

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	机械原理设计实验 Machinery and Mechanical Design Labs
2.	授课院系 Originating Department	机械与能源工程系 Department of Mechanical and Energy Engineering
3.	课程编号 Course Code	ME316
4.	课程学分 Credit Value	2
5.	课程类别 Course Type	专业核心课 Major Core Courses
6.	授课学期 Semester	春季 Spring / 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)	肖啸川：机械与能源工程系，xiaoxc@sustech.edu.cn 黄业绪：机械与能源工程系，huangyx3@sustech.edu.cn 黄渊建：机械与能源工程系，huangyj@sustech.edu.cn 曾千里：机械与能源工程系，zengql@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)	65

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
	0	0	64	0	64
学时数 Credit Hours					
12. 先修课程、其它学习要求 Pre-requisites or Other Academic Requirements					
13. 后续课程、其它学习规划 Courses for which this course is a pre-requisite	产品设计实践 Product Design Practice				
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

通过相关实验内容提高学生对于机械原理和机械设计的理论知识的认知水平及相应的实践动手能力。

Enhance the level of comprehension on the theoretical knowledge of mechanics of machine and machine design and the ability to practice by relevant experiments.

16. 预达学习成果 Learning Outcomes

1. 理解常用机械零部件及机械设备的基本工作原理、使用条件及应用环境

Understand the mechanism, operating condition and working environment of general mechanical components and equipment.

2. 具备一定的机械结构设计能力

The ability to design certain types of mechanical structure

3. 具备团队协作及沟通能力

The ability to co-operate and communicate when working as a team

4. 具备根据需求获取相关信息的自主学习能力

The ability of independent study to acquire necessary information based on requirement

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.)

Week 1 (instructor: Xiaochuan Xiao):

2 credit hours: course introduction on syllabus and grading rubrics, including FAQ answering

2 credit hours: safety training and tests, such as laboratory rules and forbidden activities

Week 2 (instructor: Xiaochuan Xiao):

4 credit hours: CAD engineering drawing and modelling techniques review 1 and 2

Week 3 (instructor: Xiaochuan Xiao):

4 credit hours: planetary linkages experiment 1 and 2, including 4-bar linkages, crank sliders etc.

Week 4 (instructor: Xiaochuan Xiao):

4 credit hours: planetary linkages experiment 3 and 4, including commonly used mechanical structures

Week 5 (instructor: Xiaochuan Xiao):

4 credit hours: shaft design assembly experiment 1 and 2, including spur gears, bevel gears etc.

Week 6 (instructor: Xiaochuan Xiao):

4 credit hours: power transmission assembly experiment 1 and 2

Week 7 (instructor: Xiaochuan Xiao):

4 credit hours: dimension examination experiment 1 and 2

Week 8 (instructor: Xiaochuan Xiao):

4 credit hours: tolerance examination experiment 1 and 2

Week 9 (instructor: Xiaochuan Xiao):

4 credit hours: project design process lecture 1 and 2 + project announcement

Week 10 (instructor: Yuanjian Huang):

4 credit hours: lecture on manufacture 1 and 2

Week 11 (instructor: Qianli Zeng):

4 credit hours: lecture on manufacture 3 and 4

Week 12 (instructor: Yexu Huang):

4 credit hours: project management 1 and 2

Week 13 – 16 (instructor: All teaching staff):

16 credits hours: independent project design and instruction

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

- 华中科技大学，机械设计（第三版），Textbook by HUST on Mechanical Design
- 华中科技大学，机械原理（第二版），Textbook by HUST on Mechanism Design

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				
小测验 Quiz				
课程项目 Projects		30		
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)				

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