

## 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.	<b>课程名称 Course Title</b>	商业分析中的 Python 运用 Business Analytics Using Python
2.	<b>授课院系 Originating Department</b>	信息系统与管理工程系 Department of Information Systems & Management Engineering
3.	<b>课程编号 Course Code</b>	MIS109
4.	<b>课程学分 Credit Value</b>	1
5.	<b>课程类别 Course Type</b>	通识选修课 GE Elective Courses
6.	<b>授课学期 Semester</b>	春季 Spring; 夏季 Summer
7.	<b>授课语言 Teaching Language</b>	英文 English; 中英双语 English & Chinese
8.	<b>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 &amp; Contact (For team teaching, please list all instructors)</b>	李焱, 信息系统与管理工程系; Xitong Li (外聘) Yao Li, Department of Information Systems & Management Engineering, liy68@sustech.edu.cn
9.	<b>实验员/助教、所属学系、联系方式 Tutor/TA(s), Contact</b>	待公布 To be announced
10.	<b>选课人数限额(可不填) Maximum Enrolment (Optional)</b>	

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	CS102A 计算机程序设计基础 A				
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

社交媒体与商业的日趋整合为我们提出了新的数据分析需求，新的数据分析涉及非结构化数据，特别是文本数据，比如产品评论，Twitter/Facebook 上的消息，通话记录等。在这门课上，我们将了解商业中的新兴分析需求，以及怎样用 python 语言解决这些问题。

With the integration of social media with businesses, there have emerged new data analytical needs involving unstructured data, especially textual data like online product reviews, Twitter/Facebook messages, transcripts of phone call logs. In this course, we will learn about some of the new analytical needs that businesses have and how we can solve them using Python programming.

#### 16. 预达学习成果 Learning Outcomes

1. 理解商业分析问题涉及的多个步骤
2. 理解企业在数据收集和分析中面临的挑战
3. 理解文本数据怎样被收集和分析以致产生
4. 用 Python 进行基础编程
  - a. 理解基础编程概念，例如数据类型、条件语句和方法
  - b. 进行基础的 I/O 操作，例如文件读写
  - c. 用 Python 收集互联网中的数据
  - d. 利用 Python 模块解决数据分析问题
5. 编写数据分析程序完成以下三个任务：
  - a. 网络爬虫
  - b. 语义分析
  - c. 主题模型

1. understand the various steps involved in solving a business analytics problem
2. understand the data collection and analytical challenges faced by firms
3. understand how textual data can be collected and analyzed to derive insights
4. write basic programs using Python
  - a. understand basic programming concepts, such as data types, conditions, and functions

- b. perform standard input/output operations, such as read and write into files
  - c. use Python to collect data from the Internet
  - d. use Python modules to address analytical problems
5. write data analytical programs using Python for the following three tasks:
- a. Web scrapping
  - b. Sentiment analysis
  - c. Topic modeling

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.)**

**理论课（16 学时）**

Lecture 1: Python 编程基础 (2 学时)

Lecture 2: 在线数据收集与网络爬虫 I (学时)

Lecture 3: 在线数据收集与网络爬虫 II (2 学时)

Lecture 4: 机器学习方法介绍 (2 学时)

Lecture 5: 情感分析:预测一个词的情感 (2 学时)

Lecture 6: 主题模型 I (2 学时)

Lecture 7: 主题模型 II (2 学时)

Lecture 8: 总结 & 小组展示 (2 学时)

**Lecture（16 hours）**

Lecture 1: Introduction and Basics of Python Programming (2 hours)

Lecture 2: Introduction to Online Data Collection and Web Scraping(2hours)

Lecture 3: Perform Online Data Collection and Web Scraping (2 hours)

Lecture 4: Try and Understand Some of the Popular Machine Learning Methods (2hours)

Lecture 5: Sentiment Analysis: Predict the Sentiment of a Word (2 hours)

Lecture 6: Topic Modeling I (2hours)

Lecture 7: Topic Modeling II (2 hours)

Lecture 8: Summary & Group Presentation I (2 hours)

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

“Unit 1 to Unit 8” from - <https://www.codecademy.com/learn/learn-python> (“Learn Python 2”)

**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		15		
课堂表现 Class Performance		15		
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		70		
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