

Tamkang University Academic Year 103, 1st Semester Course Syllabus

Course Title	CALCULUS	Instructor	KAU CHIN-MEI
Course Class	TLFXB1A DEPARTMENT OF INTERNATIONAL BUSINESS, 1A	Details	<ul style="list-style-type: none"> ◆ Required ◆ 1st 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			
<ul style="list-style-type: none"> 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. 			
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			
<ul style="list-style-type: none"> A. Financial accounting professional skills. B. To understand basic knowledge of business administration. C. To communicate, negotiate, and collaborate to accomplish 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	<p>This course is an introduction to calculus and its applications to the management, social, behavioral, and biomedical sciences, and other fields.</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	From a given data they learn how to get a function and its graph. From the function they learn how to find its optimization.	C4	DG

Teaching Objectives, Teaching Methods and Assessment

No.	Teaching Objectives	Teaching Methods	Assessment
1	From a given data they learn how to get a function and its graph. From the function they learn how to find its optimization.	Lecture, Discussion, Problem solving	Written test, Participation

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	103/09/15 ~ 103/09/21	Functions and their representations (1.1), Combining/transforming functions (1.2)	
2	103/09/22 ~ 103/09/28	Linear models and rates of change (1.3) Polynomial models & power functions (1.4)	
3	103/09/29 ~ 103/10/05	Exponential models (1.5) Logarithmic functions (1.6)	
4	103/10/06 ~ 103/10/12	Measuring change (2.1) Limits (2.2)	
5	103/10/13 ~ 103/10/19	Rate of change and derivatives (2.3) The derivative as a function (2.4)	
6	103/10/20 ~ 103/10/26	Shortcuts to finding derivatives (3.1) Marginal analysis (3.2)	
7	103/10/27 ~ 103/11/02	The product and quotient rules (3.3)	
8	103/11/03 ~ 103/11/09	The chain rule (3.4)	
9	103/11/10 ~ 103/11/16	Implicit differentiation and logarithms (3.5)	
10	103/11/17 ~ 103/11/23	Midterm Exam Week	
11	103/11/24 ~ 103/11/30	Exponential growth and decay (3.6) Related rates (4.1)	

12	103/12/01 ~ 103/12/07	Maximum and minimum values (4.2)	
13	103/12/08 ~ 103/12/14	Derivatives and shapes of curves (4.3)	
14	103/12/15 ~ 103/12/21	Asymptotes (4.4)	
15	103/12/22 ~ 103/12/28	Curve sketching (4.5)	
16	103/12/29 ~ 104/01/04	Optimization (4.6)	
17	104/01/05 ~ 104/01/11	Optimization in business and economics (4.7)	
18	104/01/12 ~ 104/01/18	Final Exam Week	
Requirement			
Teaching Facility	Computer, Projector, Other (black board)		
Textbook(s)	Brief Applied Calculus. Stewart & Clegg.		
Reference(s)			
Number of Assignment(s)	10 (Filled in by assignment instructor only)		
Grading Policy	◆ Attendance : 15.0 % ◆ Mark of Usual : 15.0 % ◆ Midterm Exam : 30.0 % ◆ Final Exam : 30.0 % ◆ Other (teaching assistant) : 10.0 %		
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.		