Tamkang University Academic Year 112, 1st Semester Course Syllabus

Course Title	CALCULUS	Instructor	CHIANG, CHIEH
Course Class	TLFBB1A DIVISION OF GLOBAL COMMERCE, DEPARTMENT OF INTERNATIONAL BUSINESS (ENGLISH-TAUGHT PROGRAM), 1A	Details	◆ General Course ◆ Required ◆ 1st Semester
Relevance to SDGs	SDG4 Quality education		

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 course introduces Calculus together with its applications. Topics include limits, differentiation and exponential/logarithmic Functions. Relevant applications to the areas of business, economics, and the social sciences will also be discussed.

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 expected to understand the concepts of limit and continuity, as well as being familiar with computing the derivatives of elementary functions such as polynomials and exponential/logarithmic functions. Also, they are expected to use these techniques to solve practical problems occuring in the relevant areas.	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	Testing, Practicum

Course Schedule

Week	Date	Course Contents	Note
1	112/09/11 ~ 112/09/17	1.1 The Cartesian Plane and the Distance Formula. 1.2 Graphs of Equations.	

2	112/09/18 ~ 112/09/24	1.3 Lines in the Plane and Slope. 1.4 Functions.	
3	112/09/25 ~ 112/10/01	1.5 Limits. 1.6 Continuity.	
4	112/10/02 ~ 112/10/08	2.1 The Derivatives and the Slope of a Graph. 2.2 Some rules for Differentiation.	
5	112/10/09 ~ 112/10/15	2.3 Rates of Change: Velocity and Marginals.	
6	112/10/16 ~ 112/10/22	2.4 The Product and Quotient Rules.	
7	112/10/23 ~ 112/10/29	2.5 The Chain Rule. 2.6 Higher-Order Derivatives.	
8	112/10/30 ~ 112/11/05	2.7 Implicit Differentiation. 2.8 Related Rates.	
9	112/11/06 ~ 112/11/12	Midterm Exam Week	
10	112/11/13 ~ 112/11/19	3.1 Increasing and Decreasing Functions. 3.2 Extrema and First-Derivative Test.	
11	112/11/20 ~ 112/11/26	3.3 Convacity and the Second-Derivative Test. 3.4 Optimization Problems.	
12	112/11/27 ~ 112/12/03	3.5 Business and Economic Applications. 3.6 Asymptotes.	
13	112/12/04 ~ 112/12/10	3.7 Curve Sketching: A summary. 3.8 Differentials and Marginal Analysis.	
14	112/12/11 ~ 112/12/17	4.1 Exponential Functions. 4.2 Natural Exponential Functions.	
15	112/12/18 ~ 112/12/24	4.3 Derivatives of Exponential Functions. 4.4 Logarithmic Functions.	
16	112/12/25 ~ 112/12/31	4.5 Derivatives of Logarithmic Functions. 4.6 Exponential Growth and Decay.	
17	113/01/01 ~ 113/01/07	Final Exam Week	
18	113/01/08 ~ 113/01/14	Flex week, learning activities should be arranged.	
Key capabilities			
Interdisciplinary			

Distinctive teaching	
Course Content	Logical Thinking
Requirement	
Textbooks and Teaching Materials	Using teaching materials from other writers:Textbooks Name of teaching materials: Brief Calculus: An Applied approach, 10th edition by Ron Larson
References	
Grading Policy	◆ Attendance： 　%　 ◆ Mark of Usual：20.0 %　 ◆ Midterm Exam： 40.0 % ◆ Final Exam： 40.0 % ◆ 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.**