

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	数学分析 I Mathematical Analysis I
2.	授课院系 Originating Department	数学系 Department of Mathematics
3.	课程编号 Course Code	MA101a
4.	课程学分 Credit Value	5
5.	课程类别 Course Type	专业基础课 Major Foundational Courses
6.	授课学期 Semester	秋季 Fall
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)	马富明, 吴纪桃 Fuming Ma, Jitao Wu 数学系 慧园 3 栋 409 huy@sustech.edu.cn 0755-8801-5910 Yong Hu, Department of Mathematics Block 3, Room 409, Wisdom Valley huy@sustech.edu.cn 0755-8801-5910
9.	实验员/助教、所属学系、联系方式 Tutor/TA(s), Contact	
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	64	32	0		96

12. 先修课程、其它学习要求 Pre-requisites or Other Academic Requirements	无 NA
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

本课程为主修数学的学生奠定坚实的分析理论基础，培养严谨的逻辑推理和数学思维能力。用 epsilon-delta 语言定义微积分里的基本概念，内容涵盖基本的实数理论、极限、函数的连续性、函数的导数和不定积分等。

This course aims at providing math majored students with solid foundation in the theory of analysis, cultivating their ability of rigorous logical reasoning and mathematical thinking. It uses epsilon-delta language to define basic concepts in Calculus and covers elementary theory of real numbers, limits, continuity of functions, derivatives and indefinite integrals.

16. 预达学习成果 Learning Outcomes

学生需要通过 epsilon-delta 语言理解极限、连续等基本概念，并能运用 epsilon-delta 语言证明简单的命题，熟练掌握微积分的运算技巧。

Students are expected to understand the basic concepts, such as limit and continuity, through epsilon-delta language, and use epsilon-delta language to prove simple propositions. They are also supposed to master calculation skills in Calculus.

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. 数列的极限 (12 学时)

Limit of sequences. (12 hours)

2. 函数的极限与连续性 (12 学时)

Limit and continuity of functions (12 hours)

3. 函数的导数与微分 (12 学时)

Derivative of functions and differential (12 hours)

4. 微分中值定理与 Taylor 定理 (12 学时)

Differential mean value theorem and Taylor's theorem (12 hours)

5. 求导的逆运算——原函数 (8 学时)

The inverse of derivation----Primitive function (8 hours)

6. 积分 I——函数的积分与计算 (8 学时)

Integral I----Integral of functions and its computation (8 hours)

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

教材 Textbook:

数学分析教程 (上下册), 常庚哲, 史济怀, 中国科学技术大学出版社, 第三版, 2012.

其他参考资料 Supplementary Readings:

Mathematical Analysis (I,II), Zorich, 世界图书, 第 1 版, 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

5

课堂表现

0

Class Performance

小测验

15

Quiz

课程项目 Projects

0

平时作业

10

Assignments

期中考试

30

Mid-Term Test

期末考试

40

Final Exam

期末报告

0

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)**

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

