MASTA 2017

Master Program on Space Technology Applications

Global Navigation Satellite Systems (GNSS)

Overview

Space technology and its applications, the most fascinating technical achievement of the human race in the last four decades, has undoubtedly advanced with great stride. The various practical benefits of space technology play a central role in international development efforts.

In order to transform the recommendations of the United Nations Programme on Space Applications (UN-PSA) into a practical and an operational program, Beihang University has initiated the Master program on Space Technology Applications (MASTA) since 2006, and the program has been held nine times successfully till now. 100 students have graduated and got the Master's Degree on Space Technology Applications. 61 MASTA students from 18 countries are studying at Beihang in 2016.

MASTA is an elaborately designed and intensive Master program for students who are interested in exploring the mysterious universe. This application-oriented program focuses on both knowledge acquisition and operational training. It aims to deliver International, Interdisciplinary, Intercultural, Innovative, Identical (5Is) education and provide a powerful platform for scholars and professionals to obtain more opportunities for communicating and experiencing the space technology practice in China.

MASTA is designed to give participants a competitive edge by:

✧ Broadening their knowledge on space-related issues and activities and encouraging participants to use acquired knowledge and skills through practical, hands-on experience

✧ Developing the skills necessary for working effectively with colleagues from a diverse range of disciplines and cultures

✧ Placing the participants at the frontier of the industry through contact with space professionals

✧ Complying with international conventions

✧ Modularized curricula design

✧ Flexible study modes

This program is carried out according to the regulations and requirements of Beihang University. **The total duration of study is 1 year and 9 months in general.**

Introduction to Beihang University

Beihang University (BUAA), formerly called Beijing University of Aeronautics and Astronautics, was founded in 1952 and has been one of the state key universities of China since 1950s. Through more than 60 years development Beihang has grown into one of the nation's foremost research universities, combining disciplines in science, engineering, humanity, law, economics, management, and education, while maintaining the leading role in technology.

Beihang has now a total enrolment of over 29,000 full-time students, including 13,000 postgraduates. Over 2,000 international students from more than 100 countries are studying at Beihang in 2016. Among them over 1,200 are studying for degree programs, including more than 700 master and doctoral students, and more than 300 are studying Chinese language in Chinese Language Training Center of Beihang.

The University has been reputed for its competitive edge in such disciplines as aeronautics and astronautics, instrument science and technology, computer science and technology, management science and engineering, etc. English or Chinese are used as instruction language for master and doctoral programs.

Beihang is one of the top universities in China equipped with advanced laboratories and teaching facilities. Xueyuan Road Campus is located in the heart of "China's Silicon Valley" – Zhongguancun Science Park. The campus of Beihang is notable for its beautiful environment, convenient transportation, and completed living services, including various sports facilities, bank, post office, supermarkets, canteens, etc..

Application Qualifications

✧ The applicant should be under the age of 35 in general;

✧ The applicant should have some professional experiences of working in space technology industry or research institutes;

✧ The applicant should have Bachelor Degree of relevant discipline or the diploma equivalent to Bachelor Degree;

✧ The applicant is supposed to have research background in relevant areas;

✧ The applicant is expected to have good command of English and the ability to take courses in English;

Note: Please notice as a special requirement that selected applicants should come to study at Beihang University with their Private Passports only (not official/service/other types of passport).

Scholarship and Financial Support

1. The applicants are welcome to apply for the Chinese Government Scholarship (CSC Scholarship) at Beihang University.

   The Full CSC scholarship will cover the following items:

   ✧ Tuition fee for 9 months course study at the University;

- ✧ Tuition fee for 1 year advanced research project;
- ✧ Free accommodation during study at the University (not including water and electricity, etc. costs.);
- ✧ Living allowance during stay at the University (3000 RMB /per month or according to standard by CSC);
- ✧ Medical Insurance only for accidents and hospitalization treatments, according to the standard of CSC;

2. The applicants who fail to get the CSC Scholarship will have chance to get Beijing Municipal/Beihang Scholarship. **Beijing Municipal/Beihang Scholarship will only cover tuition fee.**

Application Procedures and Required Documents

Step 1: Apply online

Make the online application for Chinese Government Scholarship from the website of CSC *http://studyinchina.csc.edu.cn)*, fill up the Application Form, submit the completed Application Form and supporting documents online and print the Application Form according to the requirements. Please note that the specialty should be chosen as "Space Technology Applications" and the language of instructions should be chosen as "English". Please also note that the "**Program Category**" should be "**Type B**" and the "**Agency Number**" of Beihang University is **10006**.

Note: *The online application will begin around the middle of December, 2016.*

Step 2: Prepare documents

1. Application Form for Chinese Government Scholarship;

2. Highest Education Diploma (notarized photocopy or original one) or Certificate of Expected Graduation Date from the university studying currently;

3. Notarized Transcripts or original ones;

4. Study or Research Plan (no less than 500 words);

5. Two Recommendation Letters from Professors or Academic Experts;

6. Photocopy of Physical Examination Form and the Report on Blood Examination. Attachment 1-FOREIGNER PHYSICAL EXAMINATION FORM.pdf

7. Photocopy of the homepage of Passport (the information page);

8. The List of Application Documents and Post Address confirmed. Attachment 2-List of Application Documents.doc

Note: *All the documents should be in duplicate. And the language of documents should be in English or Chinese or attached with translations in English or Chinese.*

Step 3: Submit documents

Mail all required documents to the following address before 10th March, 2017.

Ms. Jessica Zhuang

Address: Building 13&14, Section 3, No.188, South West Fourth Ring, Fengtai District, Beijing 100070, China,

Tel: 86 10 6370 2677 Ext. 405, **Fax:** 86 10 63702286

Note: *In order to speed up your application process, scanned copies can be emailed to the **Contact Person:** jessica@apsco.int so that we can get your information in advance. And **mail all the required documents to the Contact Person** by the already set deadline (**March 10, 2017**). APSCO will acknowledge the receipt of your application after evaluation. No application documents will be returned after submission.*

Important Dates

✧ Applicants should mail the required applications documents **to the Contact Person** by **March 10, 2017.**

✧ The results of admission will be notified by stages **from May 20 to early August 2017**.

✧ The Admission Notice and related documents will be mailed to the successful applicants around **August 15, 2017.**

✧ The program will begin at the middle of **September 2017.**

Contact Information

✧ **Ms.** Jessica Zhuang**, D**epartment of Education and Training and Database Management, APSCO

✧ **Address:** Building 13&14, Section 3, No.188, South West Fourth Ring, Fengtai District, Beijing 100070, China,

✧ **Tel:** 86 10 6370 2677 Ext. 405, **Fax:** 86 10 63702286

✧ **E-mail: jessica@apsco.int**

Website: *http://www.apsco.int & http://is.buaa.edu.cn*

Global Navigation Satellite Systems (GNSS)

Global Navigation Satellite System (GNSS) provides positioning, navigation and timing services for the whole world. It is the most important spatial infrastructure in the social life and military applications in modern times. The GNSS would serve people in many areas together with Remote Sensing, Geographical Information System such as disaster management, emergency response, land, aviation and maritime transportation, etc.

The objective of the program is to enable the students to master the space segment of the GNSS including the satellite constellation, orbit and the payload for clock, signal source, communication and attitude control, the ground segment including the satellite maintenance, telemetry, ephemeris and almanac, and the user segment including receiver and navigation applications. The program also provides opportunity for students to touch the frontier technologies on GNSS.

Referring to the Education Curricula of UN-PSA, Master programs on Space Application would be completed in two phases:

    (a)   9-month Course Study

    (b) 12 months for Advanced Research project (at Beihang University or in applicant's homeland)

Training Program

Phase Ⅰ			
Course Study in China: 9 months (at Beihang University)			
(Leading to Course completion Certificate)			
	Module Ⅰ	**Module II**	**Module III**
Formulation of an Individual Training Plan	Common Platform Courses	- Major courses - Academic Lectures	● Team Pilot Project ● Practice Courses ● Professional Visits

Phase Ⅱ				
Thesis Research: 12 months (in China or home country)				
(Leading to Master's Degree in Engineering)				
Literature Survey and Thesis Proposal	Midterm Assessment	Academic Activities	Thesis Research	Thesis Defense

Degrees

After the 9-month course study at Beihang University, each participant is expected to complete a Master's Degree Thesis (1 year) at Beihang University/in Homeland.

Under the guidance of supervisors, participants are expected to select their research topics closely related to the practical space technology application projects in their home countries.

The evaluation will be mainly focused on the topic of the thesis, range of the writer's knowledge, value and prospect of the thesis, etc.

Participants will be awarded with the Graduation Certificate of Beihang University and Master's Degree Certificate of the People's Republic of China when fulfilling the required credits and passing the thesis defense.

Faculty

The faculty for this program consist of professors, experts and senior engineers from Beihang University and some other institutes or academies from China and abroad. The core faculty has long and varied experience in the field of space science and technology. In addition, they have acquired considerable experience over the years and are skilled in teaching and advising international students.

9-month Course List

No.	Item	Class Hrs	Credits	Remark
Module Ⅰ Platform Courses				
PC1-1	Probability and Statistics in Engineering	48	3	Select at least 3 compulsory credits
PC1-2	Theory of Matrix	48	3	
PC1-3	Numerical Analysis	48	3	
PC2-1	Matlab Programming	32	2	Compulsory
PC3-1	Space Environment, Orbit and Spacecraft Systems	48	3	Compulsory
PC3-2	Introduction to Space Law	18	1	Optional
PC3-3	Space Technology and Space Economy	18	1	Optional
PC4-1	Introduction to China and Chinese Language	54	3	Compulsory
Module Ⅱ Major Basic Courses & Major Courses				
MC3-1	GNSS Reference System	18	1	Compulsory
MC3-2	Principle of GNSS	32	2	Compulsory
MC3-3	GNSS Receiver Principles and Design	32	2	Compulsory
MC3-4	GNSS/INS Integration Navigation	32	2	Compulsory
MC3-5	GNSS Applications	18	1	Compulsory
MC3-6	Satellite Navigation Data Processing	32	2	Compulsory
MC3-7	GNSS Experiment	18	1	Compulsory
Module Ⅲ Team Pilot Projects				
PPC	Team Pilot Project	12 Weeks	8	Compulsory