



Master Program of Rail Transit Electrification and Information Technology





Academic Education Programs Sponsored by the Ministry of Commerce of the People's Republic of China

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I. Overview
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# (I) Introduction to Program

### 1. Profile

With the support of foreign aid funds granted by Chinese government, the Academic Education Programs Sponsored by the Ministry of Commerce of the People's Republic of China was initiated by the Ministry of Commerce in 2008. The Program is committed to training high-end, versatile and application-oriented talents in politics, economy and trade, foreign affairs, agriculture, science, education, culture, health, energy, traffic, public management and other fields for recipient countries in a bid to boost their economic and social development through education. The programs include one-year master's degree program, two-year master's degree program and three-year doctoral degree program, and mainly sponsors in-service officials from governmental departments, researchers from academic institutions and management professionals in relevant fields from recipient countries who pursue their English-taught master and doctoral degree education in China. Owing to the short duration of schooling, a bachelor's degree and a certain period of work experience in relevant fields are a prerequisite to ensure students to closely follow the instructors and timely make full sense of the lessons; the good health is another prerequisite to gear them to fast-paced learning mode and ensure them to achieve the degree.

Since its commencement in 2008, the programs have enrolled and trained 1,695 students from developing countries among which, apart from those who are at school, 835 have achieved the master's degree and gone back home. Through their work in relevant fields, those returnees have played an increasingly important role in economic and trade cooperation and development between China and their respective countries and been treasured by governments.

The program undertaken by Southwest Jiaotong University (SWJTU) aims to cultivate high-level, versatile, and application-oriented specialists in rail transit electrification and information technology and its related fields. Through classroom teaching, students can better grasp the basic theory and professional knowledge of the subject, broaden their knowledge and improve their international perspective. The program also combines internship visits, case discussions, research practice, and other teaching methods to develop students' leadership, analytical and practical problem-solving skills, and good communication skills. Through the course, students are able to draw on the successful experiences and failures in the area of rail transit electrification and information technology in China, and fully grasp the modern techniques, methods, and practical skills to engage in rail transportation planning and management, thus meeting the needs of modern transportation development.

In view of the good effect the programs exert on economic and trade cooperation and friendly relationship, the Ministry of Commerce of the People's Republic of China will continue to increase enrollments and improve teaching quality. To the best of our belief, students under the programs who have achieved their degree are bound to embrace an even brighter future.

### 2. Entry Requirements

Governmental officials on or above department level, heads of academic institutions on or above director level, or administration staff with equal title from higher education institutions.

### 3. Program Objectives

The Master's Program in Rail Transit Electrification and Information Technology intends to cultivate high-level applied and versatile engineering and engineering management talents, innovative talents with broad theories in rail transit electrification and information technology, systematic expertise in this discipline, and the ability to undertake complex work. Specific Objectives:

- 1) To systematically and thoroughly master the basic theories and expertise in the field of rail transit power supply, traction drive, and other rail transit equipment technology and application. To understand the current situation, development direction, and international frontier of the discipline.
- 2) To understand the application of new technologies, methods, materials, and equipment in the field of rail transit electrification and information technology. To develop the ability to independently engage in engineering design, engineering practice, engineering research, engineering development, and engineering management in the specific direction of the training field. Be able to flexibly apply professional basic theories and expertise to creatively solve practical engineering problems.
- 3) To develop organizational and management skills in professional engineering work.

### 4. Enrollment Scheme

### Major

Master of Rail Transit Electrification and Information Technology

### Duration of Schooling

The duration of schooling for master students is two years, including one year for curriculum learning and another for writing thesis.

### Instruction Language

The teaching language is English.

### Number of Enrollments

20

### 5. Scholarship Coverage

- (1) Students are exempt from tuition fee, teaching material fee, research and survey fee, allowance of English-taught program, dissertation guidance fee;
- (2) Free on-campus accommodation;
- (3) Monthly stipend: 36000RMB per year per master student, 42000RMB per year per PhD student;
- (4) One-off resettlement fee: 3000RMB per person;
- (5) Free medical insurance for international students;
- (6) One-time round-trip international airfare for all the students (First time fly to China after enrollment, and Fly





back to home country while graduation), and a maximum of "n-1" ("n" is for the length of schooling year which is set while the student was enrolled by the program, "n" is maximally to three) round-trip international airfares for home visits (one time per year set at the end of an academic year):

- (7) The annual review is compulsory for all students. Those who pass the review may continue to enjoy full scholarships in the next year.
- (8) Other expenses shall be managed and used by the Ministry of Commerce or the universities as a whole, and shall not be distributed to students. The Ministry of Commerce only provides students with financial assistance within their enrolled academic duration. Students who postpone their graduation will not receive the continuing sponsorship.

# (II). Introduction to SWJTU

### 1. Profile

Southwest Jiaotong University (SWJTU) is a national key university with graduate school directly under the State Ministry of Education, and also a research-oriented university listed among the "Double First-Class Initiative" "211 Project", "985 Innovative Platforms for Key Disciplines Project" and "2011 Plan", and equipped with the Graduate School. It is located at Chengdu, which is both a historical city and a national center city.

Founded in 1896, SWJTU is one of the first institutions of higher education in engineering in China, and is the home to Chinese higher education in civil engineering, traffic engineering and mining & metallurgical engineering. At present, the university has three campuses -- Jiuli Campus and Xipu Campus, as the main campuses, and Emei Campus, covering an area of over 333 hectares.

The university is expert in engineering, has built a fully-fledged training system throughout engineering, science, liberal art and biology with 26 schools, 1 Sino-foreign cooperative school, 1 affiliated hospital (Chengdu No. 3 People's Hospital), and 2 graduate schools in other cities (Qingdao Graduate School and Tangshan Graduate School). It has co-built a Medical School with the Chengdu Military General Hospital, and has Mechanical Engineering and the Traffic and Transportation Engineering as the first-level national key disciplines, and 10 majors such as the Vehicle Engineering and the Bridge and Tunnel Engineering as the second-level national key disciplines. Besides, it has 18 Doctoral Degree Programs for first-level disciplines, 41 Master Degree Programs for first-level disciplines, and 11 centers for post-doctoral studies. Its Traffic and Transportation Engineering ranks the first (A+) throughout China, and is incorporated into the building sequence of "Double First-Class Initiative"; its Civil Engineering ranks the seventh (A-) throughout China; its Material Science, Engineering Science and Computer Science have ranked the top 1% among the ESI Subject Rankings.

Established with 13 national scientific and technological innovation platforms and 36 provincial and ministerial scientific research bases such as the State Laboratory of Rail Transit and the State Key Laboratory of Traction Power, the university has built the most complete discipline system, talent system and scientific research system in the rail transit field in the world. Focusing on high-speed railway, maglev transportation, new urban rail, vacuum pipeline super high speed and super high-speed train, the university has carried out basic research and original innovation, and has developed into a basic research system of railway large system dynamics marked by the world-recognized "Shen's Theory" and "Zhai-Sun Model", with its scientific and technological achievements selected into the "Top Ten Scientific and Technological Progresses of Chinese Universities" for four times. The total number of national science and technology awards obtained by the university in the field of rail

transit ranks first among universities, research institutes and industrial enterprises in the whole country, making an indelible contribution to the development of China's rail transit industry. Furthermore, the university has achieved many important achievements in the fields such as national defense science and technology, intelligent manufacturing, biological medicine, big data, physical science, humanities and social sciences.

The university now has more than 2,700 full-time teachers, including 10 academicians of Chinese Academy of Sciences (including double appointment), 17 academicians of Chinese Academy of Engineering (including double appointment), 8 national-level teaching groups, 6 national-level outstanding teachers, and 6 innovation teams at the level of the Ministry of Education. Moreover, the university also employed 50 academicians of Chinese Academy of Sciences and Chinese Academy of Engineering, as well as Nobel Prize winners as the parttime (honorary) professors.

The university has 28,914 full-time undergraduates, 15,053 postgraduates, 2,630 doctoral students, and 536 international students. It has obtained 29 national-level teaching achievement awards, including 1 special award and 6 first awards. It has set up 36 national-level excellent courses, 24 national-level excellent resource sharing courses, and 8 national-level excellent video open courses.

The university adheres to the internationalized schooling pattern, and has signed cooperation agreements with 211 universities and research institutions in 59 countries and regions such as the University of Illinois at Urbana-Champaign, the Polytechnic University of Milan, and the Russian Communications University. It also has established the "SWJTU-Leeds Joint School" with the University of Leeds. The study abroad, overseas study tour, and academic visit programs such as "2+2", "Bachelor and Master 4+1" and "Sino-France 4+4" cover all grades. As a university designated by the Chinese government, it helped the establishment of the Indian Railway University with the Indian Railway. The university has set up 6 national-level innovation and intelligence introduction bases approved by the State Bureau of Foreign Experts Affairs and has founded 3 international academic journals.

### 2. Introduction to the undertaking school

The School of Electrical Engineering has strong academic strength, with five departments: Electrotechnic and Electronic Engineering, Power Engineering, Power Electronics and Electrical Drives, Electronic and Information Engineering, and Urban Rail Transportation Electrification. It has National Rail Transit Electrification and Automation Engineering Technique Research Center, Talent Introduction Base for Rail Transit Electrification and Automation Innovation (111 Talent Introduction Base), Elementary Lab Center of Electrical Engineering - State Lab Teaching Demo Center, Virtual Simulation Lab and Teaching Center for the National Rail Transit Electrification and Automation, Key Laboratory of Magnetic Suspension Technology and Maglev Train of the Ministry of Education, Key Laboratory of Railways Electrification and Automation of the Ministry of Railways, Key Laboratory of Maglev Train and Magnetic Force Application Engineering of Sichuan Province, Sichuan Urban Rail Transit Energy Conversion and Control Engineering Lab (Co-built), Sichuan Engineering Center for Fuel Cell Technology Research (Co-built), Laboratory Center of Electrical Engineering, and Laboratory of Traction Power Supply Function of Rail Transit, an important part of State Key Laboratory of Traction Power. In collaboration with organizations such as China Railway Rolling Stock Corporation Zhuzhou Institute, and Sichuan Changhong Electric Co., Ltd., the School has established a national engineering practice education center to jointly promote the School's teaching, research, talent training, and the development of the industry.

The School has the right to confer doctoral and master's degrees in two first-level disciplines of Electrical Engineering, and Control Science and Engineering. It has a National Key Discipline of Power System and





Automation, a National Key Discipline (Foster) of Power Electronics and Electrical Drives, two Sichuan Provincial Key Disciplines of Electrical Engineering, and Control Science and Engineering. The School has three major undergraduate programs in Electrical Engineering and Automation, Electronic Information Engineering, and Electrical Engineering and Intelligent Control. Among them, Electrical Engineering and Automation is a national key major, a national specialty major and a major for cultivating excellent engineers, and has passed the national engineering education accreditation, while Electronic Information Engineering is a national specialty major and a major for cultivating excellent engineers. It has a post-doctoral research station for electrical engineering and established a complete Bachelor-Master-PhD training system.

The School now has 2,371 undergraduates, 1053 graduate students, and 235 doctoral students. The School abounds in prominent teacher resources, with 278 faculty members (231 full-time faculty members), including 51 professors (researchers), 95 associate professors (associate researchers, senior engineers, etc.), 57 doctoral supervisors, and 145 master supervisors. Among them, there are 2 Academicians of the Chinese Academy of Engineering (1 double-employed), 1 IEEE Fellow, 7 IET Fellows, 1 recipient of Ho Leung Ho Lee Foundation Award, 1 recipient of Zhan Tianyou Award, 4 winners of National QR Program/Distinguished Young Scholars Program/Yangtze River Scholars Program/Ten Thousand Leading Talents Program, 4 winners of Thousand Young Talents Program/Youth Top Talents Program/Young Yangtze River Scholars Program/Excellent Young Scientists Fund. The School has 2 national-level outstanding teachers and 15 recipients of the special allowance awarded by the State Council. The School has one national quality online open course, two national quality resource sharing courses, four national quality courses, one national video open course, four Sichuan provincial quality online open courses, and six Sichuan provincial quality courses.

### 3. An introduction to the living environment and conditions of students

SWJTU consists of three campuses, of which the major one is located in Pixian County, Chengdu, a place boasting enchanting environment. The overseas students apartment built around the lake is an independent high-rise apartment, where provides a comfortable and quiet living environment for overseas students in our school. Apart from the individual bedroom, a living room, a kitchen, and a bathroom, each suite is fitted with an air condition, a television, a micro-wave oven, an induction cooker, and so on.

# (III). Teaching Schedule

### 1. Course Arrangement

Course Category	Course Name	Credits	Semester	College	Required Credits	Notes
	Elementary Chinese	4	I	School of Foreign Languages		
Public	Intermediate Chinese	4	181	School of Foreign Languages	8	
Course	Advanced Chinese	4	II	School of Foreign Languages		
	China Overview	2	I	School of Foreign Languages	2	
Professional Courses	Advanced Analysis of Power System	3	I	School of Electrical Engineering		
	Theory and Technology of Traction Power Supply System	3	II	School of Electrical Engineering	9	
	Modern Power Electronics and Electrical Drives	3	II	School of Electrical Engineering		

### **Training Links:**

Training Sessions	Credits	Requirements	Notes
Academic Activity	2	Students should attend at least 10 academic reports including 2 reports given by students as speakers. Students should write a summary of not less than 500 words for every report.	
Research Group Seminars	3	Students should attend at least 10 times of research group seminars and fill in recording forms.	
Literature Reading and Review	2	Students should read at least 10 high-level literatures related to the discipline and write a summary for each literature.	
Thesis Proposal	2	Thesis proposal should generally be completed in the third semester.	





### 2. Teaching Methods

The school adopts flexible and diverse teaching methods, such as classroom teaching, experiential learning, case discussion and simulation training.

### 3. Semester Schedule

Date of Starting School	Every early September	Please refer to the Letter of Admission for scheduled dates.
Enrollment	Every late August	Please refer to the Letter of Admission for scheduled dates.
Vacations	Every July and January	Summer vacation: every mid-July to late August Winter vacation: every mid-January to late February
Graduation	Every June	Specific dates subjected to the schedule of the college.

### 4. Graduate Dissertation

### (1) Topics

Topics should have critical application value or theoretical significance in the development of national economy and be related to the scientific research projects of supervisors as much as possible. Topics shall be selected after the discussion with supervisors and demonstration.

#### (2) Dissertation Proposal

Postgraduates generally shall accomplish dissertation proposal during the third semester. Opinions should be widely solicited in the dissertation proposal meeting and topics will be determined after the approval of experts in relative subjects

Dissertation proposal should include the development and trend of intended topics at home and abroad, the purpose and significance of the topics, the research contents and methodology, hypothesis, dissertation schedule, and the requisite conditions for the research.

### (3) Dissertation Working Plan

Postgraduates' dissertation working plan shall be formulated under the guidance of supervisors. The arrangement and demonstration of research methodology, experiment scheme and methods, expenditure and equipment, paper writing, deadline for completion and expected results should be elaborated in the working plan.

(4) The evaluation and defense of dissertation and the degree awarding is subject to the relevant provisions of Southwest Jiaotong University.

#### 5. Degree Awarding

Postgraduates who have obtained required credits, passed all the examinations, and successfully accomplished dissertation and defense will be awarded master's degree after the review by the Academic Degree Evaluation Committee of Southwest Jiaotong University.



# (I) Application Requirements

- 1. The applicant must be a foreign national with valid passport, obeying the laws and regulations of the People's Republic of China and the rules and regulations of Southwest Jiaotong University and respecting the tradition and habits of China.
- 2. The applicant shall have obtained bachelor's degree with relatively high English proficiency and over 3-year working experience. And the applicant shall be 45 years old at most and qualified for the major requirements of the enrollment information of intended university.
- 3. The applicant shall be governmental officials at director's level and above, academic researchers and managers of middle-level and above, and managers of middle-level and above in relevant fields.
- 4. The applicant shall have good command of English, and is able to use English for professional courses. Non-native English speakers must hold excellent English skills of listening, speaking, reading and writing and are able to smoothly communicate specialized research with the supervisors and finish the study in English. Please provide the copy of TOFEL, IELTS or other English skill certificate if the applicant has.
- 5. The applicant shall be in good health, without diseases with which entry to China is disallowed by China's laws and regulations, without severe chronic diseases such as serious high blood pressure, cardiovascular/cerebrovascular diseases and diabetes, mental diseases or epidemic diseases that are likely to cause serious threat to public health; the applicant shall not be in the process of recovering after a major operation or in the process of acute diseases or seriously disabled or pregnant.
- 6. Spouse or relatives of the applicant shall not be taken to China.
- 7. Students who are already studying in China or have been admitted to other Chinese government scholarship programs are not allowed to apply.
- 8. The applicant must be introduced by the Embassy of the PRC in the host country.



# (II) Application Procedure

### 1. Application for Admission

### (1) Procedures:

- Applicants need to fill out the electronic edition of the "2022 Application Form of Master Program in Rail Transit Electrification and Information Technology in Southwest Jiaotong University for Underdeveloped Countries", print out the entirely completed form and sign your name and date.
- Electronic editions of all the application materials should be submitted by email (huangyiling@swjtu.edu.cn) or by fax (+86-28-66366346) to the International Students Office, Southwest Jiaotong University.
- Note: The print version of all the application materials should be submitted to the School of International Education, Southwest Jiaotong University for registration after enrollment.
- Applicants can enter the Chinese Government Scholarship Information System of China Scholarship Council: https://studyinchina.csc.edu.cn/#/login to apply for scholarships online in the "Chinese Government Scholarships".

### (2) Notes:

- A. The electronic form filled online should be printed out and manually signed with name and date.
- B. Appropriate sized bareheaded photo (or passport photo) should be affixed to the specified location of the printed form.
- C. The fund source should be the Scholarship of the Ministry of Commerce of PRC.

### 2. Scholarship Application

### (1) Procedures:

The applicant shall enter the Chinese Government Scholarship Information System (https://studyinchina.csc.edu.cn/#/login). After registration, the applicant should click "Online Application" and "Chinese Government Scholarships" in turn to enter the application page and fill in the information of university, major and personal details according to the instructions. The completed Application Form of Chinese Government Scholarships should be printed out, manually signed with name and affixed by photo.

### (2) Notes:

- A. The online application type is Type B.
- B. The Agency Number of Southwest Jiaotong University is 10613. The discipline category is "Engineering" and the major is oriented in "Rail Transit Electrification and Information Technology".
- C. CSC Number generated in the form is used for the Visa Application for Study in China (JW201 Form).

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### 3. Material Preparation

A whole set of the application materials is required. Please read carefully and prepare the application materials as required. Incomplete materials will not be accepted.

Appl	ication materials	Requirements	Original	Сору
1	Application Form	All the information must be filled out in the electronic edition of the "2022 Application Form of Master Program in Rail Transit Electrification and Information Technology in Southwest Jiaotong University for Underdeveloped Countries". Name and date must be manually signed on the printed form.	1	1
2	Graduation Certificate and Degree Certificate	<ol> <li>Graduation Certificate and Degree Certificate must be original or the notarized Chinese or English copy.</li> <li>For current students, the certificate with expected date of graduation issued by the school is required.</li> </ol>	1	1
3	Official Transcripts	The transcripts must be the Chinese or English original or notarized Chinese or English copy.     The transcripts must cover all the studied courses and the final results.	1	1
4	Personal Statement	The word limit of personal statement is 1500 words. The statement should include the academic background, the working experience and achievements related to the applied major, the study and research plan for the master degree and the development objectives after graduation.	1	1
5	Resume	The resume shall be written in English.	1	
6	Recommendat ion Letter	<ol> <li>Two recommendation letters from the government, regional education administrative departments, universities, or senior officials of the country which the applicant is from are required.</li> <li>The recommendation letter must be Chinese or English original.</li> </ol>	2	2
7	English Proficiency Certificate	Applicants who is not native English speaker or taught in English in undergraduate courses shall submit English proficiency certificate.	1	1
8	Valid Passport Copy	The passport must be general passport and valid at least for 6 months.  Note: The passport held by all the enrolled candidates for entering China and entrance registration must be identical with the original of the copy.	0	1
9	Recent Passport Photo	One photo attached to the application form.	2	0
10	Foreigner Physical Examination Form	1. The original copy should be kept by the applicant. The form is uniformly printed by Chinese healthy quarantine departments. It must be written in English. The physical examinations must cover all items listed in the form. Incomplete forms or forms without the signature of the attending physician, or the official stamp of the hospital, or a sealed photograph of the applicant are considered as invalid.  2. Please carefully plan your physical examination schedule as the result is valid for only 6 months.	1	1
11	Non-Criminal Record Report	The applicant shall submit a valid certificate of Non-Criminal Record issued by the local public security authority, usually issued within 3 months prior to the submission date of the application.	1	1

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### Key Notes:

- (1) All the submitted materials shall be written (printed) in Chinese or English. Non-English or Non-Chinese documents shall be submitted with notarized Chinese or English translated copies.
- (2) Originals and copies of important documents, such as Graduation Certificate, Degree Certificate, Academic Transcripts, Language Proficiency Certificate, Foreigner Physical Examination Form and Non-Criminal Record Report shall be submitted for the verification by Economy and Commerce of Chinese Embassy. After the review by the officer of Economy and Commerce of Chinese Embassy, the applicants should scan the applications and send them to the contact person of university.
- (3) All the paper documents (originals and copies) shall be reclaimed and kept after the verification by Economy and Commerce of Chinese Embassy. The paper documents shall be taken to China and submitted to the assigned departments of the university for verification and filing once you are admitted.
- (4) All the application materials are not returned.

### 4. Application Submission

- (1) Please submit the originals and scanned electronic copies mentioned in the Step 1-3 above to the Economy and Commerce of Chinese Embassy in the host country. The addresses and contacts of all the Economy and Commerce can be reached out in the official website (English version) of Academy for International Business Officials (AIBO) of the Ministry of Commerce of PRC: http://www.china-aibo.cn/.
- (2) Written request for the recommendation letter of the Economy and Commerce are required. Whether the planned enrollment figure of applied university is run out, whether accept the same or similar major of different university, and other relevant information shall be demonstrated in the written request.

# (III) Deadline

The deadline of receiving materials is May 20, 2022.

All the materials arrive after the deadline will not be accepted.



# (I) Contact

Contact persons of the university

Name: HUANG Yiling

Tel.: +86-28-66367381

Fax: +86-28-66366346

E-mail: huangyiling@swjtu.edu.cn

Website: https://en.swjtu.edu.cn

Address: International Students Office, Office of International Cooperation and Exchanges, Comprehensive

Building, Southwest Jiaotong University Xipu Campus, West High-tech Zone, Chengdu, China

# (II) Other Notes

- 1. All the application materials will not be returned no matter what results are.
- 2. The Chinese government will not give any explanation for the results.
- 3. Expenses or fees for spouse's or relatives' visit will not be assumed by Chinese side.
- 4. The procedures and requirements for entering China will be explained in the offer.



# 2022 Application Form of Master Program in Rail Transit Electrification and Information Technology in Southwest Jiaotong University for Underdeveloped Countries

- Please complete the form in English or in Chinese.
- Please complete the form in marker pens.

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Passport N		Inne	Family name:				
		varne	Given name:	Given name:		Photo	
	Chinese N	Chinese Name					FIIOLO
Gender:	Gender: Nationality:		Married:	Single:			
Passport No. Valid Until		Yr Mon	Date				
Date of Birth Yr Mon D		Date	Place of Birth:	:	Country:	City:	
Religion:		Native Language:					
E		Employer:					
Current		Location:					
Employr	ment	Occupation:					
		Position:					
Tel.:	Fax:			E-mail:			
Permane	Permanent Address:						

### 2. Educational Background (from tertiary education)

### 2.1 Highest Diploma

Name of School	School Location	
Major/Subject	Degree Obtained	
Years Attended(from/to)	Teaching Language	

2.2 Other	Diploma, i	f appl	icab	le
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Name of School	School Location	
Major/Subject	Degree Obtained	
Years Attended(from/to)	Teaching Language	

### 2.3 Other Diploma, if applicable

Name of School	School Location	
Major/Subject	Degree Obtained	
Years Attended(from/to)	Teaching Language	

## 3. Employment Record

Employer	Time (from/to)	Work Engaged	Position Held

### 4. Language Proficiency

4.1 English: Excellent: ☐ Good: ☐ Fair: ☐ Poor: ☐ None: ☐						
4.2 I can be taught in English: Yes□ No□						
4.3 Documents which can show your English level:						

### 5. Family Members

	Name	Age	Occupation	Tel.	E-mail
Spouse					
Father					
Mother					



. Publications and Thesis		
I hereby affirm that		
	ne Chinese government and the rules and regulation stivities in China which are deemed to be adverse to	
Applicant's signature	Date	
The application is invalid without the applicant's s	signature.	

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