

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	增材制造 Additive Manufacturing
2.	授课院系 Originating Department	创新创意设计学院 School of Design
3.	课程编号 Course Code	DS203
4.	课程学分 Credit Value	3
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	英文 English
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)	Thomas KVAN Dean and Chair Professor, School of Design kvan@sustech.edu.cn Room 506, Building 6, Chuangyuan, SUSTech
9.	实验员/助教、所属学系、联系方式 Tutor/TA(s), Contact	无 NA
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	32		32		64
12. 先修课程、其它学习要求 Pre-requisites or Other Academic Requirements	无 N/A				
13. 后续课程、其它学习规划 Courses for which this course is a pre-requisite	无 N/A				
14. 其它要求修读本课程的学系 Cross-listing Dept.	无 N/A				

教学大纲及教学日历 SYLLABUS

15. 教学目标 Course Objectives

本课程通过让学生设计一个用于自己身体的物体，加对人体工程学的思考认识，为学生提供关于自我意识的初步介绍。学生将学习人体运动、身体结构和舒适的基本概念。

核心技能：测量动态对象、脚本编写、参数化设计、理解三维运动、增材制造（3D 打印）

This initial introduction to self-awareness is a deeper review of ergonomics through designing an object for use on their own bodies. The students will learn to understand human movement, body structure and basic concepts of comfort.

Skills: measuring dynamic objects, scripting, parametric design, understanding movement in three dimensions, additive manufacturing (3D printing)

16. 预达学习成果 Learning Outcomes

通过学习，学生将能够：

- 识别、描述和应用人体工程学和因人学的基本原理
- 参考历史和当代先例，识别、描述和应用 3D 形式制作的原则和理论
- 在增材和减材制造过程中展示对材料的理解
- 具备使用 3D 打印、扫描和相关数据转换的基本工具的能力

Upon successful completion of this module, students will be able to:

- Identify, describe and apply basic principles of ergonomics and human factors
- Identify, describe and apply principles and theories of 3D form making with reference to historical and contemporary precedents
- Demonstrate an understanding of materials in the context of additive and subtractive processes for forming
- Demonstrate the ability to use basic tools of 3D printing, scanning and related data conversions

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.)

<u>Week</u>	<u>Content</u>
1	Knowledge of ergonomics and movement
2	Scan and convert data
3	Print and design using model
4	Create final design outcome

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

1.	Kahane, J., 2015 The Form of Design: Deciphering the Language of Mass Produced Objects, Laurence King Publishing, ISBN-10 : 9063693753
2.	Harmsen, J., de Haan, A. B., & Swinkels, P. L. (2018). Product and process design: Driving innovation: Walter de Gruyter GmbH & Co KG.
3.	Lidwell, W., Holden, K., & Butler, J. (2003). Universal principles of design. Gloucester, Mass.: Rockport
4.	Myers, W. (2018). Bio design. Thames and Hudson

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%		
课堂表现 Class Performance				
小测验 Quiz				
课程项目 Projects				
平时作业 Assignments		40%		
期中考试 Mid-Term Test				
期末考试 Final Exam				
期末报告 Final Presentation		50%		
其它（可根据需要 改写以上评估方 式） Others (The above may be modified as necessary)				

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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