available.

Massachusetts Institute of Technology

I. General Information and Contact Person:

Name of Institution/University:	Massachusetts Institute of Technology
Name of Faculty/Department:	Department of Aeronautics and Astronautics
Name of Contact Person:	Prof. Ian Waitz, Department Head
Mailing Address:	77 Massachusetts AvenueRoom 33-208 Cambridge, MA 02139 United States of America
Telephone:	+1 617-253-0043
Fax:	+1 617-253-0823
E-mail Address:	bethamar@mit.edu, Ms. Beth MAROIS, Graduate Program Administrator
Website:	http://web.mit.edu/aeroastro/index.html

II. Programme Details:

Name of Programme/Activity:	Aeronautics and Astronautics
Type of Programme	Undergraduate Degree Level Graduate Degree Level PhD/Postdoc Level Other: S.B., SM, PhD/ScD/Postdoc
Language(s) of Instruction:	English
Number of Faculty Members in the Programme:	45
Number of Students in the Programme:	SB = 180; SM/PhD/ScD = 230
Duration of the Programme:	SB = 4 years; SM = 2 years; PhD/ScD = 3-4 years
Cost of the Programme:	**Tuition** $39 000 **Textbooks** $3 000 **Living costs** $11 000
Website of the Programme:	http://web.mit.edu/aeroastro/index.html
Any Other Relevant Programme Information:	SPHERES -- The SPHERES laboratory on the International Space Station (ISS) was developed by the MIT Space Systems Laboratory, the AA Department's capstone class and Aurora Flight Sciences to test advanced command and control technology for close proximity satellite operations. Three nano-satellites have been flying inside the ISS since May

2006 testing estimation, control, fault detection and adaptation in support for formation flight, docking, inspection, cluster aggregation and robotic assembly. SPHERES became an ISS National Laboratory in June 2010.
SEA -- The Space Engineering Academy (SEA) is a satellite program in the MIT AA Department and Lincoln Laboratory that gives ~60 students per year hands-on experience in designing, building, fabricating, testing and operating space vehicles.
Two satellites are currently under development through AFOSR, NASA, and AA Department sponsorship.
SEA is a graduate research program that coordinates with the undergraduate space systems product development capstone sequence (16.83x) and the graduate satellite engineering class (16.851)

III. International Students:

Is the programme open to international students?	Yes ☒ No ☐
Admission Requirements:	Same as for students from the U.S., aside from TOEFL/IELTS
Are there scholarships or is there any other type of support for international students?	Graduate level support is available in the form of Research Assistantships, Teaching Assistantship, and Fellowships.

Mississippi State University

I. General Information and Contact Person:

Name of Institution/University:	Mississippi State University
Name of Faculty/Department:	Department of Aerospace Engineering
Name of Contact Person:	Pasquale "PC" Cinnella, Interim Department Head
Mailing Address:	P.O. Box A 330 Walker Engineering Building Mississippi State, MS 39762 United States of America
Telephone:	+1(662)325-3623
Fax:	+1(662)325-7730
E-mail Address:	dept-head@ae.msstate.edu
Website:	http://www.ae.msstate.edu

II. Programme Details:

Name of Programme/Activity:	Aerospace Engineering	
Type of Programme	Undergraduate Degree Level	Bachelor of Science in Aerospace Engineering, concentration in Astronautics
	Graduate Degree Level	Master of Science in Aerospace Engineering
	PhD/Postdoc Level	PhD in Engineering, concentration in Aerospace Engineering

	Other:	Bachelor of Science in Aerospace Engineering, concentration in Aeronautics
Language(s) of Instruction:	English	
Number of Faculty Members in the Programme:	15 full-time, 2 part-time	
Number of Students in the Programme:	Approximately 200 undergraduate, 50 graduate students	
Duration of the Programme:	B.S. 4 years, M.S. approx. 2 years, PhD approx. 2 years after M.S. or 3 years after B.S.	
Cost of the Programme:	**Tuition**	www.sfa.msstate.edu/cost/ (undergraduate program) www.grad.msstate.edu/prospective/tuition/ (graduate program)
	Textbooks	www.sfa.msstate.edu/cost/
	Living costs	www.sfa.msstate.edu/cost/
	Other costs	www.sfa.msstate.edu/cost/ (undergraduate program) www.grad.msstate.edu/prospective/tuition/ (graduate program)
Website of the Programme:	http://www.ae.msstate.edu	

III. International Students:

Is the programme open to international students?	Yes ☒ No ☐
Admission Requirements:	Applicants whose native language is not English: TOEFL scores 79 or higher (Internet-based examination). Graduate applicants: GRE general examination scores, good undergraduate records. For more details and information please go to http://www.admissions.msstate.edu and http://www.grad.msstate.edu
Are there scholarships or is there any other type of support for international students?	Limited departmental scholarships available for undergraduate students. For graduate students, several competitive Graduate Research Assistantships (GRAs) available (full waiver of tuition fees, plus a stipend ranging from $1,300 to $1,600/month). All graduate applicants are automatically considered for GRAs.

Naval Postgraduate School

I. General Information and Contact Person:

Name of Institution/University:	Naval Postgraduate School
Name of Faculty/Department:	Mechanical and Aerospace Engineering
Name of Contact Person:	Knox Millsaps, Professor and Chairman
Mailing Address:	Watkins Hall 700 Dyer Road Monterey, CA 93943-5100 United States of America
Telephone:	+1 (831) 656-3382
Fax:	+1 (831) 656-2238
E-mail Address:	millsaps@nps.edu
Website:	http://www.nps.edu/mae

II. Programme Details:

Name of Programme/Activity:	Aerospace (Astronautical and Aeronautical)
Type of Programme	Graduate Degree Level PhD/Postdoc Level Other: Engineering Degree
Language(s) of Instruction:	English
Number of Faculty Members in the Programme:	12
Number of Students in the Programme:	24
Duration of the Programme:	1-2 for MS, 2.5 years for Astro Engineer, 3-4 years for Ph.D.
Cost of the Programme:	**Tuition** 5 rates (24,000 to 58,000/year) **Textbooks** $1,000 **Living costs** $30,000
Website of the Programme:	www.nps.edu/mae
Any Other Relevant Programme Information:	Students must be sponsored by their government, typically by ministry of Defense. We have 17% international students from 58 different countries. NPS has had 38 astronauts, and have built and launched two satellites, and is one of the most active universities in the world in satellite design. Currently involved in several cube-sat and tiny-sat design and build programs.

III. International Students:

Is the programme open to international students?	Yes ☒ No ☐
Admission Requirements:	Must have agreement between govenments. High GPA, ToFEL
Are there scholarships or is there any other type of support for international students?	Generally not. Government usually use IMET (from U.S. State Department) or FMS funds of their own.

University of Central Florida

I. General Information and Contact Person:

Name of Institution/University:	University of Central Florida
Name of Faculty/Department:	MMAE
Name of Contact Person:	Dr. Yunjun XU, Assist. Prof.
Mailing Address:	4000 Central Florida Blvd. Eng. 1 Room 318 Orlando FL, 32816 United States of America
Telephone:	+1 407-823-1745
E-mail Address:	yunjunxu@mail.ucf.edu
Website:	http://mmae.ucf.edu

II. Programme Details:

Name of Programme/Activity:	Mechanical, Materials and Aerospace Engineering
Type of Programme	Undergraduate Degree Level Graduate Degree Level
Language(s) of Instruction:	English
Number of Faculty Members in the Programme:	8
Number of Students in the Programme:	500
Website of the Programme:	http://mmae.ucf.edu

III. International Students:

Is the programme open to international students?	Yes ☒ No ☐
Are there scholarships or is there any other type of support for international students?	Yes, research assistant, teaching assistant, and fellowship.

Stevens Institute of Technology

I. General Information and Contact Person:

Name of Institution/University:	Stevens Institute of Technology
Name of Faculty/Department:	School of Systems and Enterprises
Name of Contact Person:	Dr. Wiley Larson, Assistant Dean and Director, Space Systems Engineering Program
Mailing Address:	14 Thayer Rd. Colorado Springs, CO 80906 United States of America
Telephone:	719 582-0111
E-mail Address:	wiley.larson@stevens.edu
Website:	http://www.stevens.edu/space

II. Programme Details:

Name of Programme/Activity:	Stevens Space Systems Engineering Program	
	Graduate Degree Level	Masters in Systems Engineering
	Other	Graduate Certificate in Space Systems Engineering
Language(s) of Instruction:	English	
Number of Faculty Members in the Programme:	Ratio 7:1	
Number of Students in the Programme:	3,225	
Duration of the Programme:	Graduate Certificate - 1 year/Masters - 2 years	
Cost of the Programme:	**Tuition**	Approximately $3,500 per on-site course which includes tuition & books. $3,700 per on-line course which covers tuition and

		registration fees. Books must be purchased by participant.
	Living costs	Travel and lodging costs are at the participants expense
Website of the Programme:	http://www.stevens.edu/space	

III. International Students:

Is the programme open to international students?	Yes ☒ No ☐
Admission Requirements:	Visit the Stevens International Student Services website at http://www.stevens.edu/iss/ for student admissions requirements
Are there scholarships or is there any other type of support for international students?	Only provided by external organizations: http://sse.stevens.edu/academics/awards-and-scholarships/

University of Cincinnati

I. General Information and Contact Person:

Name of Institution/University:	University of Cincinnati
Name of Faculty/Department:	Aerospace Engineering and Applied Mechanics
Name of Contact Person:	Awatef Hamed, Director, School of Aerospace Systems
E-mail Address:	hameda@ucmail.uc.edu
Website:	http://www.ase.uc.edu

II. Programme Details:

Name of Programme/Activity:	Aerospace Engineering	
Type of Programme	Undergraduate Degree Level Graduate Degree Level PhD/Postdoc Level	
Language(s) of Instruction:	English	
Number of Faculty Members in the Programme:	19	
Number of Students in the Programme:	300	
Duration of the Programme:	5 years	
Cost of the Programme:	**Tuition**	$24,588
	Textbooks	$1,308
	Living costs	$10,767
	Other costs	4,500
Website of the Programme:	http://www.ase.uc.edu	
Any Other Relevant Programme Information:	The Aerospace Engineering program at the University of Cincinnati was established in 1929 and is the second oldest in the US. It is home to the $27.5 M funded Center for the Intelligent Propulsion and Advanced Life Management with 4 AIAA Fellows, 3 ASME fellows. The Senior Design teams have placed 1st in the 2009 "Battle of the Rockets" and in 2004 in the "AIAA Nano Satellite Competition".	

III. International Students:

Is the programme open to international students?	Yes ☒ No ☐
Admission Requirements:	Academic standing and reference letters
Are there scholarships or is there any other type of support for international students?	Graduate research and teaching assistantships

University of Illinois at Urbana-Champaign

I. General Information and Contact Person:

Name of Institution/University:	University of Illinois at Urbana-Champaign
Name of Faculty/Department:	Department of Aerospace Engineering
Name of Contact Person:	Ms. Staci Tankersley, Coordinator of Academic Program Ms. Barbara Kirts Undergraduate Student Affairs Coordinator
Mailing Address:	104 S. Wright Street Urbana, IL 61801 United States of America
Telephone:	+1 217-333-3674 1-217-333-0087
E-mail Address:	aerospace@illinois.edu tank@illinois.edu
Website:	http://www.ae.illinois.edu

II. Programme Details:

Name of Programme/Activity:	Aerospace Engineering graduate program	
Type of Programme	Undergraduate Degree Level Graduate degree Level PhD/Postdoc	M.S.
Language(s) of Instruction:	English	
Number of Faculty Members in the Programme:	20	
Number of Students in the Programme:	400 students, 125 graduate	
Duration of the Programme:	Undergraduate 4 years, M.S. 2 years; PhD 3 years	
Cost of the Programme:	**Tuition**	http://admissions.illinois.edu/ http://admissions.illinois.edu/cost/tuition.html Graduate: $16,618 http://registrar.illinois.edu/financial/grad_expenses.html
	Textbooks	Varies, $300-$500 per semester
	Living costs	http://admissions.illinois.edu/campuslife/housing.html
Website of the Programme:	http://www.ae.illinois.edu	

III. International Students:

Is the programme open to international students?	Yes ☒ No ☐
Admission Requirements:	Minimum GPA 3.0; GRE required; minimum TOEFL 103 http://www.ae.illinois.edu/academics/ http://admissions.illinois.edu/apply/requirements.html
Are there scholarships or is there any other type of support for international students?	Dept. fellowships $20K for academic year (9 mos.) awarded to top 10 applicants in Aerospace Engineering for each upcoming fall semester.

University of Maryland at College Park

I. General Information and Contact Person:

Name of Institution/University:	A. James Clark School of Engineering University of Maryland at College Park
Name of Faculty/Department:	Department of Aerospace Engineering
Name of Contact Person:	Dr. Mark J. Lewis
Mailing Address:	3179 Glenn L. Martin Hall College Park, Maryland 20742 United States of America
Telephone:	+1 301 405 2376
Fax:	+1 301 314 9001
E-mail Address:	enaegrad@UMD.EDU
Website:	http://www.aerospace.umd.edu

II. Programme Details:

Name of Programme/Activity:	Aerospace Engineering
Type of Programme	Undergraduate Degree Level Graduate Degree Level PhD/Postdoc Level
Language(s) of Instruction:	English
Number of Faculty Members in the Programme:	26
Number of Students in the Programme:	~400 UG ~140 GR
Duration of the Programme:	4 years UG, 2 yrs MS, 3 years PhD
Cost of the Programme:	**Tuition** $23,990 **Textbooks** ~$1,025 **Living costs** ~$9,375 **Other costs** ~$3,024
Website of the Programme:	http://www.enae.umd.edu
Any Other Relevant Programme Information:	Extensive program in space systems engineering, hypersonic flight, controls, composite materials, UAV's, and propulsion.

III. International Students:

Is the programme open to international students?	Yes ☒ No ☐
Admission Requirements:	The following information is considered: the student's previous academic performance, the rigor of the previous program, SAT I and/or ACT scores (UG level), class rank (if available), essay, extracurricular activities, school counselor and teacher recommendations and responses to short answer questions. Maryland residency, special talents and/or abilities, personal experiences and background and Maryland alumni/ae affiliation may be taken into consideration. As prescribed by the Board of Regents, the university expects all undergraduate applicants, at a minimum, to have completed by graduation the following course work: • Four years of English • Three years of mathematics, including algebra I or applied math I & II, formal logic or geometry, and algebra II. A fourth year of mathematics is strongly recommended. • Three years of history or social science • Three years of science in at least two different areas, with at least two lab experiences • Two years of a foreign language

University of Minnesota

I. General Information and Contact Person:

Name of Institution/University:	University of Minnesota
Name of Faculty/Department:	Aerospace Engineering and Mechanics
Name of Contact Person:	Prof. Gary Balas, Department Head and Professor
Mailing Address:	110 Union St SE Minneapolis MN 55455 United States of America
Telephone:	+1-612-625-8000
Fax:	+1-612-626-1558
E-mail Address:	balas@umn.edu
Website:	http://www.aem.umn.edu

II. Programme Details:

Name of Programme/Activity:	Nanosat design and construction; Aircraft design; Design, build, simulate, and test small uninhabited aerial vehicles
Type of Programme	Undergraduate Degree Level BS Graduate Degree Level MS PhD
Language(s) of Instruction:	English
Number of Faculty Members in the Programme:	16
Number of Students in the Programme:	420
Duration of the Programme:	4 year BS, 2 year MS, 4 year PhD degrees

Cost of the Programme:	**Tuition**	$11,000/ year
	Textbooks	$500/year
	Living costs	$800/month
	Other costs	www.aem.umn.edu
Website of the Programme:	http://www.aem.umn.edu	

III. International Students:

Is the programme open to international students?	Yes ☒ No ☐
Admission Requirements:	Same admission standard as native students
Are there scholarships or is there any other type of support for international students?	There is a limited about of scholarships at the undergraduate level. At the graduate level, most admitted students are offered teaching assistantships to support their education.

University of Texas at Arlington

I. General Information and Contact Person:

Name of Institution/University: University of Texas at Arlington

Name of Faculty/Department:	Department of Mechanical and Aerospace Engineering
Name of Contact Person:	Dr. Erian Armanios, Professor and Chair
Mailing Address:	Box 19018 Arlington TX 76019-0018 United States of America
Telephone:	+1 817-272-2603
Fax:	+1 817-272-5010
E-mail Address:	armanios@uta.edu
Website:	http://www.uta.edu/mae/

II. Programme Details:

Name of Programme/Activity:	Aerospace Engineering	
Type of Programme	Undergraduate Degree Level Graduate Degree Level PhD/Postdoc Level	
Language(s) of Instruction:	English	
Number of Faculty Members in the Programme:	33	
Number of Students in the Programme:	855 Undergraduate plus 350 Graduate Students	
Duration of the Programme:	BS - 4 years; MS - 2 years; PhD - 4 years	
Cost of the Programme:	**Tuition**	Resident - $8,186 (total for fall + spring); Non-Resident - $14,824 (total for fall + spring)
	Textbooks	$908 (total for fall + spring)
	Living costs	Dorm $5,904 (total for fall + spring) Meal Plan $6,330 (total for fall + spring)
	Other costs	Transportation $2,500 (total for fall + spring) Personal Misc $1,450 (total for fall + spring)
Website of the Programme:	http://www.uta.edu/mae/index.php?page=ae/ae_prog.php	

III. International Students:

Is the programme open to international students? Yes ☒ No ☐

Admission Requirements: http://www.uta.edu/gradcatalog/2010/aerospace_engineering.php

Unconditional admission into the Aerospace Engineering Program requires the submission of items 1 through 5 below for each degree program. To be unconditionally admitted, an applicant must at least meet conditions 1, 2, 3, and 4.

Master's Program

1. Minimum undergraduate GPA of 3.0 in the last 60 hours of undergraduate work in an appropriate engineering or science discipline. (For some international applicants where GPA calculations based on a 4.0 system is not performed, a minimum performance level of 65 percentile is expected. This minimum expectation may be higher for some countries, where less stringent grading criteria are used.) Performance in core aerospace engineering courses is of particular importance.
2. A GRE score of at least 400 (verbal) and 700 (quantitative). For those applicants whose GRE verbal score falls below 400, high TOEFL scores may be considered to offset the GRE verbal score.
3. Three favorable, veracious recommendations, via the university's recommendation form or via recommendation letter.
4. A Statement of Purpose detailing the applicant's background, education, professional goals, technical interests, and research interests.
5. An applicant whose native language is not English must submit TOEFL, TSE, or IELTS English proficiency test scores. Minimum performance levels expected for each test are: paper-based TOEFL score of 550 with a TWE of 3.5, computer-based TOEFL score of 223, TSE-A score of 45, IELTS score of 6.5, or TOEFL iBT total score of 84 with sectional scores that meet or exceed 22 for the writing section, 21 for the speaking section, 20 for the reading section, and 20 for the listening section.

Doctoral Program

1. Minimum GPA of 3.3 in the last 60 hours taken in the major field of study in an appropriate engineering or science discipline. (For some international applicants where GPA calculations based on a 4.0 system are not performed, a minimum performance level of 70 percentile is expected. This minimum expectation may be higher for some countries, where less stringent grading criteria are used.) Performance in core aerospace engineering courses is of particular importance.
2. A GRE score of at least 450 (verbal) and 750 (quantitative). For those applicants whose GRE verbal score falls below 450, high TOEFL scores may be considered to offset to the GRE verbal score.
3. Three favorable, veracious recommendations, via the university's recommendation form or via recommendation letter.
4. A Statement of Purpose detailing the applicant's background, education, professional goals, technical interests, and research interests.
5. An applicant whose native language is not English must submit TOEFL, TSE, or IELTS English proficiency test scores.

	Minimum performance levels expected for each test are: paper-based TOEFL score of 560 with a TWE of 3.5, computer-based TOEFL score of 230, TSE-A score of 45, IELTS score of 7.0, or TOEFL iBT total score of 89 with sectional scores that meet or exceed 23 for the writing section, 21 for the speaking section, 24 for the reading section, and 21 for the listening section.
Are there scholarships or is there any other type of support for international students?	Teaching and Research Assistantships; Graduate School Fellowships; Various Undergrad and Graduate Scholarships; Must apply, be qualified, and selected as specified by each program.

University of Washington

I. General Information and Contact Person:

Name of Institution/University:	University of Washington
Name of Faculty/Department:	Aeronautics & Astronautics
Name of Contact Person:	James C. Hermanson, Professor and Department Chair
Mailing Address:	211E Guggenheim Hall University of Washington Box 352400 Seattle, WA 98195-2400 United States of America
Telephone:	+1 206-616-2310
Fax:	+1 206-543-0217
E-mail Address:	jherm@aa.washington.edu
Website:	http://www.aa.washington.edu/

II. Programme Details:

Name of Programme/Activity:	Aeronautics & Astronautics	
Type of Programme	Undergraduate Degree Level	BSAA
	Graduate Degree Level	MSAA, MAE
	PhD/Postdoc Level	PhD
	Other:	Certificate programs
Language(s) of Instruction:	English	
Number of Faculty Members in the Programme:	19	
Number of Students in the Programme:	240 (for all degrees)	
Duration of the Programme:	4 years for BSAA, 2 years for MSAA or MAE, and 4-6 years for PhD	
Cost of the Programme:	**Tuition**	$24,367 (undergraduate), $24,067 (graduate
	Textbooks	$1,000-$1,200
	Living costs	$13,000 (single); $17,500 (married with children)
	Other costs	Travel to U.S.A. - depends on country of origin
Website of the Programme:	http://www.aa.washington.edu/	

Any Other Relevant Programme Information:	From the development of unconventional space propulsion concepts, space systems, and advanced unmanned autonomous vehicles to new aerodynamic techniques, advanced composite structures, and plasma science, the faculty and students of the Department of Aeronautics and Astronautics are honing the cutting edge of tomorrow's technologies.

III. International Students:

Is the programme open to international students?	Yes ☒ No ☐
Admission Requirements:	See http://www.aa.washington.edu/admissions/index.html
Are there scholarships or is there any other type of support for international students?	Not specifically for international students; they are considered for scholarships and fellowships, and for graduate research and teaching assistanships, together with applicants from the U.S.A.

Western Michigan University

I. General Information and Contact Person:

Name of Institution/University:	Western Michigan University
Name of Faculty/Department:	Department of Mechanical and Aeronautical Engineering
Name of Contact Person:	Dr. Parviz Merati, Professor and Chair
Mailing Address:	4601 Campus Drive, F234 Kalamazoo MI 49-008-5343 United States of America
Telephone:	+1 269-276-3414
Fax:	+1 269-276-3421
E-mail Address:	parviz.merati@wmich.edu
Website:	http://www.wmich.edu/mae/

II. Programme Details:

Name of Programme/Activity:	Aeronautical Engineering
Type of Programme	Undergraduate Degree Level
Language(s) of Instruction:	English
Number of Faculty Members in the Programme:	5
Number of Students in the Programme:	170
Duration of the Programme:	4 years
Cost of the Programme:	**Tuition** $20,000/Year for International Students **Textbooks** $1000/Year **Living costs** $10,000/Year
Website of the Programme:	http://catalog.wmich.edu/preview_program.php?catoid=1&poid=122
Any Other Relevant Programme Information:	http://www.wmich.edu/mae/ae-video.php

III. International Students:

Is the programme open to international students?	Yes ☒ No ☐
Admission Requirements:	High School
Are there scholarships or is there any other type of support for international students?	No

The United Nations Office for Outer Space Affairs is responsible for promoting international cooperation in the peaceful uses of outer space and assisting developing countries in using space science and technology.

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