Tamkang University Academic Year 105, 2nd Semester Course Syllabus

Course Title	CALCULUS	Instructor	LIN CHIEN-TAI
Course Class	TLWXB1A BACHELOR'S PROGRAM IN GLOBAL FINANCIAL MANAGEMENT (ENGLISH-TAUGHT PROGRAM), 1A	Details	◆ Required ◆ 2nd Semester ◆ 2 Credits

Departmental Aim of Education

Ⅰ. Acquisition of professional knowledge.

Ⅱ. Learning effective self-planning.

Ⅲ. Theoretical application of practical matters.

Ⅳ. Interpersonal communication and teamwork.

Ⅴ. Analysis of problems and recommendations.

Ⅵ. Awareness of Ethics as a global citizen.

Departmental core competences

A. Financial accounting professional skills.

B. To understand basic knowledge of business administration.

C. To communicate, negotiate, and collaborate to acomplish business projects by team work.

D. Knowledge of basic statistical theory.

E. Application of profession knowledge.

F. Have a firm grasp of the fundamental concepts in economics.

G. Have the ability to apply basic analytical tools to economic issues.

H. Students are equipped with professional knowledge of core courses.

I. Students can apply their profession to practice matters.

Course Introduction	This introductory calculus course covers differentiation and integration with applications in business, economics, and the social and life sciences. Topics to be discussed in this semester include: concepts of functions; limits and continuity; differentiation rules; curve sketching; related rates; optimization problems; exponential and logarithmic functions and their derivatives.

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	Students will be able to understand the concepts of limit and continuity of a function.	C4	HI
2	Students will be able to understand the theory and various interpretations of derivatives.	C4	HI
3	Students will be able to apply techniques of differentiation to solve real-world problems	C3	HI

Teaching Objectives, Teaching Methods and Assessment

No.	Teaching Objectives	Teaching Methods	Assessment
1	Students will be able to understand the concepts of limit and continuity of a function.	Lecture	Written test
2	Students will be able to understand the theory and various interpretations of derivatives.	Lecture	Written test
3	Students will be able to apply techniques of differentiation to solve real-world problems	Lecture	Written test

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	106/02/13 ~ 106/02/19	5.1 Antiderivatives and Indefinite Integrals	
2	106/02/20 ~ 106/02/26	5.2 Integration Using Logarithmic and Exponential Functions	
3	106/02/27 ~ 106/03/05	5.3 Definite Integrals and Areas	
4	106/03/06 ~ 106/03/12	5.4 Applications of Definite Integrals	
5	106/03/13 ~ 106/03/19	5.5 Further Applications of Definite Integrals	
6	106/03/20 ~ 106/03/26	5.6 Integration by Substitution	
7	106/03/27 ~ 106/04/02	6.1 Integration by Parts	
8	106/04/03 ~ 106/04/09	Spring break	
9	106/04/10 ~ 106/04/16	6.4 Numerical Integration	
10	106/04/17 ~ 106/04/23	Midterm Exam Week	
11	106/04/24 ~ 106/04/30	6.3 Improper Integrals	
12	106/05/01 ~ 106/05/07	7.1 Functions of Several Variables; 7.2 Partial Derivatives	

13	106/05/08 ~ 106/05/14	7.3 Optimizing Functions of Several Variables	
14	106/05/15 ~ 106/05/21	7.5 Lagrange Multipliers and Constrained Optimization	
15	106/05/22 ~ 106/05/28	7.6 Total Differentials and Approximate Changes	
16	106/05/29 ~ 106/06/04	7.7 Multiple Integrals	
17	106/06/05 ~ 106/06/11	7.7 Multiple Integrals	
18	106/06/12 ~ 106/06/18	Final Exam Week	

Requirement	1. No food, no chatting, and no phone call in class. 2. If you have a cold, please take a day off or wear a mask all time in class. 3. Check all your grades including scores from Teaching Assistant and midterm before the final examination. It is your responsibility to make sure your grades are recorded correctly in the computer of Teaching Assistant.
Teaching Facility	Projector
Textbook(s)	Geoffrey C. Berresford, Andrew M. Rockett, Brief Applied Calculus, Sixth Edition, Brools/Cole, 2013
Reference(s)	Other Calculus books in the library.
Number of Assignment(s)	(Filled in by assignment instructor only)
Grading Policy	◆ Attendance： 5.0 % ◆ Mark of Usual：15.0 % ◆ Midterm Exam： 35.0 % ◆ Final Exam： 45.0 % ◆ 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.**