Tamkang University Academic Year 114, 2nd Semester Course Syllabus

Course Title	CALCULUS	Instructor	YUE-CUNE CHANG
Course Class	TLAXB1B DEPARTMENT OF ACCOUNTING, 1B	Details	◆ General Course ◆ Required ◆ 2nd Semester ◆ 2 Credits
Relevance to SDGs	SDG4 Quality education SDG12 Responsible consumption and production		

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: Integrals and it's applications, fuctions of several variables, trigonometric model, and power series approximation and Taylor series.

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 will be able to understand the concept of integration in calculus.	Cognitive
2	Students will be able to apply techniques of integration to solve real world problems.	Cognitive

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

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	AB	1234	Lecture	Testing, Study Assignments, Discussion(including classroom and online)
2	CD	5678	Lecture, Discussion	Testing, Study Assignments

Course Schedule

Week	Date	Course Contents	Note

1	115/02/23 ~ 115/03/01	The definite integral and fundamental theorem of calculus	
2	115/03/02 ~ 115/03/08	The net change theorem and the subsititution rule	
3	115/03/09 ~ 115/03/15	Integration by parts	
4	115/03/16 ~ 115/03/22	Area between curves	
5	115/03/23 ~ 115/03/29	Application to economics and biology	
6	115/03/30 ~ 115/04/05	Differential equations	
7	115/04/06 ~ 115/04/12	Improper Integrals	
8	115/04/13 ~ 115/04/19	Partial Derivatives	
9	115/04/20 ~ 115/04/26	Midterm Exam	
10	115/04/27 ~ 115/05/03	Lagrange multipliers	
11	115/05/04 ~ 115/05/10	Double integrals	
12	115/05/11 ~ 115/05/17	Derivatives of trigonometric functions and applications	
13	115/05/18 ~ 115/05/24	Integrals of trigonometric functions and applications	
14	115/05/25 ~ 115/05/31	Approximating functions	
15	115/06/01 ~ 115/06/07	Sequence and time series	
16	115/06/08 ~ 115/06/14	Power series	
17	115/06/15 ~ 115/06/21	Taylor series	
18	115/06/22 ~ 115/06/28	Final Exam	

Key capabilities	self-directed learning Problem solving
Interdisciplinary	STEAM course (S:Science, T:Technology, E:Engineering, M:Math, A field:Integration of Art and Humanist)
Distinctive teaching	Special/Problem-Based(PBL) Courses

Course Content	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.