

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	高等数学（上）（Calculus I）
2.	授课院系 Originating Department	数学系（Department of Mathematics）
3.	课程编号 Course Code	MA117
4.	课程学分 Credit Value	4
5.	课程类别 Course Type	通识必修课程 General Education (GE) required Courses
6.	授课学期 Semester	秋季 Fall
7.	授课语言 Teaching Language	英文 English / 中英双语 English & Chinese
8.	授课教师、所属学系、联系方式 Instructor(s), Affiliation & Contact (For team teaching, please list all instructors)	王融等 (Rong Wang, et al.) 数学系 Department of Mathematics wangr3@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	习题/辅导/讨论	实验/实习	其它(请具体注明)	总学时
	Lectures	Tutorials	Lab/Practical	Other (Please specify)	Total
学时数 Credit Hours	64	32	0	0	96
12. 先修课程、其它学习要求 Pre-requisites or Other Academic Requirements	无 (none)				
13. 后续课程、其它学习规划 Courses for which this course is a pre-requisite	高等数学(下), 实变函数, 复变函数, 常微分方程 Calculus II, Real Analysis, Complex Analysis, Ordinary Differential Equations				
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

本课程的对象是将来选择物理、电子工程等对数学要求较高的专业的学生。本课程强调单变量微积分的基本概念、性质以及计算微分和积分的基本技巧，培养学生使用微积分的思想去解决其它科学领域的能力。本课程主要包括：极限与连续性理论、单变量微分及其应用、单变量积分及其应用、常微分方程的简单介绍。

In this course, we emphasize intuitive and conceptual understanding of the theory of single-variable Calculus, computation skills, and nurture the mentality and the ability to use Calculus to solve problems in other scientific disciplines. The course will cover limits and continuity, derivatives, single-variable integrals, and ordinary differential equations.

16. 预达学习成果 Learning Outcomes

通过本课程的学习，使学生掌握单变量微积分的基本概念、基本理论和基本运算技能，为学生进一步学习以后的各门专业基础课、各科专业课奠定必要的数学基础。

By learning Calculus I, students will understand the basic concepts and theorems, and obtain the basic calculation skill. It will lay the necessary mathematical foundation for further study of every fundamental course and major course in future.

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.)

极限和连续性 (7 小时)

导数 (8 小时)

导数的应用 (8 小时)

积分 (8 小时)

定积分的应用 (6 小时)

超越函数 (8 小时)

积分技巧 (11 小时)

一阶常微分方程 (4 小时)

Limits and Continuity: (7 hours)

Differentiation: (8 hours)

Applications of Derivatives: (8 hours)

Integration: (8 hours)

Applications of Definite Integrals: (6 hours)

Transcendental Functions: (8 hours)

Techniques of Integration: (11 hours)

First-order Differential Equations: (4 hours)

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

教材: Thomas' Calculus, 13e, George B. Thomas, Maurice D. Weir and Joel Hass, Pearson Education, 2016.

Textbook: Thomas' Calculus, 13e, George B. Thomas, Maurice D. Weir and Joel Hass, Pearson Education, 2016.

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		5		
课堂表现 Class Performance		0		

小测验 Quiz		10		
课程项目 Projects		0		
平时作业 Assignments		15		
期中考试 Mid-Term Test		30		
期末考试 Final Exam		40		
期末报告 Final Presentation		0		
其它（可根据需要 改写以上评估方 式） Others (The above may be modified as necessary)		0		

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

