**上海交通大学硕士研究生课程教学大纲**

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| 课程基本信息（Course Information） | | | | | | | |
| 课程代码  （Course Code） | EP26013 | \*学时  （Credit Hours） | 48 | \*学分  （Credits） | | 3 | |
| \*课程名称  （Course Name） | （中文）高等燃烧学 | | | | | | |
| （英文）Advanced Combustion | | | | | | |
| 课程性质  (Course Type) | 专业基础课  Discipline Fundamental Course | | | | | | |
| 授课语言  (Language of Instruction) | 英文  English | | | | | | |
| \*开课院系  （School） | 中英国际低碳学院  China-UK Low Carbon College | | | | | | |
| 先修课程  （Prerequisite） | Fundamentals of Thermodynamics (热力学基础)  Chemical Reaction Engineering (化学反应工程)  Calculus (微积分) | | | | | | |
| 授课教师  （Teacher） | 薛渊 | | 课程网址  (Course Webpage) | |  | |
| \*课程简介（Description） | 通过对高等燃烧学的学习，帮助学生建立和完善燃烧学的基本知识，包括反应动力学、层流火焰、湍流火焰等。在此基础上，介绍与燃烧相关的技术。 | | | | | | |
| \*课程简介（Description） | *Advanced Combustion*. (Credits: 3) The course aims to expose students to a solid foundation in combustion sciences and technologies relevant to current and future energy conversion devices using combustion, | | | | | | |
| 课程教学大纲（course syllabus） | | | | | | | |
| \*学习目标(Learning Outcomes) | Students will have the ability to perform critical analyses of current and future reacting systems using analytical and numerical methods. For practical combustion systems with complex geometries, students will have gained sufficient background to further their capabilities of using advanced numerical models. | | | | | | |
| \*教学内容、进度安排及要求  (Class Schedule  & Requirements) | |  |  |  |  | | --- | --- | --- | --- | | Week 1 | Introduction | Week 9 | Laminar Premixed Flame | | Week 2 | Combustion & Thermochemistry (a) | Week 10 | Droplet Evaporation & Burning | | Week 3 | Combustion & Thermochemistry (b) | Week 11 | Burning of Solids | | Week 4 | Mass Transfer and Chemical Kinetics | Week 12 | Turbulent Flow &Flames | | Week 5 | Important Chemical Mechanisms | Week 13 | Emissions from Combustion | | Week 6 | Coupling Thermodynamics & Chemical Kinetics | Week 14 | Projects | | Week 7 | Mid Term | Week 15 | Review | | Week 8 | Simplified Conservation Equations for Reacting Flow | Week 16 | Final Week | | | | | | | |
| \*考核方式  (Grading) | Your final grade will be calculated based on your performance in the following areas: Homework (25%), Exam 1 (25%), Exam 2 (25%); Project (25%). | | | | | | |
| \*教材或参考资料  (Textbooks & Other Materials) | **English Textbook**: Stephen R. Turns, *An Introduction to Combustion, Concepts and Applications,* 2nd Edition, MacGraw Hill, Boston, Massachusetts, US, 2000  Glassman, Irvin, Richard A. Yetter, and Nick G. Glumac. *Combustion*. Academic press, 2014.  **Chinese Supplemental:** 岑可法，姚强，骆仲泱，李绚天，高等燃烧学，浙江大学出版社，2002 | | | | | | |
| 其它  （More） |  | | | | | | |
| 备注  （Notes） |  | | | | | | |

备注说明：

1.课程大纲一般为教师网上填写，填写要求会自动提示；对于新开课程，需要填着纸质大纲，并经院系教学委员会或专业委员会通过。

2．带\*内容为必填项。

3．课程简介字数为300-500字；课程大纲以表述清楚教学安排为宜，字数不限。