Tamkang University Academic Year 108, 2nd Semester Course Syllabus

Course Title	SURVIVAL ANALYSIS	Instructor	WANG, CHARLOTTE
Course Class	TSMCB3A DEPARTMENT OF MATHEMATICS (SECTION OF DATA SCIENCE AND MATHEMATICAL STATISTICS), 3A	Details	◆ General Course ◆ Selective ◆ 2nd Semester

Departmental Aim of Education

Ⅰ. To teach knowledge in mathematics.

Ⅱ. To train teaching professionals in mathematics.

Ⅲ. To develop independent and creative thinking.

Ⅳ. To establish ability to present oneself.

Ⅴ. To promote cooperative working spirit.

Ⅵ. To prepare self learning ability in multiple areas.

Subject Departmental core competences

C. To learn basics of probability and statistic.(ratio:50.00)

E. To obtain the ability to collect and analyze data.(ratio:50.00)

Subject Schoolwide essential virtues

2. Information literacy. (ratio:50.00)

5. Independent thinking. (ratio:50.00)

Course Introduction	The analysis of time-to-event data, generally called survival analysis, arises in many fields of study, including medicine, biology, public health, epidemiology, and demography. This course introduces various statistical models and methods for analyzing time-to-event data. In the second semester, we will focus on the Cox regression, some parametric survival models, recurrent events and competing risk.

The correspondences between the course's instructional objectives and the cognitive, affective, and psychomotor objectives.

Differentiate the various objective methods among the cognitive, affective and psychomotor domains of the course's instructional objectives.

I. Cognitive : Emphasis upon the study of various kinds of knowledge in the cognition of the course's veracity, conception, procedures, outcomes, etc.

II.Affective : Emphasis upon the study of various kinds of knowledge in the course's appeal, morals, attitude, conviction, values, etc.

III.Psychomotor: Emphasis upon the study of the course's physical activity and technical manipulation.

No.	Teaching Objectives	objective methods
1	Understand the Cox regression model, parametric survival models, recurrent events and competing risk. Know how to apply these methods to analyze time-to-event data.	Cognitive

The correspondences of teaching objectives : core competences, essential virtues, teaching methods, and assessment

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	CE	25	Lecture, Discussion, Practicum	Testing, Study Assignments, Discussion(including classroom and online), Activity Participation

Course Schedule

Week	Date	Course Contents	Note
1	109/03/02 ~ 109/03/08	Introduction and Review	
2	109/03/09 ~ 109/03/15	Chapter 4: Evaluating the Proportional Hazards Assumption	
3	109/03/16 ~ 109/03/22	Chapter 4: Evaluating the Proportional Hazards Assumption	
4	109/03/23 ~ 109/03/29	Chapter 4: Evaluating the Proportional Hazards Assumption (Quiz #1)	
5	109/03/30 ~ 109/04/05	Chapter 5: The Stratified Cox Procedure	
6	109/04/06 ~ 109/04/12	Chapter 5: The Stratified Cox Procedure	
7	109/04/13 ~ 109/04/19	Chapter 5: The Stratified Cox Procedure (Quiz #2)	
8	109/04/20 ~ 109/04/26	Chapter 6: Extension of the Cox Proportional Hazards Model for Time Dependent Variables	
9	109/04/27 ~ 109/05/03	Midterm Exam Week	

10	109/05/04 ~ 109/05/10	Chapter 6: Extension of the Cox Proportional Hazards Model for Time Dependent Variables	
11	109/05/11 ~ 109/05/17	Chapter 6: Extension of the Cox Proportional Hazards Model for Time Dependent Variables	
12	109/05/18 ~ 109/05/24	Chapter 6: Extension of the Cox Proportional Hazards Model for Time Dependent Variables (Quiz #3)	
13	109/05/25 ~ 109/05/31	Chapter 7: Parametric Survival Models	
14	109/06/01 ~ 109/06/07	Chapter 7: Parametric Survival Models	
15	109/06/08 ~ 109/06/14	Chapter 7: Parametric Survival Models	
16	109/06/15 ~ 109/06/21	Chapter 7: Parametric Survival Models (Quiz #4)	
17	109/06/22 ~ 109/06/28	Final Exam Week (Date:109/6/18-109/6/24)	
18	109/06/29 ~ 109/07/05	Supplementary teaching: Introduction to R	

Requirement	
Teaching Facility	Computer, Projector
Textbooks and Teaching Materials	Kleinbaum & Klein (2005). Survival Analysis, A Self-Learning Text, Springer
References	
Number of Assignment(s)	(Filled in by assignment instructor only)
Grading Policy	◆ Attendance： 40.0 % ◆ Mark of Usual：60.0 % ◆ Midterm Exam： % ◆ Final Exam： % ◆ Other〈 〉： %
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.**