Tamkang University Academic Year 104, 1st Semester Course Syllabus

Course Title	CALCULUS	Instructor	HAN-MING WU
Course Class	TLWXB1A THE BACHELOR OF GLOBAL FINANCIAL MANAGEMENT (ENGLISH PROGRAM), 1A	Details	◆ Required ◆ 1st 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 course introduces the theory of the Calculus, the calculation approaches and its applications. The contents include the (1) functions, graph of function, and limit, (2) differentiation and its applications, (3) exponential and logarithmic functions and their derivatives and so on. We aim to improve students' interests in learning and to develop their thinking and computing abilities.

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	(1) Students will be able to understand the concepts of the limits and the continuity of a function. (2) Students will be able to understand the the theory and applications of the derivatives and be able to do the calculation and curves graphing in practice. (3) Students will be able to understand the differentiation of exponential and logarithmic functions and their applications.	C2	HI

Teaching Objectives, Teaching Methods and Assessment

No.	Teaching Objectives	Teaching Methods	Assessment
1	(1) Students will be able to understand the concepts of the limits and the continuity of a function. (2) Students will be able to understand the the theory and applications of the derivatives and be able to do the calculation and curves graphing in practice. (3) Students will be able to understand the differentiation of exponential and logarithmic functions and their applications.	Lecture, Discussion	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	104/09/14 ~ 104/09/20	Course Introduction, 1.1~1.2: Functions, The Graph of a Function	
2	104/09/21 ~ 104/09/27	1.3~1.4: Linear Functions, Functional Models	
3	104/09/28 ~ 104/10/04	1.5: Limits, One-Sided Limits and Continuity	
4	104/10/05 ~ 104/10/11	1.6: One-Sided Limits and Continuity	
5	104/10/12 ~ 104/10/18	2.1~2.2: The Derivative, Techniques of Differentiation	Quiz (1)
6	104/10/19 ~ 104/10/25	2.3 Product and Quotient Rules; Higher-Order Derivative	
7	104/10/26 ~ 104/11/01	2.4~2.5: The Chain Rule, Marginal Analysis and Approximations Using Increments	
8	104/11/02 ~ 104/11/08	2.6: Implicit Differentiation and Related Rates	Quiz (2)
9	104/11/09 ~ 104/11/15	.1: Increasing and Decreasing Functions; Relative Extrema	
10	104/11/16 ~ 104/11/22	Midterm Exam Week	
11	104/11/23 ~ 104/11/29	3.2: Concavity and Points of Inflection	

12	104/11/30 ~ 104/12/06	3.3: Curve Sketching	
13	104/12/07 ~ 104/12/13	3.4~3.5: Optimization; Elasticity of Demand, Additional Applied Optimization	Quiz (3)
14	104/12/14 ~ 104/12/20	4.1: Exponential Functions; Continuous Compounding	
15	104/12/21 ~ 104/12/27	4.2: Logarithmic Functions	
16	104/12/28 ~ 105/01/03	4.3: Differentiation of Exponential and Logarithmic Functions	Quiz (4)
17	105/01/04 ~ 105/01/10	4.4: Additional Applications; Exponential Models	
18	105/01/11 ~ 105/01/17	Final Exam Week	

Requirement	
Teaching Facility	(None)
Textbook(s)	Laurence Hoffmann, Gerald Bradley, David Sobecki, and Michael Price, Calculus for Business, Economics and the Social and Life Sciences, Brief Edition 11/e. McGraw-Hill Science.
Reference(s)	Course webpage: http://www.hmwu.idv.tw (the syllabus is always subject to change according to the needs of the course as the professor sees fit)
Number of Assignment(s)	(Filled in by assignment instructor only)
Grading Policy	◆ Attendance： % ◆ Mark of Usual：30.0 % ◆ Midterm Exam： 25.0 % ◆ Final Exam： 30.0 % ◆ Other〈TA〉：15.0 %
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.**