

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	生产运作数据建模与分析 Data Modeling and Analysis in Production Operations
2.	授课院系 Originating Department	信息系统与管理工程系 Department of Information Systems & Management Engineering
3.	课程编号 Course Code	MIS407
4.	课程学分 Credit Value	3
5.	课程类别 Course Type	专业选修课
6.	授课学期 Semester	秋季 Spring
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 (For team teaching, please list all instructors)	李焱, 商学院 Yao Li, School of Business Email: liy68@sustech.edu.cn
9.	实验员/助教、所属学系、联系方式 Tutor/TA(s), Contact	Mingshan Zhang 张明山, 12232991@mail.sustech.edu.cn
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 None				
13. 后续课程、其它学习规划 Courses for which this course is a pre-requisite	无 None				
14. 其它要求修读本课程的学系 Cross-listing Dept.	无 None				

教学大纲及教学日历 SYLLABUS

15. 教学目标 Course Objectives

从组织的角度来看，运营管理可以定义为对生产和交付组织的商品和服务所需的直接资源的管理。运营管理职能中的日常活动侧重于通过其转型过程为组织增加价值。运营管理的主要内容可以分为四个部分：

- 1) 运营战略与企业竞争力，包括竞争重点、运营战略与企业竞争力的关系、运营流程选择等。
- 2) 运营体系设计，如新产品和服务开发、产能决策、设施选址布局、岗位设计等。
- 3) 运营计划、组织和控制，包括预测、运营计划、库存控制、MRP 和 JIT、供应链管理等。
- 4) 运营体系的改进，包括质量控制和改进。

From an organizational perspective, operations management may be defined as the management of the direct resources that are required to produce and deliver an organization's good and services. The day-to-day activities within the operations management function focus on adding value for the organization through its transformation process. The main contents of operations management can be divided into four parts:

- 1) Operations strategy and the firm's competitiveness, including the competitive priorities, the relationship between operations strategy and the firm's competitiveness, operations processes selection, etc.
- 2) Design of the operations system, such as new product and service development, capacity decision, facility location and layout, job design, etc.
- 3) Operations planning, organizing and control, including forecasting, operations planning, inventory control, MRP and JIT, supply chain management, etc.
- 4) The improvements of operations system, including quality control and improvements.

16. 预达学习成果 Learning Outcomes

- 了解生产和运营领域的关键概念和理论
- 了解运营决策中的经典模型。
- 了解如何借助软件解决运营模型。

- 了解如何利用企业运营数据来提高运营效率。
- Learn about the key concepts and theory in production and operations field
- Learn about the classical models in operations decision making.
- Learn about how to solve the operational model with the assistance of software.
- Learn about how to take the advantage of data to improve operational efficiency.

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	Topics	Tutorials/ Lab
1	Introduction <ul style="list-style-type: none"> • What is production operations? • Major Decisions in production operations • Historical Evolution of production operations 	Lab: Introduction -Matlab
2	Operations Strategy <ul style="list-style-type: none"> • Operations Strategy and Corporate Strategy • Supply Chain Design and Vertical Integration • Competitive Priorities and Trade-offs • Production and Inventory Strategies 	Lab: Numerical & Matrix operations
3	Process and Bottleneck <ul style="list-style-type: none"> • Manufacturing and Service Process • Process Analysis • Identifying and relieving Bottlenecks of the Process 	Lab Loop & Plot
4	Capacity Planning & Layout <ul style="list-style-type: none"> • Capacity Timing and Sizing • A Systematic Approach to Capacity Decisions • Facility Layout 	Lab: Linear Programming
5	Operations Planning Game	Lab : Planning Game Analysis
6	Forecasting: <ul style="list-style-type: none"> • Time Series Analysis • Regression Analysis • Machine Learning Analysis • Judgmental Forecasting: 	Lab: Regression
7	Inventory Control System <ul style="list-style-type: none"> •Continuous Review System •Periodic Review System •(Q,R) System • Type 1 & Type 2 Service Level 	Lab: Non-Linear Programming

8	MRP, MPS and ERP • Dependent Demand and Principles of MRP • MPS: From Operations Plan to Product Schedules • ERP system	Tutorial: Assignments
9	Mid-term Exam	Tutorial for Mid-term Exam
10	Project Management I • Defining Projects • Integration Management • Scope Management	Lab: Inventory Control System
11	Project Management II • Scheduling Management	Lab: Project Management
12	Project Management III • Cost Management • Procurement Management	Lab: SimuLink
13	Project Management IV • Quality Management • Risk Management	Lab: Simulation Project 1
14	Location • Dominant Factors in Location Decisions • Locating a Single Facility • Locating Facilities within a Supply Chain Network	Lab: Simulation Project 2
15	Lean System • What is Lean System • JIT Production and Kanban Method • Raising Employees' utilization rate • Quality Control at the Source • Lean Thinking—Continuous Improvement	Lab: Simulation Project Report
16	Group Presentation of Case Study -Case study Report (+ Wrap-up for the Final Examination)	Group Presentation of Case Study

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

Lee J. Krajewski, and, Manoj K. Malhotra, Operations management: processes and supply chains. 13th Edition (Global Edition.)

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				
小测验 Quiz				
课程项目 Projects				
平时作业 Assignments		15		
期中考试 Mid-Term Test		20		
期末考试 Final Exam		20		
期末报告 Final Presentation		40		
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

李晔

任课教师: