2019 MASTER STUDENT ACDEMIC GUIDELINE

Power Engineering (Low Carbon Energy)

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# Welcome to China-UK Low Carbon College

China-UK Low Carbon College was established in May, 2017, thanks to the joint efforts of Shanghai Jiao Tong University (SJTU), the University of Edinburgh (UoE) and other UK universities, as well as Shanghai and Lingang government. As the first domestic low carbon college (LCC), the LCC aims to become a world-class innovative higher education and research institution with international influence, which provides academic programs, executive training, scientific research and industrial incubation.

Green low-carbon development is an inevitable choice for China and the rest of the world to deal with global warming, a challenge that the whole world is facing. The college will concentrate on green development strategy, and carry out teaching and research on low-carbon energy, low-carbon environment, carbon finance, carbon management and low-carbon city etc. The goal of the LCC is to serve as a cradle of talents for low carbon industries and to support the development of low carbon fields with cutting-edge technologies.

With the support from people in all walks of life, we are determined to develop the college as a first-class, industry-oriented and discipline-based institution. We strongly welcome Chinese and international young professionals and students who are interested in low carbon fields to join our program.

# Welcome to Join Us

You have chosen to enrich your academic knowledge and gain new experiences by studying in master program at LCC of SJTU. We are sure that you will have challenges as well as exciting opportunities during your stay at LCC.

This guidebook is to provide you with the practical information that you will need at SJTU. It also provides you with contact information of related offices that you might find useful during your stay here.

Welcome on board! We wish you the best of luck with your study, and hope that your experience at LCC will be very special, pleasant, and valuable!

**China-UK Low Carbon College**

**Shanghai Jiao Tong University**

# Programme Overview

Founded in 1913, this discipline began to recruit graduate students in 1956 and was one of the first the grant master’s and doctor’ degree. There are 7 research institutes including engineering thermal physics, impeller machinery, intermarry combustion engine, automotive electronic technology, thermal engineering, vibration impact noise, refrigeration and low temperature. A national key laboratory, a key laboratory of the ministry of education and an engineering research Centre of the ministry of education; currently, there are ‘power engineering and engineering thermal physics’ national key first-level point, master’s point and ‘power engineering and engineering thermal physics’ first level discipline doctoral point, master’s point and six second-level discipline doctoral point, master’s point, and ‘power engineering and engineering thermal physics’ postdoctoral mobile station. This discipline has a strong faculty, including 45 professors (40 doctoral supervisors), 53 associate professors.

# Programme Duration

Students are supposed to finish their study within 2.5 years. In the first year, students study at LCC of SJTU and can apply to study at the UoE during the second year if they meet its entry requirements. In the final half year, students are required to finish their thesis in SJTU.

# Degree Requirements

Students are required to acquire at least 30 credits, including 19 credits in GPA courses. If final GPA points are no less than 2.7, students are allowed to start writing their research proposal. Courses are required to finish in the first year in principle.

Students who are admitted to study at the UoE in the second year should finish relevant courses as required.

**Dissertation**

1. The school of Mechanical Engineering in SJTU emphasizes applicability and practicability of the dissertation, as a result, students’ dissertation directions are supposed to stem from the practical experience or enterprises. If students pass the dissertation defence, they can get a master degree from SJTU.
2. Students who study in the UoE in the second year need to meet the requirements UoE makes.

# Degree and Diploma

Students will be awarded a graduation diploma and a master degree from SJTU and UoE if they successfully complete the required credits, finish a degree thesis and pass the thesis defence.

# Curriculum(加入课程代码)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Course Module** | **Course Title** | **Course Code** | **Class Hours** | **Credit** | **Semester** | **NOTE** |
| General Fundamental Courses | English for Academic Purposes | FL28002 | 32 | 2 | 1,2 | Compulsory Courses (at least 7 credits) |
| Chinese Language | CN16001 | 32 | 2 | 1,2 |
| Introduction to Chinese Culture | G090510 | 32 | 2 | 1,2 |
| Academic Writing, Standards and Ethic | GS00001 | 16 | 1 | 2 |
| Discipline Fundamental Courses | Numerical Analysis | G071503 | 48 | 3 | 1 | Choose ***two*** out of the ***five*** courses（at least 5 credits） |
| Fundamentals and Theory for Optimization Methods | G071559 | 48 | 3 | 1 |
| Mathematical-Physical Equation | G071507 | 48 | 3 | 1 |
| Matrix Theory | G071555 | 48 | 3 | 1 |
| Fundamental Mathematical Statistics | MA26005 | 48 | 3 | 1 |
| Advanced Engineering Thermodynamics | EP26003 | 48 | 3 | 1,2 | At least 6 credits |
| Advanced Heat Transfer | PO6012 | 48 | 3 | 1,2 |
| Advanced Fluid Dynamics in Engineering | EP26001 | 48 | 3 | 1,2 |
| Advanced Combustion Theory | EP26013 | 48 | 3 | 1,2 |
| New Energy Systems | PO6020 | 48 | 3 | 1 |
| Basic Principles of Sensors and Mechanical Measurement Systems | ME26001 | 48 | 3 | 1,2 |
| Discipline Frontier Courses | Seminar | ME6038 | 16 | 1 | 1,2 | **Seminar** is compulsory. You need to complete **Environmental Economics** before choose **Carbon Economics**（at least 7 credits ） |
| Carbon Accounting | EU26008 | 32 | 2 | 3 |
| Carbon Economics | EU26009 | 32 | 2 | 3 |
| Business and Climate Change | EU26010 | 32 | 2 | 4 |
| Low Carbon Energy and Climate Change | EU26022 | 32 | 2 | 1 |
| Advanced Carbon Cycle Science and Technology | F160520 | 32 | 2 | 2 |
| Decision-Making for Low Carbon Management | EU26021 | 32 | 2 | 1 |
| Discipline Optional Courses | Practice in Specialty | E160511 | 48 | 3 | Summer | **Practice in Specialty** is complusoryAt least 4 credits |
| Carbon Resources Cycle | EU26001 | 32 | 2 | 4 |
| Energy Clean and Cascade Utilization | PO6008 | 48 | 3 | 4 |
| Analysis of Energy Utilization Systems | PO6007 | 48 | 3 | 3 |
| Environmental Economics | EU26006 | 32 | 2 | Fall |
| Building Energy Saving and Solar Energy Utilization | PO6021 | 48 | 3 | Spring |
| Combustion and Emission Control in Internal Combustion Engine | PO6027 | 48 | 3 | Fall |
| Gas Turbine Combustion Theory | EP26087 | 48 | 3 | 1 |
| Cities and Sustainability: The urban as a vehicle for low carbon transitions | EU26018 | 32 | 2 | 2 |
| Geology for Earth Resources | EU26019 | 16 | 1 | 1 |
| Petroleum Geology for GeoEnergy | EU26020 | 16 | 1 | 1 |

**Seminar**

Every student should attend ten academic lectures. This must be completed within the first two semesters. Low-carbon field experts will be welcomed to give speeches, and students should take notes in the designated Record Book (with green cover page). The record book and a summary report（no less than 3000 words）should be handed before the end of the second semester (around mid-June) to be graded for this course.

**Practice in Specialty**

Internship Visa Remark

* Application Documents:

1. The Application Form

2. The Certificate from the Employer

3. Photocopies of your passport photo page and Residence Permit page

4. Registration Form of Temporary Residence

* Procedure: about 5 weeks

Please refer to <https://mp.weixin.qq.com/s/EhKBSza4_DkH0dF1jIyEgQ> for detailed information.

# Course Assessment and Retaking

**Course Assessment**

Courses are assessed in different ways: common written exams as well as various oral, written assignments, case studies, projects, or presentations, etc. Students who fail to attend 2/3 of the lectures are not allowed to attend the final exam, and are not entitled to get the course credit. SJTU graduate courses’ exam-score employs ten grade systems from A to D. The grade table can be shown below:

Grading System for Graduate Students

|  |  |  |
| --- | --- | --- |
| **Chinese Grades** | **Letter Grades** | **Grade Points** |
| 95~100 | A+ | 4 |
| 90~94 | A | 4 |
| 85~89 | A- | 3.7 |
| 82~84 | B+ | 3.3 |
| 78~81 | B | 3 |
| **75~77** | **B-** | **2.7** |
| 71~74 | C+ | 2.3 |
| 67~70 | C | 2 |
| 63~66 | C- | 1.7 |
| 60~62 | D | 1 |
| 0~59 | F (Failure) | 0 |

GPA= ∑(course credit \*point)/∑ course credit

**Note**: Students should follow the teachers’ special requirements of course assessment. Plagiarism is strictly prohibited in LCC and any plagiarism behaviour in course assignment or exam, once found, will be penalized according to the university rule.

**Course Retaking**

A student who has failed a course (including degree & non-degree course) has the right to apply for retake. The students whose average GPA grade is lower than the standard of 2.7 are allowed to retake one or two degree courses which is under B- (not including B-). Students are not allowed to retake the same course more than two times.

To retake the courses, students should fill ‘Shanghai Jiao Tong University Graduate Courses Retaking Application Form’ and submit to Teaching Administration Office within two weeks after the beginning of every semester.

# Double-master Programme

**University of Edinburgh (UoE) Major**

**MSc Carbon Finance**

*Compulsory courses*: Carbon Markets; Carbon and Environmental Accounting; Climate Change and Environmental Policy; Energy Finance; Carbon and Environmental Consulting Project; Low Carbon and Green Investment; Research Methods in Carbon Finance.

*Optional Courses*: Baseline-and-Credit Methods and Applications; Behavioural Finance; Corporate Governance; Global Financial Markets and Emerging Economies; Investment Management; Organising for Social Change: Strategy, Governance & Innovation.

**MSc Carbon Management**

*Compulsory courses*: Business and Climate Change; Carbon Economics; Climate Change Impacts and Adaptation; Applied Carbon Methods; Climate Change Management.

*Optional Courses*: Water Resource Management; Waste Reduction and Recycling; Marine Infrastructure and Environmental Change; Forests and Environment; International Climate Change Law; etc.

**MSc Sustainable Energy System**

*Compulsory courses*: Technologies for Sustainable Energy; Energy and Environmental Economics; Sustainable Energy Contexts; Sustainable Energy Group Design Project.

*Optional Courses*: Electrical Engineering; Fundamentals of Renewable Energy; Mechanical Engineering; Fundamentals of Renewable Energy.

**MSc Applied Geoscience (GeoEnergy)**

*Compulsory courses*: Future GeoEnergy Resources; Applied Hydrogeology and Near surface Geophysics; Hydrogeology 2; Environmental Geochemistry; Project Design and Literature Analysis; Carbon Storage and Monitoring.

*Optional courses*: Ore Mineralogy, Petrology & Geochemistry; Seismic Reflection Interpretation; Environmental Problems and Issues; Nuclear Waste Management: Principles; Policies & Practice.

**MSc Energy, Society and Sustainability**

*Compulsory courses*:Energy and Society I: Key themes and issues; Energy in the Global South; Energy and Society II: Methods and applications; Energy Policy and Politics.

*Optional Courses*: Technologies for Sustainable Energy; Energy and Environmental Economics; Global Environment: Key issues; Global Environmental Politics; etc.

Students who want to apply for the Double-master Programme should meet the language requirements.

# Process Management

|  |  |
| --- | --- |
| **Issue** | **Time** |
| Personal Study Plan | Draw up the personal study plan within the first month of the 1st semester. |
| Enrolment Selection to The University of Edinburgh | The enrolment selection will be processed by the University of Edinburgh in the middle of the 2nd semester. |
| Mid-term Evaluation | The mid-term evaluation will be held at the end of the 3rd semester. Student who failed in the evaluation will not be allowed to start his or her dissertation work. |
| Dissertation Proposal Presentation | The dissertation proposal presentation will be at the end of the 3rd semester. Student who failed in the presentation will have to retake it at the end of the fourth semester. |
| Dissertation Review and Defence | The dissertation defence will be held in the 5th semester (May). Student who failed will have to retake it in the 6th semester (September).  |
| Practice in Specialty | In the summer semester. |

# Important Academic Events

* **Formulate your Personal Study Plan (PSP)**

New students should complete a feasible personal study plan (PSP) within two weeks. After the review and approval by the academic supervisor, the student should submit PSP to Teaching Administration Office to document the file.

**Note**: If the PSP cannot be carried out or cannot be implemented completely due to certain objective conditions such as course cancellation, course adjustment, courses time conflict, etc., students have to fill the table of ‘Shanghai Jiao Tong University Graduate Students Personal Study Plan Revision Application Form’ to apply for the revision. After the review and approval of the application form by the supervisor, student should submit the form to the Teaching Administration Office for documentation.

* **Mid-term Evaluation**

Mid-term Evaluation will be conducted at the end of the 3rd semester. Credits and GPA points are also required to meet the requirements, and students should fill ‘Shanghai Jiao Tong University Graduate Mid-term Evaluation Form’. After the review and approval of the application form by the supervisor, and submit it to Teaching Administration Office.

1. **Basic Requirements**

To pass the mid-term evaluation, students should meet the basic requirements as following:

1. Complete all the required courses in the personal study plan.
2. Both credits of the completed courses and credits of degree courses should meet the degree requirements.
3. Average GPA point should be no less than 2.7.
4. **Assessment standards**

|  |  |  |
| --- | --- | --- |
| **A** | Excellent | **Note:**Students whose assessment results are above B (include B) can go into the internship and dissertation stage.Students whose assessment results are C will be given advices by supervisor and subject leader for remediation.Students whose assessment results are D will be suggested to be withdrawn from the programme. |
| **B** | Qualified |
| **C** | Warning |
| **D** | Unqualified  |

* **Dissertation Proposal**

Students will officially enter the stage of degree dissertation after passing the mid-term evaluation. The dissertation proposal should follow a unified format suggested by the Graduate School, Shanghai Jiao Tong University. Students who studied in UoE in the second academic year could process the dissertation proposal online. The form (no less than 5000 words) includes seven parts as following:

1. Title;
2. The significance of the research;
3. Research objects, research contents and the key problem to be solved;
4. Research methods, technical plan and feasibility analysis;
5. Implications and contributions;
6. Research schedule, progress and expected results;
7. The accumulation of materials and current research results related to this topic.

Students should submit the proposal on time to Teaching Administration Office and prepare the PPT. If the student’s proposal cannot meet the requirements, he/she will be required to resubmit a dissertation proposal.

* **Dissertation Review and Blind Peer Review**

Students are required to check the Repetition rates of their dissertation papers before applying for the degrees.

1. Students should take full responsibilities for the results of the paper repetition checking. However, students are not forced to do the self-checking in advance.
2. Our college will review the dissertation papers according to the repetition results checked by SJTU. Students will be allowed to start the paper reviews only when their repetition rates are below 15%.
3. Two cases can be applied to those students whose repetition rates are higher than or equal to 15%:
4. Students whose repetition rates are higher than or equal to 15% but lower than 25%, will have to suspend their subsequent works and modify their dissertation papers. They will be allowed to restart their subsequent works only when they meet the requirements in 2) within a reasonable period.
5. For the students whose repetition rates are higher than or equal to 25%, a 3-academic group will review their dissertation papers and repetition checking reports to provide a written review report, containing the judgments whether their papers are Plagiarisms or Improper References.
* If their papers are Improper References, the students will have to suspend their subsequent works and modify their dissertation papers. They will be allowed to restart their subsequent works only when they meet the requirements in 2) within a reasonable period.
* If their papers are Plagiarisms, the students will not be able to achieve their degrees.
* **Dissertation Defence**

Dissertation defence will be held in the 5th semester. The college will organize a defence committee composed of three academic experts with associate professor or above titles. The results of dissertation defence will be decided through the secret ballot. Students who get 2/3 votes will pass the dissertation defence and to be recommend to get the master’s degree award. If not, students could modify their dissertations and apply for the dissertation defence again within one year.

**Note**: students who have passed the dissertation defence should submit dissertation and degree application materials on time

* **Academic Degree Auditing and Academic Certificate Acquisition**

The subject and academic degree assessment sub-committee will review the quality of dissertation, defence procedure, academic paper publishing status, and then make decision on awarding the master degree by the secret ballot. Academic degrees meetings are regularly held in March, June, September and December.

Certificate of Master Degree and Certificate of Graduation are available to get in Teaching Administration Office. Please log into <http://lixiao.sjtu.edu.cn> to ensure all necessary leaving procedures are done before you leave the school.

**Note:** Master students should actively engage in academic activities, and meanwhile, abide by the relevant laws and regulations, academic ethics and standards. Details relative to academic norms please see *Academic Norms for Graduates in SJTU*. <http://www.gs.sjtu.edu.cn/policy/fileShow.ahtml?id=66>

# Useful Websites

China-UK Low Carbon College

http://lcc.sjtu.edu.cn/En/Default

Graduate School, Shanghai Jiao Tong University

<http://en.gs.sjtu.edu.cn/>

International Affairs Division

http://global.sjtu.edu.cn/home/indexEn

Student Employment Services& Career Development Centre

<http://scc.sjtu.edu.cn/>

School of Mechnical Engineering

http://me.sjtu.edu.cn/

# Contact

**Teaching Administration Office**

Fu Yilai

Tel: 021-80160861

Email: fuyilai@sjtu.edu.cn

Shi Qing

Tel: 021-80160861

Email: shiqing@sjtu.edu.cn

**Student Office**

Zhang Ying

Tel: TBD

Email: azure@sjtu.edu.cn