

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	广义线性模型 Generalized Linear Models
2.	授课院系 Originating Department	统计与数据科学系 Department of Statistics and Data Science
3.	课程编号 Course Code	STA327
4.	课程学分 Credit Value	3
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	英文 English
8.	授课教师、所属学系、联系方式 Instructor(s), Affiliation & Contact (For team teaching, please list all instructors)	陈欣 CHEN Xin 商学院 329 Business School 329 Email: chenx8@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)	

11. 授课方式 Delivery Method	讲授	习题/辅导/讨论	实验/实习	其它(请具体注明)	总学时
	Lectures	Tutorials	Lab/Practical	Other (Please specify)	Total
学时数 Credit Hours	48				
12. 先修课程、其它学习要求 Pre-requisites or Other Academic Requirements	统计线性模型 (MA329) Statistical Linear Models (MA329)				
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.					

教学大纲及教学日历 SYLLABUS

15. 教学目标 Course Objectives

本课 3 学分，3 学时/每周。先修课程：统计线性模型 (MA329)。广义线性模型是经典线性模型的自然推广。广义线性模型涵盖了作为特例线性回归模型、二项响应变量的 logit 模型和 probit 模型。广义线性模型可应用于多种多样的学科领域。在经典线性模型的假设无效时，应考虑使用这一类模型。

This course introduces generalized linear models which are a natural generalization of classical linear models. They include as special cases linear regression model, logit and probit models for binomial responses, and multinomial response models. Generalized linear models are applicable in a wide variety of subject areas, and should be considered whenever the assumptions of the classical linear model are invalid.

16. 预达学习成果 Learning Outcomes

学习非线性回归模型、二项响应变量的 logit 模型和 probit 模型，计次数的多项式响应模和对数线性模型、广义估计方程和似然方法。

Learn non-linear models, logit and probit models for binomial responses, multinomial response models and log-linear models for count data, general estimating equations and quasi-likelihood method.

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.)

复习线性回归模型、学习非线性回归模型、二项响应变量的 logit 模型和 probit 模型，计次数的多项式响应模型和对数线性模型、广义估计方程和似然方法。

Review of linear regression models, learn non-linear models, logit and probit models for binomial responses, multinomial response models and log-linear models for count data, general estimating equations and quasi-likelihood method.

第一章 GLIM 通论（9 学时）

第 2 章 GLIM 用于二进制数据（9 学时）

第 3 章 GLIM 用于均值与方差成比例的数据（9 学时）

第 4 章 GLIM 用于具有恒定变异系数的数据（9 个课时）

第 5 章 多变量数据的 GLIM（9 学时）

第六章 拟似然和估计方程（3 学时）

Chapter 1 General Theory of GLIM (9 class hours)

Chapter 2 GLIM for binary data (9 class hours)

Chapter 3 GLIM for data with mean proportional to variance (9 class hours)

Chapter 4 GLIM for data with constant coefficient of variation (9 class hours)

Chapter 5 Multivariate GLIM for polytomous data (9 class hours)

Chapter 6 Quasi-likelihood and Estimating Equations (3 class hours)

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

Generalized Linear Models, Second Edition by P. McCullagh, John A. Nelder, CRC Press, Aug 1, 1989.

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		0		
课堂表现 Class Performance		0		
小测验 Quiz		30		
课程项目 Projects		0		
平时作业 Assignments		0		
期中考试 Mid-Term Test		30		
期末考试 Final Exam		0		
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)		0		


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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

教学负责人签字: 

日期: 2024年4月9日