

## 课程详述

### COURSE SPECIFICATION

以下课程信息可能根据实际授课需要或在课程检讨之后产生变动。如对课程有任何疑问，请联系授课教师。

The course information as follows may be subject to change, either during the session because of unforeseen circumstances, or following review of the course at the end of the session. Queries about the course should be directed to the course instructor.

1.	课程名称 <b>Course Title</b>	化妆品科学实践 <b>Practice for Cosmetic Science</b>
2.	授课院系 <b>Originating Department</b>	化学系 Department of Chemistry
3.	课程编号 <b>Course Code</b>	CH330
4.	课程学分 <b>Credit Value</b>	1
5.	课程类别 <b>Course Type</b>	专业选修课 Major Elective Courses
6.	授课学期 <b>Semester</b>	春季 Spring
7.	授课语言 <b>Teaching Language</b>	中英双语 English & Chinese
8.	授课教师、所属学系、联系方式 (如属团队授课, 请列明其他授课教师) <b>Instructor(s), Affiliation &amp; Contact</b> (For team teaching, please list all instructors)	于月娜, 化学系 Yu Yuena, Chemistry yuyn@sustech.edu.cn 0755-8801-8378  房芳, 化学系 Fang Fang, Chemistry fangf@sustech.edu.cn 0755-8801-8738
9.	实验员/助教、所属学系、联系方式 <b>Tutor/TA(s), Contact</b>	无 NA
10.	选课人数限额(可不填) <b>Maximum Enrolment (Optional)</b>	20

11. 授课方式 Delivery Method	讲授 Lectures	习题/辅导/讨论 Tutorials	实验/实习 Lab/Practical	其它(请具体注明) Other (Please specify)	总学时 Total
			32		32
学时数 Credit Hours					
12. 先修课程、其它学习要求 Pre-requisites or Other Academic Requirements	化学原理实验 A (CH102-17)				
13. 后续课程、其它学习规划 Courses for which this course is a pre-requisite	无 NA				
14. 其它要求修读本课程的学系 Cross-listing Dept.	无 NA				

### 教学大纲及教学日历 SYLLABUS

#### 15. 教学目标 Course Objectives

化妆品科学实践是由化学系开设，面向化学专业学生的选修课程，课程实验内容涵盖了化妆品的活性成分性质与合成、基础化妆品配方化学原理与制备流程，化妆品成分分析、功效、质量、安全的评价原理与实验方法，全面深入了解化妆品的研发流程，拓宽学生知识范畴。

Practice for cosmetic science was an elective course opened by department of chemistry. The course mainly introduces properties and synthesis of active cosmetic ingredients, the principle and formulating procedure of basic cosmetics formulations, the principle and laboratory method of cosmetic composition analysis, efficacy, quality, and safety evaluation, equips students with knowledge and understanding the research and development process of cosmetics and broaden the scope of student knowledge.

#### 16. 预达学习成果 Learning Outcomes

掌握基础护肤品的配制方法，并掌握常见化妆品功效、质量和安全评价的实验方法，了解化妆品常用原料性质与应用范围，了解化妆品配方开发流程与产品评价标准与法规。

Students learn to formulate, test and evaluate the efficacy, quality and safety of many types of cosmetic products, understand the properties and application scope of commonly used cosmetic materials, to understand the cosmetic formula development process and product evaluation standards and regulations, and to have an overview of current trends in cosmetic science and the industry.

17. 课程内容及教学日历（如授课语言以英文为主，则课程内容介绍可以用英文；如团队教学或模块教学，教学日历须注明主讲人）

**Course Contents (in Parts/Chapters/Sections/Weeks. Please notify name of instructor for course section(s), if this is a team teaching or module course.)**

1. 深层清洁洁面乳的制备与清洁功效评价（4 学时）：制备洁面乳，测试洁面乳 pH 值，并测定清洁后皮肤的油脂和 pH 值；
  2. 润肤乳的制备与保湿功效评价（4 学时）：制备基础润肤乳，并对产品保湿性能进行测试；
  3. 紫草色素的提取与润唇膏的制备（6 学时）：索氏提取法提取天然植物色素，通过 GC-MS 对色素成分进行检测，并制备成润唇产品；
  4. 美白精华的制备与功效成分含量分析（6 学时）：制备含有改善肤色的功效护肤品，并高效液相色谱法对产品中功效成分含量进行测定；
  5. 防晒乳液的制备与功效评价（6 学时）：制备含有物理防晒和化学防晒成分的防晒乳液，用红外光谱检测防晒性能；
  6. 化妆品中铅的含量——火焰原子吸收分光光度法（6 学时）：按照国标方法，处理样品并进行禁用成分的含量分析，通过实验了解化妆品安全评价方法；
1. **Preparation of cleanser and efficacy evaluation (4 hours):** prepare cleanser, test the pH value of t cleanser, and determine the oil and pH value of the cleaned skin;
  2. **Preparation of moisturizing lotion and evaluation of moisturizing effect (4 hours):** prepare basic moisturizer and test the moisturizing effect of the product;
  3. **Extraction of lithospermum pigment and preparation of lipstick (6 hours):** Extract plant pigments through Soxhlet extraction and analyze the components of pigments by GC-MS, and apply them in preparing of lipsticks;
  4. **Preparation of whitening essence and analysis of functional ingredients (6 hours):** Prepare skin care products that improve skin tone, and analyze the content of functional ingredients by HPLC;
  5. **Preparation and efficacy evaluation of sunscreen lotion (6 hours):** prepare sunscreen lotion containing physical sunscreen and chemical sunscreen ingredients, and test sunscreen performance by infrared spectroscopy;
  6. **Determination the content of lead in cosmetics by flame atomic absorption spectrophotometry (6 credit hours):** According to the national standard method, process samples and analyze the content of prohibited ingredients, and understand the safety evaluation methods of cosmetics through experiments;

- 18 教材及其它参考资料 Textbook and Supplementary Readings

- [1] 裘炳毅, 高志红. 现代化妆品科学与技术 [M]. 1 版. 北京: 中国轻工业出版社, 2016.
- [2] 李利. 美容化妆品学[M]. 2 版.北京: 人民卫生出版社, 2011.
- [3] 王建新. 化妆品天然成分原料手册[M]. 1 版.北京: 化学工业出版社, 2015.
- [4] 何秋星. 化妆品配方与工艺学实验[M].1 版.北京: 科学出版社, 2017.
- [5] 曹高.化妆品功效评价实验[M].1 版.北京: 科学出版社, 2017.
- [6] 赵平.化妆品安全性评价实验[M].1 版.北京: 科学出版社, 2017.
- [7] 赵红.化妆品质量分析检测实验[M].1 版.北京: 科学出版社, 2017.
- [8] Barel A, Paye M, Maibach H. Handbook of Cosmetic Science and Technology [M]. Boca Raton: CRC Press, 2014.
- [9] Draelo Z D. Cosmetic Dermatology: Products and Procedures [M]. 1 nd. Chichester: Wiley, 2010.

### 课程评估 ASSESSMENT

19. 评估形式 Type of Assessment	评估时间 Time	占考试总成绩百分比 % of final score	违纪处罚 Penalty	备注 Notes
出勤 Attendance		10		
课堂表现 Class Performance		40		
小测验 Quiz				
课程项目 Projects				
平时作业 Assignments		50		
期中考试 Mid-Term Test				
期末考试 Final Exam				
期末报告 Final Presentation				
其它（可根据需要 改写以上评估方式） Others (The above may be modified as necessary)				

Southern University of Science and Technology

### 20. 记分方式 GRADING SYSTEM

A. 十三级等级制 Letter Grading  
 B. 二级记分制（通过/不通过） Pass/Fail Grading

### 课程审批 REVIEW AND APPROVAL

21. 本课程设置已经过以下责任人/委员会审议通过  
This Course has been approved by the following person or committee of authority

化学系教学指导委员会  
 Teaching committee of the chemistry department