

## Tamkang University Academic Year 111, 1st Semester Course Syllabus

Course Title	CALCULUS	Instructor	CHIANG, CHIEH
Course Class	TLFBB1B DIVISION OF GLOBAL COMMERCE, DEPARTMENT OF INTERNATIONAL BUSINESS (ENGLISH-TAUGHT PROGRAM), 1B	Details	<ul style="list-style-type: none"> <li>◆ General Course</li> <li>◆ Required</li> <li>◆ 1st Semester</li> </ul>
Relevance to SDGs	SDG4 Quality education		
Departmental Aim of Education			
<ul style="list-style-type: none"> <li>I. Acquisition of professional knowledge.</li> <li>II. Learning effective self-planning.</li> <li>III. Theoretical application of practical matters.</li> <li>IV. Interpersonal communication and teamwork.</li> <li>V. Analysis of problems and recommendations.</li> <li>VI. Awareness of Ethics as a global citizen.</li> </ul>			
Subject Departmental core competences			
<ul style="list-style-type: none"> <li>A. Students can demonstrate that they have program basic knowledge of business and management.(ratio:40.00)</li> <li>B. Students can demonstrate that they have capability in professional knowledge expression. (ratio:10.00)</li> <li>C. Students can demonstrate that they have capability in using information technology. (ratio:10.00)</li> <li>D. Students can demonstrate that they are critical thinkers.(ratio:40.00)</li> </ul>			
Subject Schoolwide essential virtues			
<ul style="list-style-type: none"> <li>1. A global perspective. (ratio:5.00)</li> <li>2. Information literacy. (ratio:20.00)</li> <li>3. A vision for the future. (ratio:10.00)</li> <li>4. Moral integrity. (ratio:15.00)</li> <li>5. Independent thinking. (ratio:30.00)</li> <li>6. A cheerful attitude and healthy lifestyle. (ratio:5.00)</li> </ul>			

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 problem occurring 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, Practicum	Testing

**Course Schedule**

Week	Date	Course Contents	Note
1	111/09/05 ~ 111/09/11	Moon Festival	
2	111/09/12 ~ 111/09/18	1.1 Functions, 1.2 The graph of a function	

3	111/09/19 ~ 111/09/25	1.3 Lines and linear functions, 1.4 Functional models	
4	111/09/26 ~ 111/10/02	1.5 Limits, 1.6 One-sided limits and continuity	
5	111/10/03 ~ 111/10/09	2.1 The derivative; 2.2 Techniques of differentiation	
6	111/10/10 ~ 111/10/16	2.3 Product and quotient rules; higher-order derivatives	
7	111/10/17 ~ 111/10/23	2.4 The chain rule	
8	111/10/24 ~ 111/10/30	2.5 Marginal analysis and approximations using increments	
9	111/10/31 ~ 111/11/06	2.6 Implicit differentiation and related rates	
10	111/11/07 ~ 111/11/13	Midterm Exam Week	
11	111/11/14 ~ 111/11/20	3.1 Increasing and decreasing functions; relative extrema	
12	111/11/21 ~ 111/11/27	3.2 Concavity and points of inflection	
13	111/11/28 ~ 111/12/04	3.3 Curve sketching	
14	111/12/05 ~ 111/12/11	3.4 Optimization; elasticity of demand	
15	111/12/12 ~ 111/12/18	3.5 Additional applied optimization	
16	111/12/19 ~ 111/12/25	4.1 Exponential functions; continuous compounding, 4.2 Logarithmic functions	
17	111/12/26 ~ 112/01/01	4.3 Differentiation of exponential and logarithmic functions, 4.4 Additional applications; exponential models	
18	112/01/02 ~ 112/01/08	Final Exam Week	

Requirement	
Teaching Facility	Computer
Textbooks and Teaching Materials	Calculus For Business, Economics, and the Social and Life Sciences (ISBN: 978-007-131071-0)
References	

Number of Assignment(s)	(Filled in by assignment instructor only)
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 <a href="http://info.ais.tku.edu.tw/csp">http://info.ais.tku.edu.tw/csp</a> or through the link of Course Syllabus Upload posted on the home page of TKU Office of Academic Affairs at <a href="http://www.acad.tku.edu.tw/CS/main.php">http://www.acad.tku.edu.tw/CS/main.php</a> . <b>※ Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.</b>