南方科技大学 SOUTHERN UNIVERSITY OF SCIENCE AND TECHNOLOGY

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 Course Title	天然产物全合成 Natural Product Total Synthesis
2.	授课院系 Originating Department	化学系 Department of Chemistry
3.	课程编号 Course Code	CH323
4.	课程学分 Credit Value	2
5.	课程类别 Course Type	专业选修课 Major Elective Courses
6.	授课学期 Semester	春季 Spring
7.	授课语言 Teaching Language	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） Instructor(s), Affiliation& Contact （For team teaching, please list all instructors）	徐晶，化学系，xuj@sustech.edu.cn Jing Xu, Department of Chemistry, xuj@sustech.edu.cn
9.	实验员/助教、所属学系、联系方式 Tutor/TA(s), Contact	待公布 To be announced
10.	选课人数限额(可不填) Maximum Enrolment （Optional）	

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
学时数 Credit Hours	28	2	2		32

12.	先修课程、其它学习要求 **Pre-requisites or Other Academic Requirements**	有机化学 II（CH206）
13.	后续课程、其它学习规划 **Courses for which this course is a pre-requisite**	
14.	其它要求修读本课程的学系 **Cross-listing Dept.**	

教学大纲及教学日历 SYLLABUS

15. **教学目标 Course Objectives**

天然产物不仅是新药研发的基础和源泉，天然产物全合成也很好地综合了基础有机、高等有机、金属有机、有机机理、药物化学、人名反应、不对称合成、合成策略等领域的重要知识，本课程将重点讲解十几个代表性的天然产物全合成工作，从介绍整体合成思路与策略出发，精心详细地解释每一步转化背后的原因和机理，使同学们对有机化学知识有一个全面的融会贯通，对同学们将来的深造和相关领域工作有着极好的促进作用。

Natural products are not only the basis and source of new drug research and development. Natural product total synthesis is also a very important way to learn and combine the knowledge of basic organic chemistry, advance organic chemistry, mechanisms, organometallics, medicinal chemistry, name reaction, asymmetric synthesis, synthesis strategy and other areas. This course will focus on more than a dozen representative of the natural product synthesis, from the introduction of the overall synthesis of ideas and strategies, carefully explained in detail the reasons behind the transformation and mechanism, so that students have a comprehensive understanding of organic chemistry of the mastery, greatly promoting the future and career skill for the students.

16. **预达学习成果 Learning Outcomes**

通过本课程的学习，同学们可以深刻的体会到有机化学基础理论知识在实践应用中的价值，了解各种有机反应在不同底物、不同场合的合理应用，对复杂药物和天然产物分子的合成达到可以基本合理规划、设计与合成的水平，对于同学们在药物研发或者相关领域就业、深造和以后的长远发展都意义极其重要。

Through the study of this course, students can profoundly understand the value of the basic chemistry of organic chemistry in the practical application, understanding the rational application of various organic reactions in different substrates and occasions. Students will learn how to plan, design and synthesize a complex molecule. This course will be of great significance for the students' further study and long-term development in the relevant areas.

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、 青蒿素（4 学时）Artemisinin (4 Credit Hours)

2、 紫杉醇（6 学时）Taxol (6 Credit Hours)

3、 马钱子碱（4 学时）Strychnine (4 Credit Hours)

4、 虎皮楠生物碱（6 学时）Daphniphyllum Alkaloids (6 Credit Hours)

5、 印楝素（2 学时）Azadirachtin (2 Credit Hours)

6、 海葵毒素（2 学时）Palytoxin (2 Credit Hours)

7、 复杂二倍半萜合成（2 学时）Sesterterpenoids (2 Credit Hours)

8、 复杂二萜合成（2 学时）Diterpenoids (2 Credit Hours)

9、 领域前沿进展讨论和辅导（4 学时）Presentations of Recent advances and Discussion (4 Credit Hours)

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

教材：Classics in Total Synthesis (I/II/III), K. C. Nicolaou et al. (Wiley)

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		20		
课堂表现 Class Performance		20		
小测验 Quiz				
课程项目 Projects				
平时作业 Assignments				
期中考试 Mid-Term Test				
期末考试 Final Exam				
期末报告 Final Presentation		60		

其它（可根据需要改写以上评估方式） **Others (The above may be modified as necessary)**				

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