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**	微电子前沿讲座 I Frontier Seminars in Microelectronics and IC Designs I
2.	**授课院系 Originating Department**	深港微电子学院 School of Microelectronics
3.	**课程编号 Course Code**	SME301
4.	**课程学分 Credit Value**	1
5.	**课程类别 Course Type**	专业选修课 Major Elective 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）**	微电子学院相关老师 (课程协调人，崔德虎) 崔德虎/ CUI Dehu 深港微电子学院 助理教授, School of Microelectronics, Assistant Professor 第二科研楼 527, Research Building 2,room 527 cuidh@sustech.edu.cn, 88018586
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	16				16

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.	无 NA

教学大纲及教学日历 SYLLABUS

15. 教学目标 Course Objectives

本课程旨在培养本科生在了解近年来微电子领域科技发展的热点及方向并启发他们在微电子领域的兴趣与科研能力。本课程拟邀请校内及校外在微电子领域具有影响力的老师来为学生们进行讲座，最终使本科生们对微电子领域近年来的发展热点有深刻的理解和认识, 提高文献查阅和文献综述的能力。

This course is designed to educate undergraduates on the latest hotspots and directions of technology development in the field of microelectronics, and to inspire their interest and research capabilities in microelectronics. This course is intended to invite influential professors in the field of microelectronics to give lectures to students, and ultimately let the students have a deep understanding of the hotspots and improve the ability to read literature and writing review articles..

16. 预达学习成果 Learning Outcomes

通过本课程，学生预期具有

1. 运用数学、科学和工程知识去理解所研究问题的原理和研究方法;
2. 对最新科技更广阔的视野;
3. 与队友有效沟通的能力;
4. 自学的能力。

By taking this course, students are expected to have

1. The ability to apply the knowledge of mathematics, science and engineering to understand the principle and methodology of the research problem;
2. Broadened visions to the emerging technologies;
3. An ability to communicate effectively with team members
4. An ability of self-study

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.)

本课程研究点，通过课程的学习，学生将掌握微电子领域的基数与未来发展的热点原，学会并培养分析问题的能力。
This course will introduce the most concentrate research point in the Microelectronics. It is essential for students to engage in research and development integrated circuit design in the future.

1）课程内容为国际微电子方向的最新技术、研究进展、应用案例分析等。讲座涵盖集成电路工艺器件（CMOS、新型超高密度存储器、GaN 器件与系统集成）、IC 设计（人工智能芯片、太赫兹通讯芯片、DNA 传感器芯片）、微型能量采集器（微型能量采集器、微型湿度传感器、半导体测试探针、MEMS 加工工艺开发）等研究方向。
The content of this course is about the newest technology, research progress, application analyses.
The lecture covers integrated circuit process devices (CMOS, new ultra-high density memory, GaN devices and system integration, etc.), IC design (artificial intelligence chip, terahertz communication chip, DNA sensor chip, etc.), micro energy harvester (micro energy harvester, micro humidity sensors, semiconductor test probes, and MEMS processing technology development ect.

2）各位负责教授可以选择自行授课，也可以邀请校外学者来校授课。

The person who give the talk either can be the professor in SUSTech or invited from other universities.

3）本课程 1 学分，16 学时。课程考核综合学生出勤、课堂表现、期末报告等。
This course consists of 1 credit value, 16 hours. The course assessment integrates student attendance, class performance, and final presentation.

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

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		每次讲座开始前签到 Sign in before each seminar begins
课堂表现 Class Performance				
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		90		1.学生自己分组。每组 4-5 人。每组选择其中一个讲座主题来完成一份期末报告，这个报告应该对该研究领域

				作综述并展望未来研究方向； 2.期末报告必须用英文提交； First, students are freely grouped to a team with 4-5 members. Each group chooses one of the seminar topics to accomplish a final report which should review the research areas and anticipate the future prospects of the research topic. Secondly, the final reports are expected to be submitted in English.
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