# Bachelor of Engineering Science (Aerospace Operations)

The Bachelor of Engineering Science in Aerospace Operations BEngSc (AeroOps) is a professional degree program offered jointly by the University of Technology Sydney (UTS) and Air Transport Training College (ATTC), the Professional Development Centre of the Singapore Institute of Aerospace Engineers (SIAE). This unique degree equips graduates to take advantage of expanding professional opportunities in the fast growing aerospace industry in Singapore and the region.

## Prospective Applicants

BEngSc (AeroOps) enhances the career prospects of:

- Technical specialists currently working in the aerospace industry
- Professionals in other industries who wish to move into the aerospace industry
- Professionals who wish to upgrade and broaden their academic qualifications

## Progression Option

BEngSc graduates have the option of continuing their professional development through studies at UTS leading to a four-year Bachelor of Engineering degree.

Alternatively, BEngSc graduates may enter postgraduate courses in engineering and/or business management including Masters in Engineering Management and Masters in Business Administration programs.

## Course Objectives

The BEngSc (AeroOps) is built on a core program common to all UTS degrees in engineering. It provides a comprehensive grounding in three main areas:-

- Engineering Commerce and Management
- Engineering Communication and Documentation
- Aerospace Operations

## Admission Requirements

The basic entry requirement is a polytechnic engineering diploma or equivalent. Those without a diploma can also be considered based on their performance in other courses and extensive professional experience. Holders of Aircraft Maintenance Engineer Licence (LAME) will also be considered. Students whose previous tertiary education that was not conducted in English must also meet the written and spoken English requirements.

Students who meet the required admission qualification will be granted a maximum recognition of prior learning equivalent to 96 credit points out of the required 144 credits for a BEngSc. The typical student entering with a maximum recognition of prior learning can expect to complete the course by part-time study in approximately 20 months.

The course is awarded with Distinction, Credit or Pass.

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## Course Structure

The course comprises two components, Core and Field of Practice subjects. For BEngSc candidates receiving maximum credit point recognition of prior learning on admission, the core carries 24 credit points and the field of practice 24 points.

| Core Subjects | | Fields of Practice | |
|---|---|---|---|
| Engineering Analytical Modelling | 6 credit points | Aerospace Operations 1 | 6 credit points |
| Engineering Communication | 6 credit points | Aerospace Operations 2 | 6 credit points |
| Engineering Management | 6 credit points | Aerospace Operations 3 | 6 credit points |
| Engineering Economics and Finance | 6 credit points | Aerospace Operations 4 | 6 credit points |

## Mode of Delivery

The course is offered in a mixture of part-time study modes with a strong component of face-to-face teaching and self-directed learning. Each subject takes 8 weeks during which there will be 18 hours of lectures, usually given by UTS academic staff together with up to 24 hours of tutorials given by tutors from ATTC. Comprehensive course materials and study guides are provided.

## Highlights of Field of Practice Subjects

**Aerospace Operations 1**

This is the first subject in the Aerospace Operations major. It provides an overview of aerospace operations in the aviation industry. Aerospace operations are not seen as unique but as a particular example of a transport system which operates in a commercial, economic and regulatory environment.

Topics include: defining the aerospace industry; what is meant by aerospace operations; historical evolution of air transport with trends in transport aircraft design; fuels; supersonic transport; travel away from earth; energy and materials as key factors; aspects of management and business practice; and an introduction to strategic planning applied at the company and national levels in the context of technological change.

**Aerospace Operations 2**

This is the second subject in the Aerospace Operations major. It provides students with skills and understanding in various aspects of flight and ground operations, and the opportunity to analyse system and aircraft performance, and to plan aerospace operations. These activities are central to the overall objectives of the course, and facilitate understanding required of professionals in the industry.

**Aerospace Operations 3**

This subject provides students with a global view of aerospace operations and allows them to contribute to aerospace operations through integration of material covered throughout the course. The subject considers aerospace as an integral part of the total transport system, aviation law and regulations, and systems engineering theory as it applies to aerospace operations.

This subject also integrates material from other elements of the course to give an overview of aerospace operations. The view in this subject is that aerospace operations are not unique, but a particular example of a transport system which operates in a commercial, economic and regulatory environment.

**Aerospace Operations 4**

This subject provides students with an understanding and appreciation of the design process in general, with particular reference to the aerospace industry. Engineering technologists are primarily concerned with the management of technology. Students must, however, be aware of the design process and the constraints and compromises involved, and this subject gives them that awareness. Topics include: the principles of design; design philosophies; design practice; design for strength; mechanical element design; introduction to FEA and CFD; concurrent engineering; design for maintainability; and aircraft design philosophies and implications, including basic aircraft strength, system analysis and materials applications.

## Course Fee

- The course fee is S$19,260 payable in four equal instalments.
- A non-refundable application fee of S$214 is payable upon submission of application.

**All fees quoted above are inclusive of 7% GST**

### Air Transport Training College

Professional Development Centre of the Singapore Institute of Aerospace Engineers

Air Transport Training College (ATTC) is the Professional Development Centre of Singapore Institute of Aerospace Engineers (SIAE)

ATTC provides quality systems related consultancy and education/training programmes to serve the needs of the aerospace industry.

ATTC holds CAAS approval MTO/002 for Part 147 Approved training organisation. In addtion to the Master of Aviation Industry Management course, it offers the following courses:

- Master of Aviation Industry Management
- Foundation Degree in Aircraft Engineering
- Professional Certificate in Aerospace Workshop Operations
- Specialist Diploma in Aircraft Maintenance and Engineering
- Professional Diploma in Aircraft Maintenance and Engineering
- Part 66 Basic Papers
- Human Factors Training
- WSQ Higher Certificate in Aircraft Maintenance

ATTC has classrooms fully equipped with audio video facilities and is a 5 minutes walk from the Eunos MRT Station.

### UNIVERSITY OF TECHNOLOGY SYDNEY

The University of Technology, Sydney (UTS) is among the leading universities in Australia with a student population of more than 25,000 (30% being post-graduates) in nine faculties and one institute.

UTS was top ranked among Australian universities for excellence in learning and teaching by the Australian Federal Government in October 2007. UTS was one of only two universities to be included in Band A1 in all four discipline groups of the government's 2008 Learning and teaching Performance Fund.

The Faculty of Engineering has a strong tradition of co-operative education in which students gain professional experience in parallel with their academic studies. UTS graduates are in high demand.

The BEngSc is a full time three-year course which can be completed (under assured recognition of prior learning provisions) by diploma holders of Singapore polytechnics, or candidates with significant relevant work experience, in two years of part-time study.

The BEngSc with a professional major in Aerospace Operations develops expertise in technology management. There is a commitment to face-to-face teaching and flexible support arrangements. The course allows graduates to study further in engineering or in management.

The information contained in this brochure is correct as of 1 January 2010 and is subject to change without notice. ATTC reserves the right to make changes to the programme structure, admission requirements, course fee, examination rules and regulations, lecturers, date and venue of lectures.

To apply for admission into the Degree programme, please obtain the application form from:

Air Transport Training College
Professional Development Centre of the Singapore Institute of Aerospace Engineers

Cert. No. FS 99759
ISO 9001:2008

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