Tamkang University Academic Year 114, 1st Semester Course Syllabus

Course Title	CALCULUS	Instructor	YUE-CUNE CHANG
Course Class	TLAXB1B DEPARTMENT OF ACCOUNTING, 1B	Details	◆ General Course ◆ Required ◆ 1st Semester ◆ 2 Credits
Relevance to SDGs	SDG3 Good health and well-being for people SDG8 Decent work and economic growth		

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.

Subject Departmental core competences

A. Students can demonstrate that they have program basic knowledge of business and management.(ratio:40.00)

B. Students can demonstrate that they have capability in professional knowledge expression. (ratio:10.00)

C. Students can demonstrate that they have capability in using information technology. (ratio:10.00)

D. Students can demonstrate that they are critical thinkers.(ratio:40.00)

Subject Schoolwide essential virtues

1. A global perspective. (ratio:5.00)

2. Information literacy. (ratio:20.00)

3. A vision for the future. (ratio:10.00)

4. Moral integrity. (ratio:15.00)

5. Independent thinking. (ratio:30.00)

6. A cheerful attitude and healthy lifestyle. (ratio:5.00)

7. A spirit of teamwork and dedication. (ratio:10.00) 8. A sense of aesthetic appreciation. (ratio:5.00)	
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, etc.

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	Students are able to understand the concepts of limit, continuity, and derivatives of functions.	Cognitive
2	Students are able to use knowledge of derivatives to solve real life problems.	Cognitive

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

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	ABCD	12345678	Lecture, Discussion	Testing, Study Assignments
2	ABCD	12345678	Lecture, Discussion	Testing, Study Assignments

Course Schedule

Week	Date	Course Contents	Note
1	114/09/15 ~ 114/09/21	Limit and Continuity	
2	114/09/22 ~ 114/09/28	Rates of Change, Slopes, and Derivatives	

3	114/09/29～114/10/05	Some Differentiation Formulas	
4	114/10/06～114/10/12	The Product and Quotient Rules	
5	114/10/13～114/10/19	The Chain Rule	
6	114/10/20～114/10/26	Implicit Differentiation and Logarithms	
7	114/10/27～114/11/02	Exponential Growth and Decay	
8	114/11/03～114/11/09	Graphing Using the First Derivative	
9	114/11/10～114/11/16	Graphing Using the First and Second Derivatives	
10	114/11/17～114/11/23	Midterm Exam	
11	114/11/24～114/11/30	Related Rates	
12	114/12/01～114/12/07	Maximum and Minimum Values	
13	114/12/08～114/12/14	Derivatives and the Shapes of Curves	
14	114/12/15～114/12/21	Asymptotes	
15	114/12/22～114/12/28	Curve Sketching	
16	114/12/29～115/01/04	Optimization	
17	115/01/05～115/01/11	Optimization in Business and Economics	
18	115/01/12～115/01/18	Final Exam	
Key capabilities	Problem solving		
Interdisciplinary	STEAM course (S:Science, T:Technology, E:Engineering, M:Math, A field:Integration of Art and Humanist)		
Distinctive teaching	USR curriculum		
Course Content	Computer programming or Computer language (students have hands-on experience in related projects) Logical Thinking		

Requirement	
Textbooks and Teaching Materials	Using teaching materials from other writers:Textbooks
References	
Grading Policy	◆ Attendance： 10.0 % ◆ Mark of Usual：20.0 % ◆ Midterm Exam： 35.0 % ◆ Final Exam： 35.0 % ◆ Other 〈 〉： %
Note	This syllabus may be uploaded at the website of Course Syllabus Management System at https://web2.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. ※"Adhere to the concept of intellectual property rights" and "Do not illegally photocopy, download, or distribute." Using original textbooks is advised. It is a crime to improperly photocopy others' publications.