

北京航空航天大学  
BEIHANG UNIVERSITY

# Micro-satellite Technology



MASTA&DOCSTA  
Admission Announcement **2021**

## Overview

Space technology and its applications, the most fascinating technical achievement of the human race in the last six 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 operable program, Beihang University has initiated the Master program on Space Technology Applications (MASTA) since 2006, and the program has been held 13 times with success till now. The MASTA program has enrolled totally 348 postgraduate students from 25 countries, among which 256 students have graduated and obtained the Master's Degree on Space Technology Applications. In 2013, Doctoral Programme on Space Technology Applications (DOCSTA) started, and the program has been held 8 times with success till now. This program has enrolled totally 83 doctoral students from 14 countries, among which 22 students have graduated and obtained the Doctoral Degree on Space Technology Applications.

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. The DOCSTA program is focusing on training the participants in solid theoretical knowledge and systematic expertise in the field of space technology applications. MASTA&DOCSTA aims to deliver "International, Interdisciplinary, Intercultural, Innovative, Identical (5I)" 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;
- ✧ Providing variety practice opportunities (include watching satellite launching on site, attending international conferences/workshops, etc.);
- ✧ Internationally qualified professors and experts from a diversity of academic backgrounds;
- ✧ Modularized curricula design and flexible study modes;
- ✧ Developing the cross-cultural communication skills with an internationalized atmosphere.

The main educational fields of MASTA Program include Remote Sensing and Geographic Information Systems (RS&GIS), Satellite Communications, Global Navigation Satellite System (GNSS), Micro-satellite Technology, Space Law and Policy, Space Science and Environment, etc.

Doctoral Participants are expected to have the ability of conducting the scientific research, exploring the applications or pursuing the professional careers in the related fields independently.

Candidates are expected to have a profound grasp and understanding of new technology and development in space science technology and applications. They are required to finish the dissertation with high practicability and application prospects.

Lectures are conducted in English. The thesis for project practice is required to be written in English.

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

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

For more details, please visit our website: <http://rcssteap.buaa.edu.cn/kjkjyev/Education.htm>

## **Beihang University**

Beihang University (previously known as Beijing University of Aeronautics and Astronautics) was founded on October 25, 1952 under the name of Beijing Institute of Aeronautics, originating from the merger of the aeronautical departments of Tsinghua University, Beiyang University, Xiamen University, Sichuan University, etc. Located in the center of the Zhongguancun Science Park and within easy reach of central Beijing, Beihang is the first university in China focusing on aeronautical and astronautical education and research. About 26km away from the main campus, the suburban Shahe campus provides quiet study milieu and is also home to the National Laboratory of Aeronautics and Astronautics (NLAA). The very new Doudian campus aims at research and innovation through engineering combined with medicine.

For more details, please visit : <https://ev.buaa.edu.cn/>

## **Training Mode**

The credit system is applied to postgraduates studying in China, which includes course study, practice and degree thesis. The tutor shall bear the responsibility for training of international postgraduates. The tutor (group) should be responsible for making the training plan of international students, guidance of their thesis proposals, scientific research and their thesis writing.

No changing in major or tutor is permitted after three months since the registration unless there is a special reason.

For more details, please visit our website:

MASTA- [http://rcssteap.buaa.edu.cn/kjkjyev/Education/MASTA\\_Program.htm](http://rcssteap.buaa.edu.cn/kjkjyev/Education/MASTA_Program.htm)

DOCSTA- [http://rcssteap.buaa.edu.cn/kjkjyev/Education/DOCSTA\\_Program.htm](http://rcssteap.buaa.edu.cn/kjkjyev/Education/DOCSTA_Program.htm)

## Qualifications

- ✧ Follow the laws and regulations of the People's Republic of China and Beihang University rules.
- ✧ The applicant must be non-Chinese citizens with a valid passport in compliance with the provisions of Nationality Law of the People's Republic of China, under the age of 35 for MASTA, under the age of 40 for DOCSTA;
- ✧ The applicant should have some professional experiences of working in space technology industry or research institutes;
- ✧ The applicant for MASTA should have Bachelor Degree of relevant discipline or the diploma equivalent to Bachelor Degree; The applicant for DOCSTA should have Master's Degree of relevant discipline or have the equivalent educational background of a Master's degree;
- ✧ The applicant is expected to have good command of English and the ability to take courses in English;
- ✧ The applicant is supposed to have research background in relevant areas;
- ✧ According to the relevant regulations, former residents of mainland China, Hong Kong, Macau and Taiwan who have emigrated to other countries and apply as international students, must present valid passport or citizenship documents dating before April 30, 2017 and proof of cancellation of Chinese nationality.

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).

*Applicants of this program are mostly recommended by organizations. Students who are interested to do self-sponsor, please visit website (<http://admission.buaa.edu.cn/>) for further information.*

## Fees

- ✧ Tuition Fee: 35000 Yuan (RMB) / year for MASTA, 42000 Yuan (RMB) / year for DOCSTA;
- ✧ Insurance: 800 Yuan (RMB) per year;
- ✧ Accommodation: Double-bed room, 750 Yuan (RMB)/month, per bed (not including costs like water, electricity, etc.).

Note: This program is mainly for directional enrollment. Students who are interested to do self-sponsor, please visit website (<http://admission.buaa.edu.cn/>) for further information.

## Scholarship

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

**The Full CSC scholarship will cover the following items:**

- ✧ Tuition fees,

- ✧ Accommodation,
  - ✧ Living allowance,
  - ✧ Comprehensive insurance.
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.**

## Required 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;
4. Study or Research Plan (no less than 500 words);
5. Two Recommendation Letters from Professors or Academic Experts;
6. The Results of TOEFL, IELTS or English Proficiency Certificates;
7. Photocopy of Physical Examination Form and the Report on Blood Examination;  
[Attachment 1-FOREIGNER PHYSICAL EXAMINATION FORM.pdf](#)
8. Photocopy of Remittance Receipt for Application Fee (RMB 400 or USD 70)
9. Photocopy of First Page of Passport (the information page);
10. Resume (if the study or work experience is not continuous, please attach an explanation)
11. An Integrity Commitment letter to ensure the authenticity of all the application materials you provide.  
[Attachment 2- the Integrity Commitment Letter template](#)
12. Non-Criminal Record Report (If applicant is unable to provide this document, as a substitute, applicant should explain the situation and provide a non-criminal record commitment in handwriting)  
[Attachment 3- non-criminal record commitment template](#)
13. The List of Application Documents and Post Address confirmed.  
[Attachment 4- 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.*

*-Application process will only start after your application fee well-received.*

*-If there are any authenticity issues with your application materials, your application qualification will be*

cancelled immediately.

-The Non-Criminal Record Report is a required document in the CSC system. Applicants who fail to upload this document will not be able to complete the application online.

## How to apply

- ✧ Applicants shall follow the instruction as below to execute your application process, please be careful with your choice for the correct Program Category “TYPE B” and accurate Agency Number for Beihang University “10006”.
- ✧ Please note that the specialty should be chosen as “Space Technology Applications” and the language of instructions should be chosen as “English”.
- ✧ All applicants shall submit your application in both Beihang University International Students Enrollment System and CSC official system. Links are as below:

Beihang International students enrollment system: <http://admission.buaa.edu.cn>

CSC system: <http://studyinchina.csc.edu.cn>

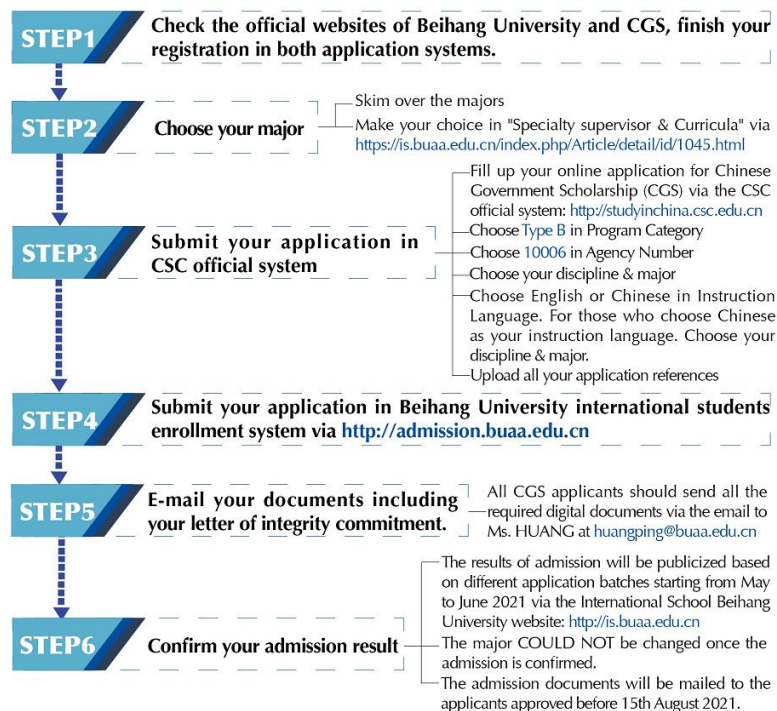
Please notice:

-If the CSC system is not open registration, you may follow the CGS website and pay attention to their notice about the official schedule.

-Beihang university never authorize any intermediary agency to carry out scholarship enrollment. Please do not trust paid services and false promises from intermediaries.

-The major COULD NOT be changed once your admission is confirmed.

-Please make sure all the documents and material are saved as ONE PDF file.





## Contact & Beneficiary info

- ✧ You may find more details and FAQ via <http://is.buaa.edu.cn/en/info/1416/2324.htm>. Please mail all required documents to the following address before March 15, 2021.

**Ms. Jessica ZHUANG**

**Address: ASIA-PACIFIC SPACE COOPERATION ORGANIZATION (APSCO)**

**Building 13&14, Section 3, No.188, South Street Fourth Ring, Fengtai District,  
Beijing, China**

**Tel: +86-10-63702677-405**

Note: *In order to speed up your application process, scanned copies can be emailed to the **Contact Person: [jessica@apsco.int](mailto:jessica@apsco.int)** so that we can get your information in advance. And **mail all the required documents to the Contact Person at APSCO** by the already set deadline (**March 15, 2021**). APSCO and Beihang University will acknowledge the receipt of your application after evaluation. No application documents will be returned after submission.*

- ✧ Beneficiary info for Application Fee (\*Remittance)

For USD

Beneficiary Name: BEIHANG UNIVERSITY

Account No.: 0200006209026400229

Beneficiary Banker's Name: Industrial and Commercial Bank of China, Beijing Dongsheng Road Branch, Beijing, China

Swift Code: ICBKCNBJBJM

For RMB

账户名: 北京航空航天大学

账号: 0200006209026400229

收款行: 中国工商银行北京分行东升路支行

*Please notice*

*-Application Fee paid in cash would not be accepted.*

## Important Dates

- ✧ Applicants should mail the required applications documents to the **Contact Person at APSCO** by **March 15, 2021**.
- ✧ The program will start in **early September 2021**.

## Contact Information

- ✧ **Ms. Jessica ZHUANG**
- ✧ **Address:** ASIA-PACIFIC SPACE COOPERATION ORGANIZATION (APSCO)
- ✧ Building 13&14, Section 3, No.188, South Street Fourth Ring, Fengtai District,
- ✧ Beijing, China
- ✧ **Telephone:** +86-10-63702677-405
- ✧ **E-mail:** [jessica@apsco.int](mailto:jessica@apsco.int)
- ✧ **Website of APSCO:** <http://www.apsco.int>
- ✧ **Website of International School, Beihang University:** <http://is.buaa.edu.cn>
- ✧ **Website of Beihang University:** <http://ev.buaa.edu.cn/>
- ✧ **Website of China Scholarship Council:** <http://studyinchina.csc.edu.cn>

*In 2021, MASTA Program provides three educational fields: Satellite Communications and Global Navigation Satellite Systems (SC&GNSS), Remote Sensing and Geo-information System (RS&GIS), Micro-satellite Technology. The followings are detailed information of Micro-satellite Technology.*



## **Micro-satellite Technology**

During the past decades, the micro-satellites have been applied widely to perform space experiments, demonstrate new technology and operational missions. Micro-satellite has become one of the key fields in the future space exploration. Because of their simple functions, small sizes, light weight as well as low cost, micro-satellite technology is extremely suitable to be developed in universities. On the other hand, although small or micro-satellites seem function and system simple, such kinds of satellites still consist of subsystems that almost cover all the technology in design and manufacture for normal satellites, therefore it is an efficient way for students to study and develop space technology through special micro-satellite projects. Many universities in the world are now endeavoring in various micro-satellites, Surrey University in British and Delft University of Technology are examples.

In order to enhance student innovation and engineering abilities in spacecraft design, a student micro-Satellite (BUAA-SAT) program is sponsored by Beihang University. The Micro-satellite Technology program of the Centre is the one branch of BUAA-SAT as the English-taught program for international students. After years of work, BUAA-SAT has completed its preliminary design phase. All subsystems have been prototyped and demonstrated. Now the flight model and qualified tests of space environments are conducted.

Meanwhile a training platform for micro-satellite has been formed at Beihang University, which contains document materials for design, simulation as well as devices and facilities for test. Beihang University has developed micro-satellite laboratory with professional facilities, such as the TT&C (Telemetry Telecommand and Communication) ground station, the clean room and the vacuum tank for space environment tests. Students could participate the design and experiments of the micro-satellite subsystems. BEIHANG also developed close cooperation with China aerospace industry. Technical visits and professional lectures will be organized regularly.

### **9-month Course List**

No.	Item	Class Hrs	Credits	Remark
<b>Module I Platform Courses</b>				
PC1-1	Probability and Statistics in Engineering	48	3	Select at least 3 credits of them
PC1-2	Theory of Matrix	48	3	
PC1-3	Numerical Analysis	48	3	
PC2-1	Matlab Programming	32	2	Compulsory/ Optional
PC3-1	Space Environment, Orbit and Spacecraft Systems	48	3	Compulsory
PC3-2	Introduction to Space Technology Applications	18	1	Compulsory
PC3-3	International Cooperation in the Peaceful Uses of Outer Space	16	1	Compulsory/ Optional
PC4-1	Chinese (level 1)	60	2	Compulsory
PC4-2	Chinese (level 2)	60	1	Compulsory
PC4-3	Introduction to China	16	1	Compulsory

PC5-1	Scientific Literature Retrieval	16	1	Compulsory/ Optional
<b>Module II Major Basic Courses &amp; Major Courses</b>				
MC4-1	Orbital Mechanics	48	3	Compulsory
MC4-2	Spacecraft Structure and Mechanism Design	32	2	Compulsory
MC4-3	Practice of MSC.Patran / Nastran	16	1	Compulsory
MC4-4	Satellite OBDH System Design and Test	32	2	Compulsory
MC4-5	Thermal Control Technology of Spacecraft	32	2	Compulsory
MC4-6	Small Satellite's System Design and Engineering Practice	40	2	Compulsory
MC4-7	Attitude Control System Design of Satellite	16	1	Compulsory
MC4-8	Experiments of Microsatellite System	16	1	Compulsory
<b>Module III Team Pilot Projects</b>				
PPC	Team Pilot Project	12 Weeks	6	Compulsory

## **Professionals/Experts**

Please visit: [http://rcssteap.buaa.edu.cn/kjkjyev/Education/Faculty\\_Staff/Faculty.htm](http://rcssteap.buaa.edu.cn/kjkjyev/Education/Faculty_Staff/Faculty.htm)

## **Partners**

Please visit: <http://rcssteap.buaa.edu.cn/kjkjyev/Cooperation/Partners.htm>

## **Facilities**

Please visit: [http://rcssteap.buaa.edu.cn/kjkjyev/Life\\_at\\_RCSSTEAP/Facilities.htm](http://rcssteap.buaa.edu.cn/kjkjyev/Life_at_RCSSTEAP/Facilities.htm)