



# 北京航空航天大学 中法航空学院

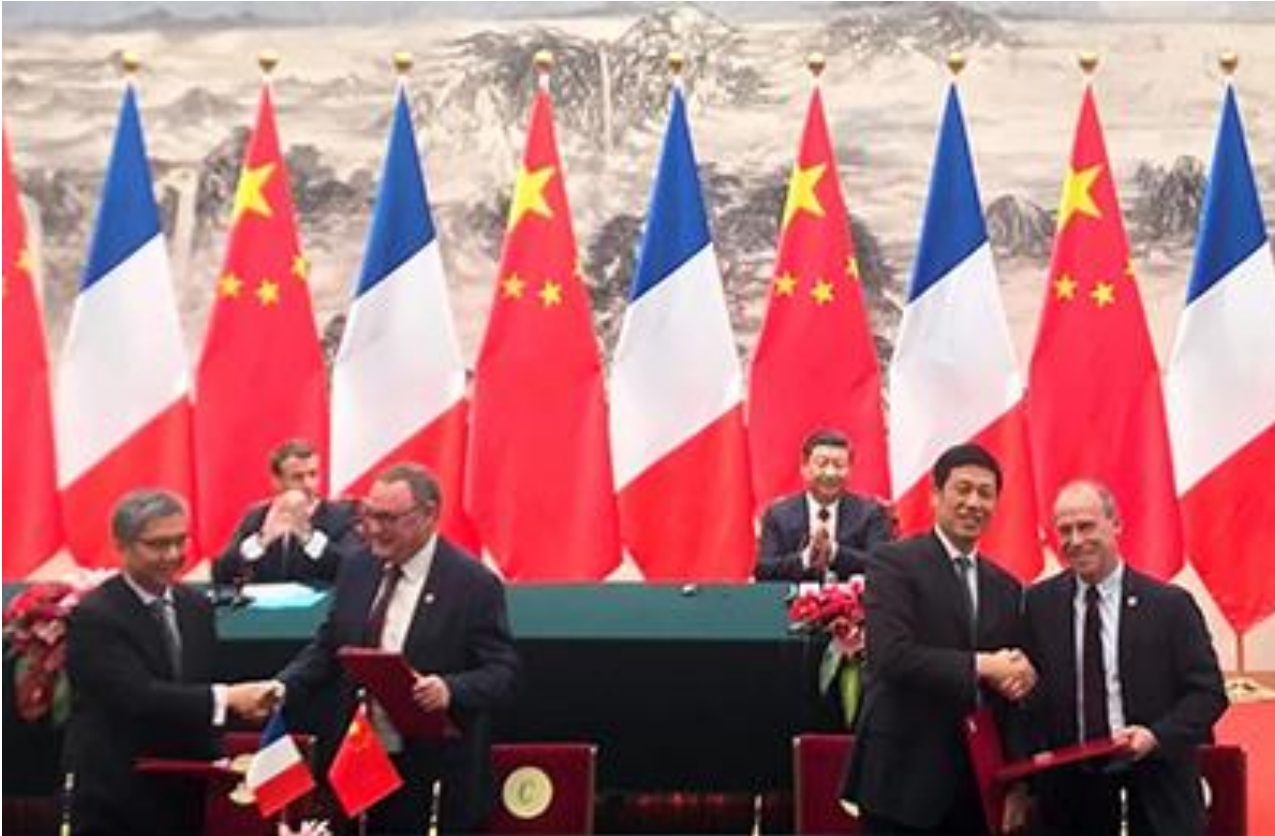
## Zhongfa Aviation Institute of Beihang University



**A sino-french Institute of engineering in Civil Aviation**



## Signature of a memorandum of cooperation in January 2018



On 9th January 2018, under the joint testimony of President Xi Jinping and President Macron, Beihang University (BUAA) and French Ecole Nationale de l'Aviation Civile (ENAC) signed a memorandum of cooperation in the Great Hall of the People in Beijing, under which the two institutions will jointly establish a Sino-French aviation education and research institution as a Sino-foreign cooperation higher education institution in Hangzhou, Zhejiang province.

**This memorandum of cooperation was the first step towards the creation of a new international campus of Beihang in Hangzhou which finally opened in April 2023**

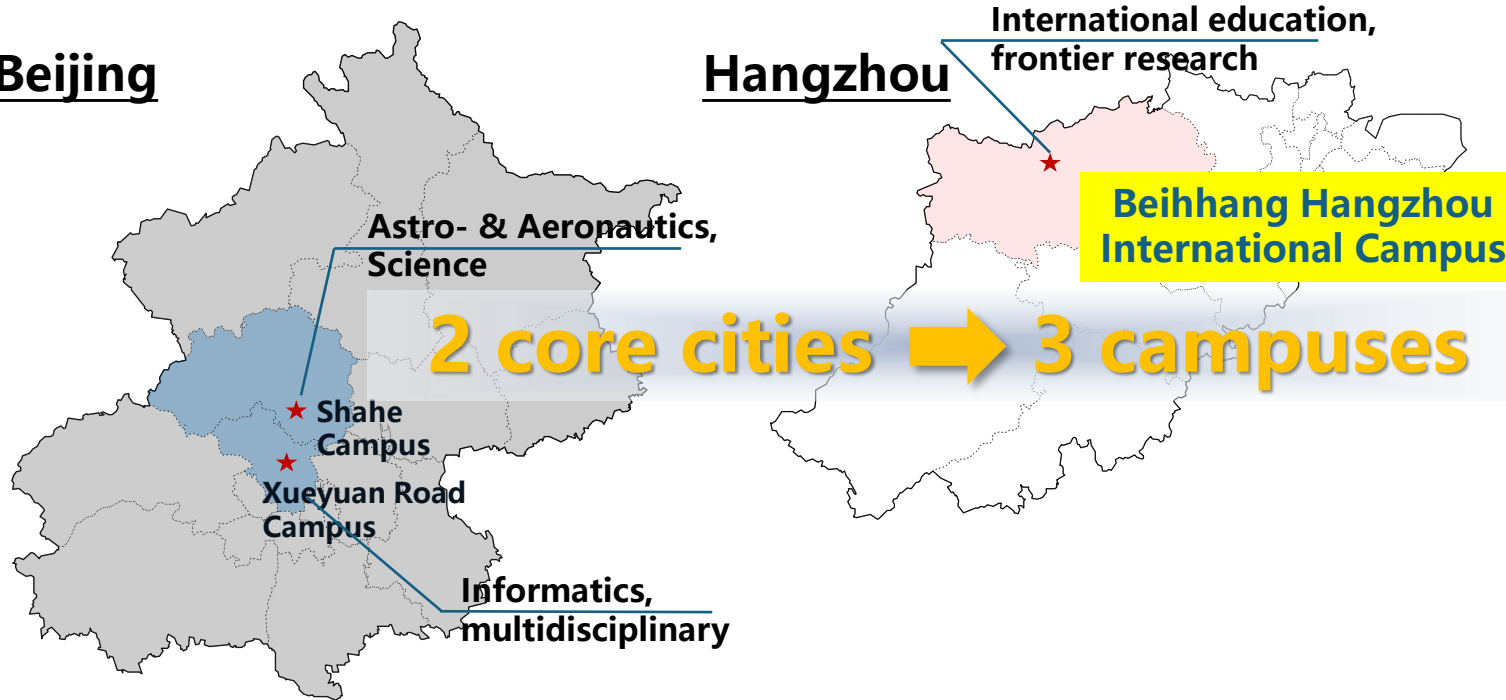
北京航空航天大学



# Beihang - a new chapter, 3 campuses in 2 cities

## Beijing

## Hangzhou



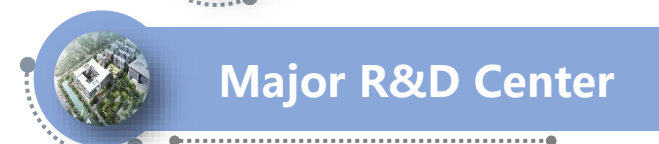
**Shahe Campus**  
1km<sup>2</sup>



**Xueyuan Road**  
1km<sup>2</sup>



**Hangzhou International Campus**  
1km<sup>2</sup>



**Major driving force for Education, Research and Talent Development of Beihang University**

**6100 +**  
FACULTY AND STAFF MEMBERS

**39000 +**  
TOTAL ENROLLMENT

**1100 +**  
INTERNATIONAL STUDENTS

**16000 +**  
UNDERGRADUATES

**22000 +**  
POSTGRADUATES

# Beihang - a new chapter, 3 campuses in 2 cities

## EDUCATION

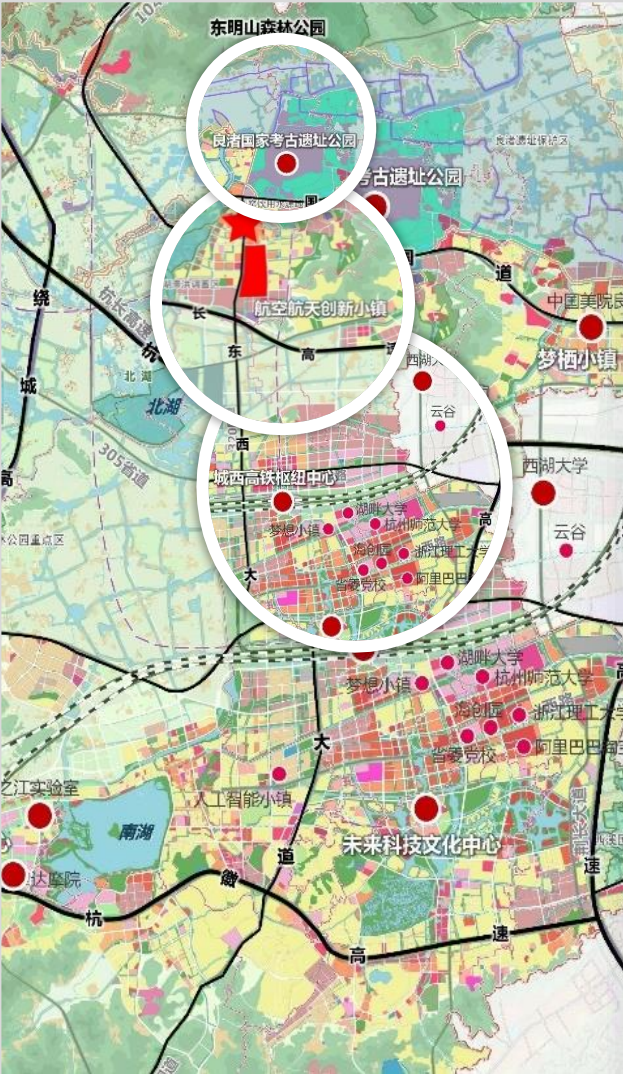
WELL-KNOWN FOR ITS ACADEMIC EXCELLENCE AND A WIDE RANGE OF ACADEMIC PROGRAMS, BEIHANG UNIVERSITY ATTRACTS THE EXCELLENT STUDENTS FROM ALL OVER THE WORLD.



★ BEIHANG IS THE ONLY UNIVERSITY TO WIN 18 EXCELLENCE AWARDS IN THE "CHALLENGE CUP" NATIONAL COLLEGE STUDENTS' EXTRACURRICULAR ACADEMIC SCIENCE AND TECHNOLOGY CONTEST, AFFIRMING ITS MISSION TO EDUCATE STUDENTS WITH CREATIVITY AND TEAMWORK SPIRIT.



# Hangzhou International Innovative Institute Campus





**1 km<sup>2</sup>**  
Land area



**780,000 m<sup>2</sup>**  
Floor area



**9.38 billion**  
Capital investment





# ZFAI: a sino-french Institute in the framework of 2003 decree for creation of sino-foreign Institutes

Promulgated by **Decree No. 372** of the People's Republic of China Chinese-foreign cooperation in running schools Ordinance on **February 19, 2003** adopted by the 68th Executive meeting of the State Council, are hereby promulgated and take effect on September 1, 2003.

State encourages the introduction of foreign high quality educational resources of Chinese-foreign cooperation in running schools. Countries encourage Sino-foreign cooperation in running schools in the field of higher education and vocational education, encourage institutions of higher education in China and foreign well-known institutions of higher education cooperation.

- ✓ 2005: Creation of école Centrale de Pékin
- ✓ 2023: Creation of ZhongFa Aviation Institute
- ✓ 2024: 21 Institutes

## IMPLANTATION DES INSTITUTS FRANCO-CHINOIS ET DES PARTENAIRES FRANCAIS 中法学院及法方合作院校地理位置

<p><b>ÉCOLE CENTRALE DE PÉKIN</b> Université Beihang 北京航空航天大学中法工程师学院 Lille, Lyon, Marseille, Nantes, Paris 里尔 / 里昂 / 马赛 / 南特 / 巴黎</p> <p><b>ÉCOLE D'INGÉNIEURS CHIMIE PÉKIN</b> Université de technologie chimique de Pékin 北京化工大学巴黎居里工程师学院 Lille, Lyon, Paris, Pau, Toulouse 里尔 / 里昂 / 巴黎 / 波城 / 图卢兹</p> <p><b>INSTITUT SINO-EUROPÉEN D'INGÉNIERIE DE L'AVIATION</b> Université de l'aviation civile de Chine 中国民航大学中欧航空工程师学院 Poitiers, Toulouse 普瓦捷 / 图卢兹</p> <p><b>UNIVERSITÉ DE TECHNOLOGIE SINO-EUROPEENNE</b> Université de Shanghai 上海大学中欧工程技术学院 Belfort-Montbéliard, Compiègne, Troyes 贝尔福-蒙贝利亚德 / 贡比涅 / 特鲁瓦</p> <p><b>ÉCOLE D'INGÉNIEUR PARIS SJTU</b> Université Jiaotong de Shanghai 上海交通大学巴黎卓越工程师学院 Palaiseau, Paris 帕莱塞 / 巴黎</p>	<p><b>INSTITUT DE MANAGEMENT DES ARTS ET DU DESIGN</b> Académie centrale des Beaux-Arts 中央美术学院艺术与设计管理学院 Bordeaux, Marseille, Paris 波尔多 / 马赛 / 巴黎</p> <p><b>INTERNATIONAL ELITE ENGINEERING SCHOOL</b> Université de Science et Technologie de Chine de l'Est 华东理工大学国际卓越工程师学院 Bordeaux, Caen, Clermont-Ferrand, Compiègne, Lille, Limoges, Lyon, Marseille, Montpellier, Mulhouse, Nancy, Paris, Pau, Poitiers, Rennes, Rouen, Strasbourg, Toulouse 波尔多 / 卡昂 / 克莱蒙费朗 / 贡比涅 / 里尔 / 利摩日 / 里昂 / 马赛 / 蒙彼利埃 / 米卢斯 / 南锡 / 巴黎 / 波城 / 普瓦捷 / 雷恩 / 鲁昂 / 斯特拉斯堡 / 图卢兹</p> <p><b>INSTITUT FRANCO-CHINOIS DE DESIGN DE HANGZHOU NACAA</b> Académie des Arts de Chine 中国美术学院南特设计联合学院 Nantes 南特</p> <p><b>FASHION DESIGN COLLEGE OF INSTITUTO MARANGONI</b> Zhejiang Sci-Tech University 浙江理工大学马兰戈尼时尚设计学院 Paris 巴黎</p>	<p><b>INSTITUT SINO-FRANÇAIS D'AVIATION CIVILE</b> Université Beihang 北京航空航天大学中法航空学院 Toulouse 图卢兹</p> <p><b>ÉCOLE NATIONALE D'INGÉNIEURS SINO-FRANÇAISE DE NJUST</b> Université des sciences et technologies de Nanjing 南京理工大学中法工程师学院 Metz 梅兹</p> <p><b>ÉCOLE RENNAISE DE DEUXIÈME ET TROISIÈME CYCLES DE L'UNIVERSITÉ DU SUD-EST</b> 东南大学雷恩研究生院 Rennes 雷恩</p> <p><b>INSTITUT HOHAI-LILLE</b> Université de Hohai 河海大学 Lille 里尔</p> <p><b>INSTITUT INTERNATIONAL CONJOINT D'AUDIT</b> Université d'audit de Nanjing 南京审计大学国际联合审计学院 Lille 里尔</p> <p><b>INSTITUT CONJOINT DES UNIVERSITÉS DE NINGBO ET D'ANGERS</b> Université de Ningbo 宁波大学联合学院 Angers 昂热</p>	<p><b>INSTITUT FRANCO-CHINOIS DE L'UNIVERSITÉ RENMIN DE CHINE</b> 中国人民大学中法学院 Bordeaux, Marseille, Montpellier, Paris 波尔多 / 马赛 / 蒙彼利埃 / 巴黎</p> <p><b>INSTITUT EURO-CHINOIS POUR LES ÉNERGIES PROPRES ET RENOUVELABLES</b> Université des sciences et technologies de Huazhong 华中科技大学中欧清洁能源与可再生能源学院 Paris 巴黎</p> <p><b>INSTITUT WUT-AMU</b> Université de Technologie de Wuhan 武汉理工大学艾克斯马斯学院 Marseille 马赛</p> <p><b>INSTITUT FRANCO-CHINOIS DGUT-CNAM</b> Université de technologie de Dongguan 东莞理工学院法国国立工艺学院联合学院 Paris 巴黎</p> <p><b>SHENZHEN AUDENCIA FINANCIAL TECHNOLOGY INSTITUTE</b> Université de Shenzhen 深圳大学深圳南特金融科技学院 Nantes 南特</p> <p><b>INSTITUT FRANCO-CHINOIS DE L'ÉNERGIE NUCLÉAIRE</b> Université Sun Yat-sen 中山大学中法核工程与技术学院 Cadarache, Grenoble, Marcoule, Montpellier, Nantes, Paris, Saclay 卡达拉舍 / 格勒诺布尔 / 马尔库尔 / 蒙彼利埃 / 南特 / 巴黎 / 萨克雷</p>	<p>Suzhou 苏州</p> <p>Wuhan 武汉</p> <p>Wuhan 武汉</p> <p>Dongguan 东莞</p> <p>Shenzhen 深圳</p> <p>Zhuhai 珠海</p>
---	---	---	--	---

*The 21 sino-french Institutes\**

# ZhongFa Aviation Institute (ZFAI)

A Sino-French Institute for Civil Aviation

Beihang University



Two partners

ENAC



**Education oriented towards Innovation:** High level innovative training programs for Chinese and International students:

A **world-class engineering** curriculum (180 seats/y)

- ✓ Fundamental & Engineering Sciences for Civil Aviation
- ✓ Theory & Practice combining
- ✓ Creativity boosting, Critical Thinking
- ✓ Accredited by French CTI & Chinese Ministries
- ✓ French, Chinese & English

A **Double-Degree International Master** Program (30 seats/y)

- ✓ 3 years with part in China and part in France
- ✓ Transportation + IATSED and Aviation Transportation + IATOM
- ✓ English

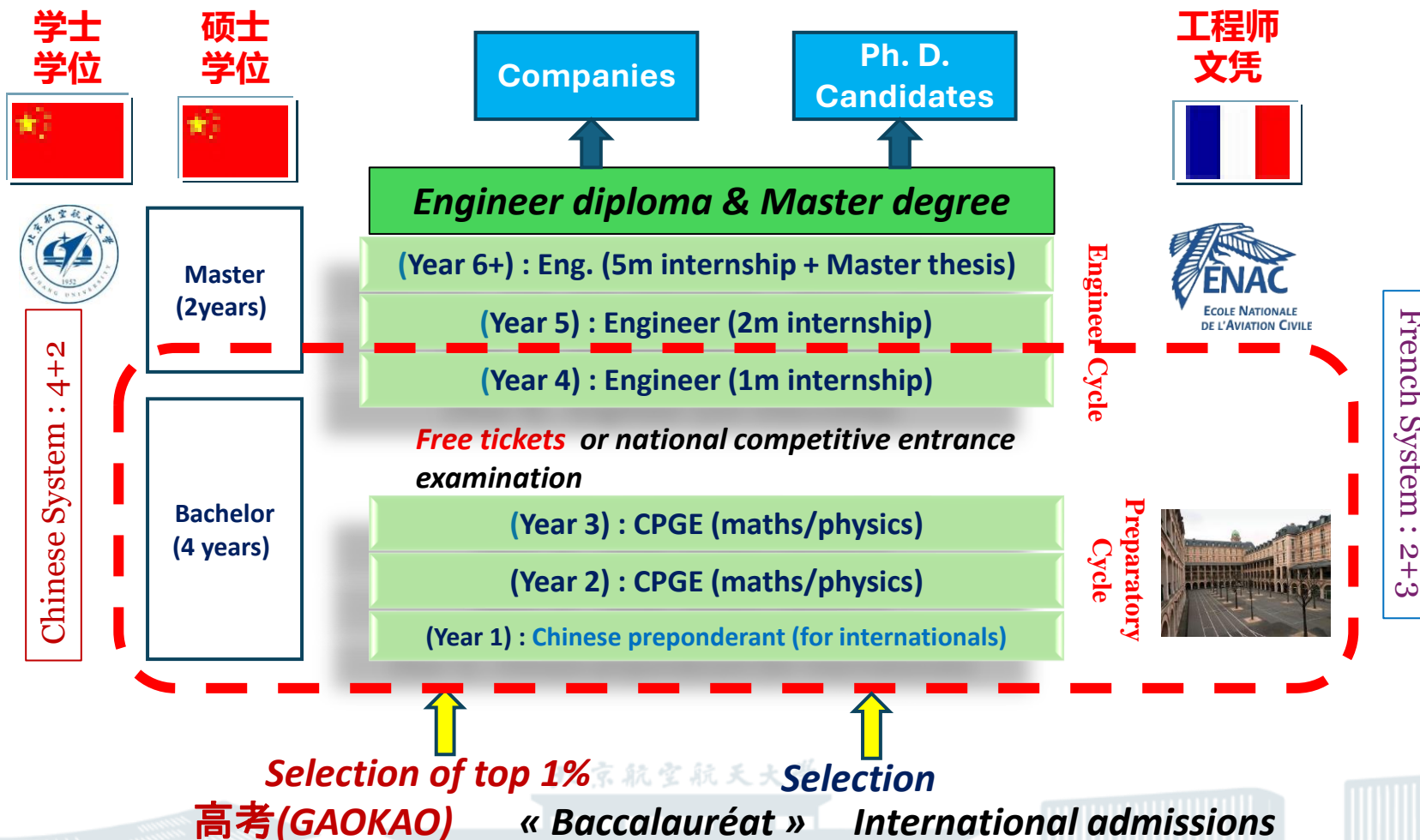
**Advanced Master** Programs (60 seats/y)

- ✓ 15 months program for professional training
- ✓ Aviation Management & Airport Management
- ✓ English



# Training Program : International Engineer

Two educative systems merged





# Training Program : International Engineer

## Year 1

Introduction to China (en)	32
General Physics Experiments (en)	32
Chemistry (en)	32
Fundamental of Mathematics (en)	32
Fundamental of Computer Technology (en)	40
English	32
Chinese	320

Fundamental of Maths and Physics (en+fr)	48
Mechanics (en or fr)	64
Elementary Scientific Chinese (cn)	64
English	32
Chinese	160

## Year 2

Analysis 1 (fr)	64
Algebra 1 (fr)	64
Optics (fr)	64
Optics Experiments (fr)	32
English	32
Chinese	64

Analysis 2 (fr)	64
Geometry 1 (fr)	64
Waves and Electromagnetism (fr)	80
Basic Programming Design (cn)	48
English	32
Chinese	64

## Year 3

Analysis 3 (fr)	48
Algebra 2 (fr)	64
Differential Equations (fr)	48
Thermodynamic (fr)	64
Fluids Mechanics (fr)	48
Industrial Sciences 1 (fr)	64
English	32

Geometry 2 (fr)	64
Probabilities (fr)	48
Numerical Analysis and Mathematical Modelling (fr)	48
Electronics (fr)	64
Electronics Experiments (fr)	32
Industrial Sciences 2 (fr)	64
Data structures and algorithms (fr)	32
English	32

(this program may be adjusted)

In year 1, most of the lectures are taught in english or in french. In year 2 and 3, the lectures are taught in french or in chinese

# Training Program : International Engineer

## Engineering Cycle

### Year 4

• Optimization	32
• Measurement theory	16
• Probabilities and statistics	38
• Electrical engineering	32
• Deterministic signal processing	32
• The aircraft and its principles	26
• Which aircraft for which mission	10
• Introduction to airport management and operations	16
• Introduction to ATM and its evolutions	12
• Introduction to air laws	11
• Meteorology basics	12
• Basic fluid mechanics and aerodynamics	48
• Programmation et algorithmique	45
• Project management	14
• French language, cultural conferences and workshops	48
• Engineering English	48
• Professional experiment	20
<b>460h (96h)</b>	
• Optimization	24
• Probabilities and statistics	40
• Random signal processing	32
• Database design	56
• Networks	16
• Flight mechanics	30
• System modeling and simulation	24
• Aircraft system	18
• Multidisciplinary project bachelor thesis	176
• French language	48
• Engineering English	48
• Worker internship (during summer break)	80
• Week of science, technology and academics	10
<b>458h (96h)</b>	

### Year 5

• Non linear optimization	20
• Stochastic process	20
• Digital electronics	32
• Representation and analysis of dynamical systems	32
• Control design and servo-loop systems	32
• Propulsion	34
• Flying qualities	34
• Advanced fluid mechanics	32
• Control Composite and special materials	36
• Flight limitations and flight management	22
• Aeronautical meteorology	13
• Air traffic management	16
• Airplane conceptual design	30
• Production and maintenance techniques	34
• Air law	20
• French language	48
• Basic aviation English	48
<b>503h (96h)</b>	
• Operational research for Air Transport	20
• Operational research (project)	20
• Validation and verification	26
• Real time computing and Systems	32
• Sustainable development and environment	24
• Airworthiness	44
• Project management 2	22
• Air transport economics	24
• Technician internship	160
• Aircraft avionics	14
• Automatic piloting and flight control	14
• Sensors	14
• Networks	14
• Navigation and CNS systems	24
• French language	32
• Basic aviation English	32
<b>496h (64h)</b>	

### Year 6

• Multi-Disciplinary project	50
• Aeronautical engineering science	30
• Corporate management	32
• Business game and team organization	18
• Navigation Systems	34
• Flight Management and Guidance Systems	30
• Avionics Technology	40
• Avionics Systems Regulations	18
• Aeronautical Communication Systems	40
• Surveillance Systems	34
• Air-Ground Collaborative Applications	36
• Airline management	20
• Airport operations	20
• ATM and ATC operations	20
• Air Transport operations (project)	20
<b>442h</b>	
PFE	
• PFE	0

(this program may be adjusted)

Taught in english, french or chinese



## Collaboration with industrial partners

*Before graduation, the students should comprise a significant amount of industrial experience throughout the curriculum. This interaction with industrials is a particularly suitable method of achieving a number of important objectives :*

- awareness and openness to the professional world,*
- acquisition of professional and relational skills,*
- discovering of engineering studies in a real-life professional situation,*
- ....*

*This interaction with the industrial world takes the form of different compulsory activities in the curriculum:*

➤ **Internships:**

- 1 month in 4<sup>th</sup> year (worker position, this internship must be done in a company)*
- 2 months in 5<sup>th</sup> year (assistant position, this internship can be done in a laboratory or a company)*
- 5-6 months in 6<sup>th</sup> year (engineer position, this internship must be done in a company)*

➤ **Projects with industrials** (1 semester or 2 semesters-long). A group of students can work on a subject given by an industrial under the supervision of both a professor of ZFAI and a person from the company. These projects can be done by students of 4<sup>th</sup> or 5<sup>th</sup> year of studies

# Training program for international students at ZFAI

## **Bachelor (4 years long):**

- ✓ No requirement in chinese language before admission
- ✓ Chinese lectures if necessary (HSK5 level is the target)
- ✓ French & Chinese professors
- ✓ Multi-language program (french, chinese, english)
- ✓ Preparatory school program equivalent to MPSI during the years 1,2 & 3
- ✓ 1 month operator internship between 3rd & 4th year
- ✓ 4th year equivalent to the 1st year of ENAC engineer program
- ✓ About 130 credits to validate for the Bachelor by modules (possibility of re-exam)

## **After the Bachelor:** Several possibilities

- ✓ Admission in the Master/Engineer cycle of ZFAI (all the international students graduated with Bachelor of ZFAI can continue in Master/Engineer program of ZFAI)
- ✓ Application possible to join the engineer program of ENAC in France
- ✓ Admission in another School or University in Master or engineer Program (recruitment after Bachelor)
- ✓ .....



# Applications – Fees & Diverse costs

Ordre	Catégorie	Montant	Moyen de paiement	Remarque
1	Frais de scolarité 学费	40 000 yuans/an	Alipay ou Wechat pay ou E-CNY ou connectez-vous au site de paiement	Payer une seule fois à la première inscription.
2	Frais de dossiers 报名费	400 yuans 400元	Carte bancaire Union pay	Avant de soumettre la demande en ligne sur la page d'admission, les Frais de dossiers doivent être payés, et ces frais ne seront pas remboursés après le paiement, les étudiants doivent le confirmer puis le payer.
3	Chambre 宿舍	Pour une chambre à 2 étudiants : 2 000 yuans / an. Sous réserve de disponibilité, une chambre individuelle : 2 500 yuans / an.	Carte bancaire Union pay	Les étudiants peuvent payer les dortoirs pour l'année complète dès le début de l'année universitaire
4	Assurance maladie 保险	3 200 yuans / 4 ans	Les étudiants peuvent payer eux- mêmes en ligne via <a href="https://www.lxbx.net/">https://www.lxbx.net/</a> ou le campus peut d'abord facturer et transférer sur le compte bancaire de la compagnie d'assurance	Les étudiants doivent payer avant leur entrée en Chine, car l'assurance doit être valide lorsqu'ils viennent en Chine
5	Examen médical 体检	389,5 yuans pour l'examen physique d'entrée (obligatoire) 150 yuans pour le test de drogue urinaire (si nous en avons besoin) 360 yuans pour le test de drogue via les cheveux (si nous en avons besoin)	En espèces / Alipay / Wechat / Union Pay	Si le matériel d'examen médical d'un étudiant (effectué dans son pays d'origine au cours des six derniers mois) est entièrement conforme aux exigences de la Chine, les frais d'authentification seront supprimés. Cependant, l'élève doit apporter : - les copies originales de tous les rapports médicaux ; - L'original, signé et tamponné du formulaire d'examen physique des étrangers. Si les dossiers médicaux contiennent des éléments manquants ou des documents incomplets, l'étudiant doit subir un nouvel examen.
6	Visa de résident 申请居留签证费用	Moins d'un an : 400 yuans Un à trois ans : 800 yuans Plus de trois ans : 1000 yuans	En espèces/Alipay/Union Pay Alipay est recommandé	Il existe une procédure rapide (permettant d'obtenir le visa avant les congés d'octobre typiquement) coûtant 600 yuans / an

# Applications - Eligibility

## Eligibility:

- Applicants must be non-chinese citizens with a valid passport and meet the conditions set by the document n° 12 (2020) of Ministry of Education of P.R.China:
  - Applicants whose both or one of parents is a Chinese citizen, having foreign nationality at birth and not having Chinese nationality, must have valid passport or citizenship documents dating from before April 30, 2021
  - Applicants whose both or one of parents is a Chinese citizen, having foreign nationality at birth and not having Chinese nationality, must have proof of residence abroad of at least 2 years between April 30, 2021 & April 30, 2025 (9 months of residence abroad may be considered for 1 year)
- Applicants must have attained a senior high school degree (Baccalauréat)





# Applications – How to apply

You are welcome to join ZFAI:

## How to apply:

- send a message of interest to [zfai@buaa.edu.cn](mailto:zfai@buaa.edu.cn)
- The required documents for application are:
  - Transcripts of marks (première and terminale)
  - Curriculum Vitae
  - Letter of motivation
  - Copy of Passport
  - For Applicants whose both or one of parents is a Chinese citizen
    - ✓ Valid passport or citizenships documents dating from before April 30, 2021
    - ✓ Birth certificate and proof of nationality of both parents at applicant's birth time
    - ✓ Proof of residence abroad for at least 2 years between April 30, 2021 and April 30, 2025 (9 months of residence abroad may be considered as one year)

Your application will be studied by an internal committee – Reply before end of May 2025





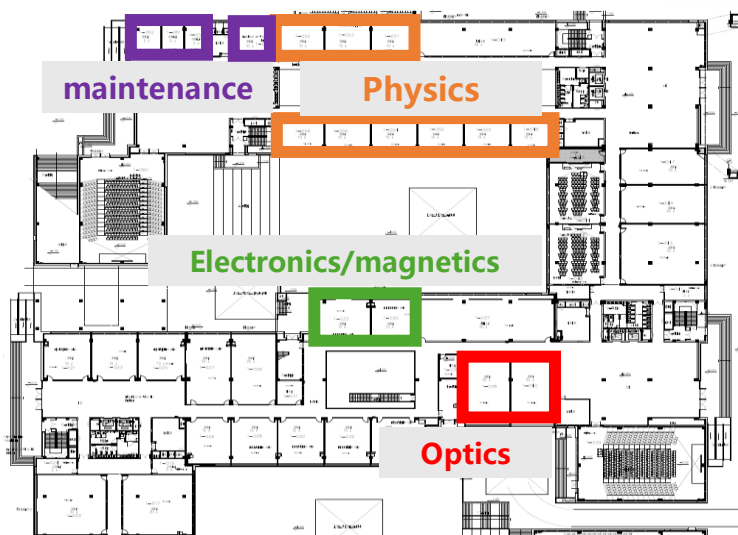
# Research and Education Platforms

## Physics Laboratory

General Physics | Electronics | Magnetics | Mechanics | Optics



**Location:**  
**R1**



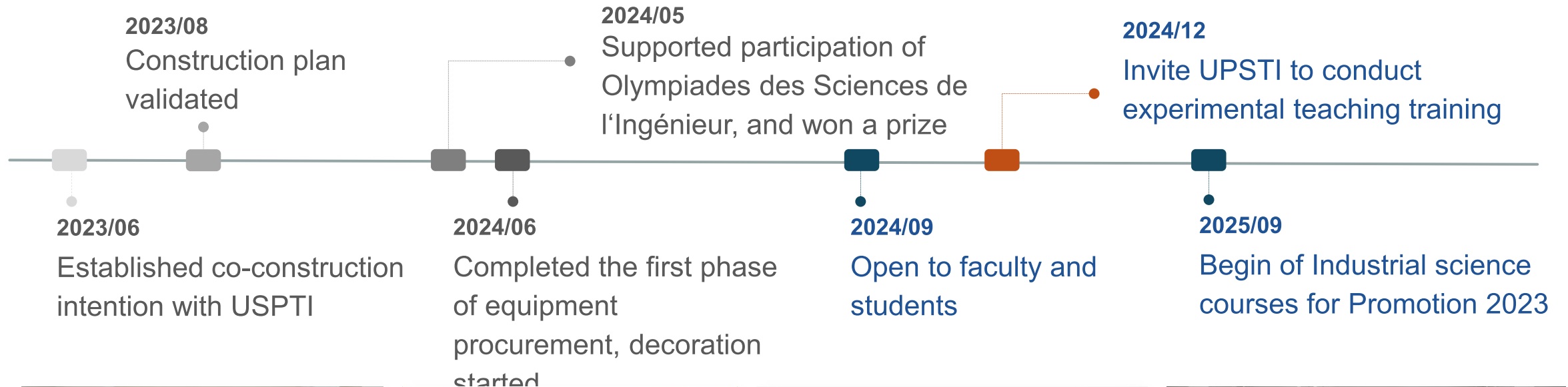
**Experiments ready to be conducted in the first operating year:**

- Use of basic electronic instruments
- Study of passive filters
- Study of linear circuits of operational amplifiers
- Study of nonlinear circuits of operational amplifiers
- WIEN oscillators
- Amplitude modulators, amplitude demodulators, peak detectors, synchronous detectors
- Relaxation oscillators
- Spectrum analysis



# Research and Education Platforms

## Laboratory of Industrial Science







# Research and Education Platforms

## ZFAI-Dassault Education Center of Excellence

### SMART AVIATION CENTER (SAC)

**A1**

**SMART**  
**AIRWORTHINESS**  
**CERTIFICATION**

**A2**

**SMART**  
**AIRCRAFT**  
**MAINTENANCE**

**A3**

**SMART**  
**AIRLINES**  
**PROGRAMMING**

**A4**

**SMART**  
**AIR TRAFFIC**  
**CONTROL**

**A5**

**SMART**  
**AIRPORT**  
**MANAGEMENT**

**A6**

**SMART**  
**LOW-ALTITUDE**  
**TRAFFIC**

### AI + DASSAULT 3DE PLATFORM



#### • Work plan

##### For Undergraduate Students

- Experience courses: design + 3D print
- Practice courses: design an UAV in a group + flying verification



##### For Postgraduate Students

- Design practice courses: UAV swarm design
- ATM and operation practice courses: operation management



##### For Company Engineers

- Theoretical courses: MBSE method, FEA method, flight dynamics
- Simulation courses: CATIA, SIMULIA
- Practice courses: Design, airworthiness, reliability, airport management



**2023.10.20**  
**Signing MOU with**  
**Dassault China**



**2023.11.2**  
**Construction Planning**



**2024.3.21**  
**Start Operating Officially**

# A network of industrial partners in development



# Students Activities

## An immersive environment for the development of students

I  
N  
T  
E  
R  
C  
O  
N  
N  
E  
C  
T

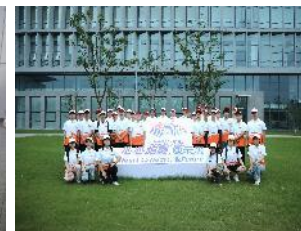
Fireside chats with students by  
President WANG Yunpeng and  
the INSA delegation



I  
N  
T  
E  
R  
N  
S  
H  
I  
P

Volunteering opportunities for:

**Liangzhu Museum**  
**China National Archives of Publications and Culture**  
**West Railway Station**  
**Asian Olympic Games**



I  
N  
N  
O  
V  
A  
T  
I  
O  
N

34th FENG RU competition

**67** participating projects

**1** special prize in creativity sub-group

**1** first prize, **4** second prize, **10** third prize

2024 Olympiades des Sciences de l'Ingénieur

**3** groups entering the final

**1** group awarded **"Prix de la Gestion Energétique"** (  
WANG Shukai, FENG Sirui, SUN Lin, LUO Chen)



I  
N  
T  
E  
R  
N  
A  
T  
I  
O  
N  
A  
L



International Cultural Experience  
Workshop



Drama club



Singing competition



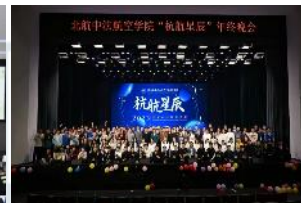
ESCP Exchange



Exchange with HK  
students



Poetry Knowledge  
competition



Year-End Gala



RUN festival



# Students Activities

## Summer Schools oriented towards various research fields

### July 10-18: 2024 Digital Twin and Aviation Safety Summer School

Totally **37** students,  
**22** from foreign countries,  
**14** from ENAC;  
**21** PhD students  
from **9** universities.



Totally **12** lecture speakers,  
**4** professors;  
**3** senior experts;  
From **4** different countries.  
**23** volunteers



Visit to Dassault Systèmes  
in Shanghai



Liangzhu Heritage Museum



West Lake

**24h** of Theoretical Courses  
**12h** of Practical Courses  
**12h** of Cultural Workshop

### Other Summer Schools to come in the next month:

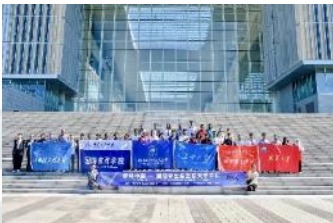
④ Aug. 1-7: Summer School on Quantum Many Body Physics

⑤ Aug.: Advanced Intelligent Technology Summer School

⑥ Aug. 5-20: International Terahertz Summer School

### July 4-6: 2024 International Student Aerospace Academic Seminar

**29 international** students



### July 9-21: Summer class at School of Automation Science

**34 ZFAI** students attending in Beijing





谢 谢!  
Thank you!

