

课程大纲

COURSE SYLLABUS

1.	课程代码/名称 Course Code/Title	实验室安全学 Laboratory Safety
2.	课程性质 Compulsory/Elective	通识通修课 Compulsory
3.	开课单位 Offering Dept.	材料科学与工程系 Department of Materials and Science
4.	课程学分/学时 Course Credit/Hours	1/16
5.	授课语言 Teaching Language	中文 Mandarin
6.	授课教师 Instructor(s)	卢周广, 叶飞, 王海鸥, 李艳艳, 廖成竹, 章剑波, 李慧丽 Zhouguang Lu, Fei Ye, Haiou Wang, Yanyan Li, Chengzhu Liao, Jianbo Zhang, Huili Li
7.	开课学期 Semester	春季、秋季 Spring and Fall
8.	是否面向本科生开放 Open to undergraduates or not	是 Yes
9.	先修要求 Pre-requisites	(如面向本科生开放, 请注明区分内容。 If the course is open to undergraduates, please indicate the difference.) 无 None
10.	教学目标 Course Objectives	(如面向本科生开放, 请注明区分内容。 If the course is open to undergraduates, please indicate the difference.) 课程以提高学生对安全问题的认识与理解, 提升学生安全知识及技能为目标。旨在通过课程学习, 引导学生树立“安全第一、生命至上”的安全理念, 规范实验操作, 做好安全预防, 消除安全隐患, 全面提升学生发现并处理常见实验室安全问题的能力, 保障人身财产安全。 The course aims to improve students' awareness and understanding of safety issues and enhance students' safety knowledge and skills. It aims to guide students to establish the safety concept of "safety first and life first", standardize operation, learn precautionary approaches, eliminate potential safety hazards, comprehensively improve students' ability to find and deal with common laboratory safety problems, and ensure personal and property safety.
11.	教学方法 Teaching Methods	(如面向本科生开放, 请注明区分内容。 If the course is open to undergraduates, please indicate the difference.) 课程采取理论讲授、安全视频、实操培训、应急演练与考核相结合的方式开展课程教学。

- (1) 理论讲授, 介绍实验室常见危险源及防护方式、实验室安全守则、实验室安全应急预案等;
- (2) 安全视频, 通过典型高校实验室安全事故及原因分析, 提升学生安全意识;
- (3) 实操培训, 常见实验室危险源排查与处理, 提高学生对安全问题的认识与理解, 包括: 化学品危险等级识别及泄漏处理、常用气体的使用及泄漏处理、洗眼器使用等;
- (4) 应急演练与考核, 提升学生发现并处理常见实验室安全问题的能力, 包括: 化学品泄漏与应急处理、电气安全、急救、灭火器及消防栓的使用等。

The course is carried out by combining lectures, safety videos watching, practical operation training, emergency drill and assessment.

- (1) Lectures: include common laboratory hazards and protection methods, laboratory safety rules, laboratory safety emergency plans, etc.;
- (2) Videos: typical university laboratory safety accidents analysis are used to enhance students' safety awareness;
- (3) Safety training: common laboratory issues troubleshooting, includes chemical danger level identification and leakage treatment, common gas leakage treatment, use of eye wash, etc.;
- (4) Emergency drills and examination: improve students' ability to find and deal with common laboratory safety problems, including chemical leakage and treatment, electrical safety, first aid, use of fire extinguisher and fire hydrant, etc.

12. 教学内容

Course Contents

(如面向本科生开放, 请注明区分内容。 If the course is open to undergraduates, please indicate the difference.)

Section 1	实验室安全学概述 Overview of laboratory safety
Section 2	化学品安全 Chemical safety
Section 3	气体安全 Gas safety
Section 4	消防安全 Fire safety
Section 5	生物和辐射安全 Biological and radiation safety
Section 6	电气安全 Electric safety
Section 7	应急和急救 Emergency response and first aid
Section 8	安全应急演练与考核 Emergency drills and examination

13. 课程考核

Course Assessment

(① 考核形式 Form of examination; ②. 分数构成 grading policy; ③ 如面向本科生开放, 请注明区分内容。 If the course is open to undergraduates, please indicate the difference.)

- ① 考核形式：安全考试、安全演练、实验室危险源排查及处理建议报告；
 - ② 分数构成：安全考试 20%，安全演练与考核 40%，实验室危险源排查及处理建议报告 40%；
 - ③ 对于本科生和研究生，实验室安全要求相同，所以本课程内容及考核方式亦形同。
- ① Form of examination: safety examination, safety drills, report of laboratory hazards treatments;
 - ② Grading policy: safety examination 20%, safety drills and examination 40%, report of laboratory hazards treatments 40%;
 - ③ Safety requirements are the same, so no difference for undergraduates.

14. 教材及其它参考资料
Textbook and Supplementary Readings

- (1) 朱莉娜等. 高校实验室安全基础. 天津大学出版社, 2014 年;
- (2) 黄凯等. 大学实验室安全基础. 北京大学出版社, 2012 年;
- (3) 黄开胜. 清华大学实验室安全手册. 清华大学出版社, 2019 年;
- (4) 刘景良等. 安全管理. 化学工业出版社, 2010 年;
- (5) A.库尔曼. 安全科学导论. 中国地质大学出版社, 1991 年;
- (6) 陈宝智. 安全原理. 冶金工业出版社, 1995 年;
- (7) 王凯全等. 危险化学品安全评价方法 (危险化学品安全培训丛书——6). 中国石化出版社, 2005 年;
- (8) 王新颖等. 危险化学品设备安全 (危险化学品安全培训丛书——2). 中国石化出版社, 2005 年;
- (9) 周忠元等. 化工安全技术. 化学工业出版社, 1993;
- (10) 莫瑞·加瑟. 计算机安全的技术与方法. 电子工业出版社, 1992.