

Tamkang University Academic Year 102, 2nd Semester Course Syllabus

Course Title	ANALYSIS OF CENSORED DATA	Instructor	MAN-HUA CHEN
Course Class	TLSXM1A MASTER'S PROGRAM, DEPARTMENT OF STATISTICS, 1A	Details	<ul style="list-style-type: none"> ◆ Selective ◆ One Semester ◆ 2 Credits
D e p a r t m e n t a l A i m o f E d u c a t i o n			
<p>I. Cultivate students with ability to conduct research on statistical theory.</p> <p>II. Cultivate students with ability for statistical programming.</p> <p>III. Cultivate students to become statistical professionals with management capabilities.</p> <p>IV. Cultivate students with international perspectives.</p>			
D e p a r t m e n t a l c o r e c o m p e t e n c e s			
<p>A. Ability to conduct research of statistical theory.</p> <p>B. Data analysis skills.</p> <p>C. Ability to acquire interdisciplinary knowledge.</p> <p>D. Logical thinking ability.</p> <p>E. Statistical consulting ability.</p>			
Course Introduction	<p>In recent years a number of papers appeared, extending these models to handle more complex failure time data. In this course, we will learn several types of censored data and focus on how to approach these. Moreover, we will learn the idea how to handle the correlated failure time, non-informative failure time, and non-susceptible failure time.</p>		

The Relevance among Teaching Objectives, Objective Levels and Departmental core competences

I.Objective Levels (select applicable ones) :

- (i) Cognitive Domain : C1-Remembering, C2-Understanding, C3-Applying,
C4-Analyzing, C5-Evaluating, C6-Creating
- (ii) Psychomotor Domain : P1-Imitation, P2-Mechanism, P3-Independent Operation,
P4-Linked Operation, P5-Automation, P6-Origination
- (iii) Affective Domain : A1-Receiving, A2-Responding, A3-Valuing,
A4-Organizing, A5-Charaterizing, A6-Implementing

II.The Relevance among Teaching Objectives, Objective Levels and Departmental core competences :

- (i) Determine the objective level(s) in any one of the three learning domains (cognitive, psychomotor, and affective) corresponding to the teaching objective. Each objective should correspond to the objective level(s) of ONLY ONE of the three domains.
- (ii) If more than one objective levels are applicable for each learning domain, select the highest one only. (For example, if the objective levels for Cognitive Domain include C3,C5,and C6, select C6 only and fill it in the boxes below. The same rule applies to Psychomotor Domain and Affective Domain.)
- (iii) Determine the Departmental core competences that correspond to each teaching objective. Each objective may correspond to one or more Departmental core competences at a time. (For example, if one objective corresponds to three Departmental core competences: A,AD, and BEF, list all of the three in the box.)

No.	Teaching Objectives	Relevance	
		Objective Levels	Departmental core competences
1	In recent years a number of papers appeared, extending these models to handle more complex failure time data. In this course, we will learn several types of censored data and focus on how to approach these. Moreover, we will learn the idea how to handle the correlated failure time, non-informative failure time, and non-susceptible failure time.	C3	ABE

Teaching Objectives, Teaching Methods and Assessment

No.	Teaching Objectives	Teaching Methods	Assessment
1	In recent years a number of papers appeared, extending these models to handle more complex failure time data. In this course, we will learn several types of censored data and focus on how to approach these. Moreover, we will learn the idea how to handle the correlated failure time, non-informative failure time, and non-susceptible failure time.	Lecture, Problem solving	Written test, Report

This course has been designed to cultivate the following essential qualities in TKU students

Essential Qualities of TKU Students	Description
◇ A global perspective	Helping students develop a broader perspective from which to understand international affairs and global development.
◇ Information literacy	Becoming adept at using information technology and learning the proper way to process information.
◇ A vision for the future	Understanding self-growth, social change, and technological development so as to gain the skills necessary to bring about one's future vision.
◇ Moral integrity	Learning how to interact with others, practicing empathy and caring for others, and constructing moral principles with which to solve ethical problems.
◆ Independent thinking	Encouraging students to keenly observe and seek out the source of their problems, and to think logically and critically.
◇ A cheerful attitude and healthy lifestyle	Raising an awareness of the fine balance between one's body and soul and the environment; helping students live a meaningful life.
◇ A spirit of teamwork and dedication	Improving one's ability to communicate and cooperate so as to integrate resources, collaborate with others, and solve problems.
◇ A sense of aesthetic appreciation	Equipping students with the ability to sense and appreciate aesthetic beauty, to express themselves clearly, and to enjoy the creative process.

Course Schedule

Week	Date	Subject/Topics	Note
1	103/02/17 ~ 103/02/23	Type of censored data	
2	103/02/24 ~ 103/03/02	Type of censored data	
3	103/03/03 ~ 103/03/09	Real data analysis	
4	103/03/10 ~ 103/03/16	Real data analysis	
5	103/03/17 ~ 103/03/23	Nonparametric maximum likelihood estimation	
6	103/03/24 ~ 103/03/30	Nonparametric maximum likelihood estimation	
7	103/03/31 ~ 103/04/06	Real data analysis	
8	103/04/07 ~ 103/04/13	Real data analysis	
9	103/04/14 ~ 103/04/20	Dependence structures	
10	103/04/21 ~ 103/04/27	Dependence structures	
11	103/04/28 ~ 103/05/04	Correlated censored time	
12	103/05/05 ~ 103/05/11	Correlated censored time	

13	103/05/12 ~ 103/05/18	Presentation_Student	
14	103/05/19 ~ 103/05/25	Presentation_Student	
15	103/05/26 ~ 103/06/01	Shared frailty models	
16	103/06/02 ~ 103/06/08	Statistical inference for shared frailty models	
17	103/06/09 ~ 103/06/15	Statistical inference for shared frailty models	
18	103/06/16 ~ 103/06/22	Final Exam	
Requirement			
Teaching Facility	Computer, Projector		
Textbook(s)	The Statistical Analysis of Interval-censored Failure Time Data, Jianguo Sun, Springer		
Reference(s)	Analysis of Multivariate Survival Data, Philip Hougaard, Springer The Frailty Model, Luc Duchateau and Paul Janssen, Springer		
Number of Assignment(s)	5 (Filled in by assignment instructor only)		
Grading Policy	◆ Attendance : % ◆ Mark of Usual : % ◆ Midterm Exam : % ◆ Final Exam : 30.0 % ◆ Other 〈HomeworkPresentation〉 : 70.0 %		
Note	This syllabus may be uploaded at the website of Course Syllabus Management System at http://info.ais.tku.edu.tw/csp or through the link of Course Syllabus Upload posted on the home page of TKU Office of Academic Affairs at http://www.acad.tku.edu.tw/CS/main.php . ※ Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.		