

## Tamkang University Academic Year 108, 2nd Semester Course Syllabus

|  |   |            |  |
|--|---|------------|--|
| Course Title   | CALCULUS  | Instructor | HSIANG-CHUN HSU  |
| Course Class   | TLWXB1A<br>BACHELOR'S PROGRAM IN GLOBAL FINANCIAL<br>MANAGEMENT (ENGLISH-TAUGHT PROGRAM),<br>1A   | Details    | <ul style="list-style-type: none"> <li>◆ General Course</li> <li>◆ Required</li> <li>◆ 2nd Semester</li> </ul> |
| 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  |   |            |  |
| <p>I. Acquisition of professional knowledge.</p> <p>II. Learning effective self-planning.</p> <p>III. Theoretical application of practical matters.</p> <p>IV. Interpersonal communication and teamwork.</p> <p>V. Analysis of problems and recommendations.</p> <p>VI. Awareness of Ethics as a global citizen.</p> |   |            |  |
| S u b j e c t   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  |   |            |  |
| <p>A. Students can demonstrate that they have program basic knowledge of business and management.(ratio:50.00)</p> <p>D. Students can demonstrate that they are critical thinkers.(ratio:50.00)</p>  |   |            |  |
| S u b j e c t   S c h o o l w i d e   e s s e n t i a l   v i r t u e s  |   |            |  |
| <p>2. Information literacy. (ratio:20.00)</p> <p>5. Independent thinking. (ratio:80.00)</p>  |   |            |  |
| Course Introduction  | <p>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: antiderivatives and indefinite integrals, definite integrals and areas, fundamental theorem of calculus, integration techniques, calculus of several variables, Lagrange multipliers and constrained optimization.</p> |            |  |
|  |   |            |  |

**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   | AD               | 25                | Lecture, Discussion | Testing, Study Assignments, Discussion(including classroom and online) |
| 2   | AD               | 25                | Lecture, Discussion | Testing, Study Assignments, Discussion(including classroom and online) |

**Course Schedule**

| Week | Date                  | Course Contents                              | Note |
|------|-----------------------|--|------|
| 1    | 109/03/02 ~ 109/03/08 | 5.1 Cost, Area, and the Definite Integral    |      |
| 2    | 109/03/09 ~ 109/03/15 | 5.2 The Fundamental Theorem of Calculus      |      |
| 3    | 109/03/16 ~ 109/03/22 | 5.3 The Net Change Theorem and Average Value |      |
| 4    | 109/03/23 ~ 109/03/29 | 5.4 The Substitution Rule                    |      |
| 5    | 109/03/30 ~ 109/04/05 | 5.5 Integration by Parts                     |      |
| 6    | 109/04/06 ~ 109/04/12 | 6.1 Area Between Curves                      |      |
| 7    | 109/04/13 ~ 109/04/19 | 6.2 Applications to Economics                |      |
| 8    | 109/04/20 ~ 109/04/26 | 6.5 Improper Integrals                       |      |

|                                  |  |  |  |
|----------------------------------|--|--|--|
| 9                                | 109/04/27 ~<br>109/05/03   | Midterm Exam Week                        |  |
| 10                               | 109/05/04 ~<br>109/05/10   | 6.6 Probability                          |  |
| 11                               | 109/05/11 ~<br>109/05/17   | 7.1 Functions of Several Variables       |  |
| 12                               | 109/05/18 ~<br>109/05/24   | 7.2 Partial Derivatives                  |  |
| 13                               | 109/05/25 ~<br>109/05/31   | 7.3 Maximum and Minimum Values           |  |
| 14                               | 109/06/01 ~<br>109/06/07   | 7.4 Lagrange Multipliers                 |  |
| 15                               | 109/06/08 ~<br>109/06/14   | Appendix D: Double Integrals             |  |
| 16                               | 109/06/15 ~<br>109/06/21   | Review                                   |  |
| 17                               | 109/06/22 ~<br>109/06/28   | Final Exam Week (Date:109/6/18-109/6/24) |  |
| 18                               | 109/06/29 ~<br>109/07/05   | Supplementary teaching                   |  |
| Requirement                      | (Exam 1)*20%+(Exam 2)*20%+(Exam 3)*20%+(highest Exam)*10%+(Others)*30%   |  |  |
| Teaching Facility                | (None)   |  |  |
| Textbooks and Teaching Materials | Brief Applied Calculus, International Edition (2015), by Stewart and Clegg.  |  |  |
| References                       |  |  |  |
| Number of Assignment(s)          | (Filled in by assignment instructor only)  |  |  |
| Grading Policy                   | ◆ Attendance :           %   ◆ Mark of Usual :           %   ◆ Midterm Exam :           %<br>◆ Final Exam :           %<br>◆ Other 〈See Requirement〉 : 100.0 %   |  |  |
| 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> .<br><b>※ Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.</b> |  |  |