TQF.3

☑ Bachelor's Degree

☐ Master's Degree

Course Specification

Course Code: ICM1101

Course Title: Business Mathematics

Credits: 3(3-0-6)

Program: International Business

International College

Suan Sunandha Rajabhat University

(SSRUIC)

Semester : 1 **Academic Year :** 2018

Section 1 General Information

1. Code and Course Title :

Course Code: ICM1101

Course Title (English): Business Mathematics

Course Title (Thai) คณิตศาสตร์ธุรกิจ

2. Credits : 3(3-0-6)

3. Curriculum and Course Category :

3.1 Curriculum: Bachelor of Business Administration, Program in International Business (International Program), Revised in 2011.

3.2 Course Category:

☑ General Education   ☐Major Course

☐ Elective Course   ☐ Others …………….

4. Lecturer Responsible for Course and Instructional Course Lecturer (s) :

4.1 Lecturer Responsible for Course:

Assoc.Prof. Chaweewan Kaewsaiha

4.2 Instructional Course Lecturer(s):

Assoc.Prof. Chaweewan Kaewsaiha

5. Contact/Get in Touch

Room Number: 303   Tel. 081-484-4361

E-mail: chaweewan.ka@ssru.ac.th

6. Semester/ Year of Study

6.1 Semester: 1   Year of Study 2018

6.2 Number of the students enrolled: 15 students

7. Pre-requisite Course (If any)

None

8. Co-requisite Course (If any)

None

9. Learning Location

Building: International College, Nakhon Pathom Education Center

Thursday 13.00 – 16.00   Room no. 409

10. Last Date for Preparing and Revising this Course:

20 May 2018

Section 2 Aims and Objectives

1. Course Aims

At the end of this course, the student will reach to five domains in the following areas of performance:

1.1 Morals and Ethics
   (1) The ability to deliver or to complete a required task at or the appointed time,
   (2) The ability to do the right thing according to the values, beliefs and principles they claim to hold,
   (3) The ability to make decisions in business according to moral concepts and judgments.

1.2 Knowledge
   (1) The ability to identify the business theories and describe important case studies,
   (2) The ability to provide an analysis and provide the solution to real world problems,
   (3) The ability to use business knowledge integrated with other disciplines.

1.3 Cognitive Skills
   (1) The ability to gather and summarize information, and conduct research,
   (2) Self-study and sharing information to the class,
   (3) The ability to solve problems from case studies.

1.4 Interpersonal Skills and Responsibility
   (1) The ability to communicate in English,
   (2) The ability to use English to solve business problem,
   (3) Initiate some new business ideas and have leadership.

1.5 Numerical Analysis, Communication and Information Technology Skills
   (1) Be able to use basic ICT skills and apply them to daily life,
   (2) Be able to use statistics and mathematics to solve business problems,
   (3) Be able to use IT to search for new knowledge and apply numerical analysis in communication with emphasis on practical and real life experiences.

2. Objectives for Developing / Revising Course (content / learning process / assessment / etc.)

This course should encourage students on applying integrated mathematical process and English skills for business context. In this case, cooperative learning is required to improve learning activity. The process of cooperative learning will encourage students to participate more on this activity.

Section 3 Characteristics and Operation

1. Course Outline

Business Arithmetic, Algebra, linear equation, inequalities, linear programming, functions, and graphs, quadratic equations, trigonometric function and graphs, arithmetic and geometric progressions, sequences and series

เลขคณิตทางธุรกิจ พีชคณิต สมการเชิงเส้น อสมการ โปรแกรมเชิงเส้น ฟังก์ชันและกราฟ สมการควอดราติก ฟังก์ชันตรีโกณมิติและกราฟ การก้าวหน้าเลขคณิตและเรขาคณิต ลำดับและอนุกรม

2. Time Length per Semester (Lecture – hours / Practice – hours / Self Study – hours)

Lecture (hours)	Remedial Class (hours)	Practice/ Field Work/ Internship (hours)	Self-Study (hours)
48 hours	-	96 hours	3+ (if any)

3. Time Length per Week for Individual Academic Consulting and Guidance

(The lecturer responsible for course identifies the information, for example, 1 hour / week)

3.1 Self consulting at the lecturer's office: Room No. 303
Building: International College (Nakhon Pathom Education Center/SSRU)

3.2 Consulting via office telephone/mobile phone: 081-484-4361

3.3 Consulting via E-Mail: chaweewan.ka@ssru.ac.th

3.4 Consulting via Social Media (Facebook/Twitter/Line)
None

3.5 Consulting via Computer Network (Internet/Web board)
Teacher Website: http://www.teacher.ssru.ac.th/chaweewan

Section 4 Developing Student's Learning Outcomes

1. Morals and Ethics

1.1 Morals and Ethics to be developed

● (1) The ability to deliver or to complete a required task at or the appointed time,

○ (2) The ability to do the right thing according to the values, beliefs and principles they claim to hold,

○ (3) The ability to make decisions in business according to moral concepts and judgments.

1.2 Teaching Strategies

(1) The team of students will help to remind other team members to be on time,

(2) Provide an example of integrity in classroom such as no plagiarism,

(3) Provide a case study that explains business ethics.

1.3 Evaluation Strategies

(1) Checking student attendance every class,

(2) Evaluate from how many students cheating in exam,

(3) Evaluate from students' responsibility on their contribution on group project.

2. Knowledge

2.1 Knowledge to be acquired

○ (1) The ability to identify the business theories and describe important case study,

○ (2) The ability to provide an analysis and provide the solution to real world problems,

● (3) The ability to use business knowledge integrated with other disciplines.

2.2 Teaching Strategies

(1) Use Problem-based learning,

(2) Use cooperative learning techniques,

(3) Invite guest speaker who is an expert in real world business.

2.3 Evaluation Strategies

(1) Pop-quiz, midterm, and final exam,

(2) A group project,

(3) Class Presentation.

3. Cognitive Skills

3.1 Cognitive Skills to be developed

○ (1) The ability to gather and summarize information, and conduct research,

○ (2) Self-study and sharing information to the class,

○ (3) The ability to solve problems from case studies.

3.2 Teaching Strategies

(1) Group presentations,

(2) Participate in real competitions such as business plan writing,

(3) Problem-based learning.

3.3 Evaluation Strategies

(1) Evaluate individual and group research and studies,

(2) Evaluate in class activities and personal involvement,

(3) Class presentations and discussion.

4. Interpersonal Skills and Responsibility

4.1 Interpersonal Skills and Responsibility to be developed

● (1) The ability to communicate in English,

○ (2) The ability to use English to solve business problem**,**

○ (3) The ability to initiate some new business ideas and have leadership.

4.2 Teaching Strategies

(1) Allow students with work in unfamiliar situation with new team members**,**

(2) Practice business manner and how to deal with customers**,**

(3) Use advance business English to communicate in class and with lecturers**.**

4.3 Evaluation Strategies

(1) How students participate in teamwork,

(2) How students use advance business English in their presentation,

(3) Evaluate students' business creativities and innovativeness by keynote speaker involvement or students contest organization.

5. Numerical Analysis, Communication and Information Technology Skills

5.1 Numerical Analysis, Communication and Information Technology Skills to be developed

○ (1) Be able to use basic ICT skills and apply them to daily life,

● (2) Be able to use statistics and mathematics to solve business problems,

● (3) Be able to use IT to search for new knowledge and apply numerical analysis in communication with emphasis on practical and real life experiences.

5.2 Teaching Strategies

(1) Use case studies that allow students to implement their knowledge of statistics and mathematics to solve business problems,

(2) Use activities such as encouraging students to show their work in an exhibition,

(3) Students will form a team and do the group projects that require two-ways communication and develop their social skills.

5.3 Evaluation Strategies

(1) Evaluate the correct application of statistics and mathematics to solve problems,

(2) Evaluate their ability to present their work in at an exhibition,

(3) Evaluate their ability to use software computer such as Photoshop doing their work.

Remark: Symbol ● means 'major responsibility'

Symbol ○ means 'minor responsibility'

No symbol means 'no responsibility'

The above symbols were shown in 'Curriculum Mapping' of TQF 2. (Program Specification)

Section 5 Lesson Plan and Assessment

1. Lesson Plan

Week	Topic/Outline	Periods (hours)	Learning Activities and Medias
1-2	**Unit 1**Mathematics Expression in English	6	1. Introduce mathematics expression in English: *terminology and notation, reading numbers and operations, translating English in Algebra* 2. Handouts, Slides, Worksheet and Video
3-4	**Unit 2**Basic Arithmetic in Business	6	1. Introduce the use of arithmetic in business: *rate, ratio, proportion and types of proportion* 2. Handouts, Slides, Worksheet and Video
5-7	**Unit 3**Linear Equation and Inequality in Business Settings	9	. Introduce *linear equation and inequality* by using contextual learning in business 2. Students solve business word problem using concepts and principles of equations and inequalities 3. Handouts, Slides, Worksheet and Video
8	**Midterm Examination**	3	- Paper test
9-10	**Unit 4**Linear Programming	6	1. Students interpret word problem into mathematical model using *linear programming*. 2. Students use the Geometer's Sketchpad to construct concepts in solving problem of linear programming 3. Handouts, Slides, Worksheet and Video

Week	Topic/Outline	Periods	Learning Activities and Medias
11-12	**Unit 5** Functions and Graphs in Business Settings	6	1. Students focus on *functions and their properties including polynomial, exponential, logarithmic, and trigonometric function* 2. Students use the Geometer's Sketchpad to construct concepts and solve word problem in business 3. Handouts, Slides, Worksheet and Video
13-14	**Unit** 6Arithmetic and Geometric Progression	6	1. Students compare the pattern of *progression,* 2. Prepare data to demonstrate the progression, 3. Handouts, Slides, Worksheet and Video
15-16	**Unit 7** Sequence and Series	6	1. Introduce *sequence and series* related to business contexts 2. Prepare data to demonstrate the sequence and series 3. Handouts, Slides, Worksheet and Video
17	**Final Examination**	3	- Paper test
Total of Hours		**48+**	Include mid-term examination and extra activities for searching related topics

2. Learning Assessment Plan

	Learning Outcomes	Assessment Activities	Time Schedule (Week)	Proportion for Assessment (%)
1	**Ethic and Morals** (1) The ability to deliver or to complete a required task at or the appointed time; (2) The ability to do the right thing according to the values, beliefs and principles they claim to hold; (3) The ability to make decisions in business according to moral concepts and judgments.	Group Discussion	Throughout semester	10 %
2	**Knowledge** (1) The ability to identify the business theories and describe important case studies; (2) The ability to provide an analysis and provide the solution to real world problems; (3) The ability to use business knowledge integrated with other disciplines.	1. Tests (Formative and Summative)	At the end of each unit and at the end of course	40%

	Learning Outcomes	Assessment Activities	Time Schedule (Week)	Proportion for Assessment (%)
3	**Cognitive Skills** (1) The ability to gather and summarize information, and conduct research; (2) Self-study and sharing information to the class; (3) The ability to solve problems from case studies.	1. Formative Test 2. Summative Test	At the end of each unit and at the end of course	15 %
4	**Interpersonal Skills and Responsibilities** (1) The ability to communicate in English; (2) The ability to use English to solve business problem; (3) Initiate some new business ideas and have leadership.	(1) Cooperative learning (2) Group discussion	Throughout semester	5 %
5	**Numerical Analysis, Communication and Information Technology Skills** (1) Be able to use basic ICT skills and apply them to daily life; (2) Be able to use statistics and mathematics to	1. Individual task 2. Group report presentation	Throughout semester	30 %

	Learning Outcomes	Assessment Activities	Time Schedule (Week)	Proportion for Assessment (%)
	solve business problems; (3) Be able to use IT to search for new knowledge and apply numerical analysis in communication with emphasis on practical and real life experiences.			

Section 6 Learning and Teaching Resources

1. Textbook and Main Documents

Schultheis, R.A.&Kaczmarski, R.M. (2006) .Business Mathematics. Ohio:

    Thomson South-Western

2. Important Documents for Extra Study

Kaewsaiha, C. (2010). English for MathematicsTeachers, lecture notes

    distributed in ICM1101 Business Mathematics at Suan Sunandha

    Rajabhat University on 1 September 2015

3. Suggestion Information (Printing Materials/Website/CD/Others)

  http://www.sophia.org/tutorials/business-math-business-arithmetic
    http://eldar.mathstat.uoguelph.ca/dashlock/math1030/pdf/LN1030.pdf

Section 7 Course Evaluation and Revising

1. Strategies for Course Evaluation by Students

  Using survey questions to collect information from the students' opinions to improve the course and enhance the curriculum. Examples of questions:

      (1) Content objectives were made clear to the students.

      (2) The content was organized around the objectives.

      (3) Content was sufficiently integrated.

(4) Content was sufficiently integrated with the rest of the first year curriculum.

(5) The instructional materials used were effectively.

(6) The learning methods appropriate assessed the students' understanding of the content.

(7) Overall, Students are satisfied with the quality of this course .

…………………….. etc. ……………………………

2. Strategies for Course Evaluation by Lecturer

2.1 Lecturer observes the class and discusses the results as follow:

(1) The lecturer is well prepared for class sessions.

(2) The lecturer answers questions carefully and completely.

(3) The lecturer uses examples to make the materials easy to understand.

(4) The lecturer stimulated interest in the course.

(5) The lecturer made the course material interesting.

(6) The lecturer is knowledgeable about the topics presented in this course.

(7) The lecturer treats students respectfully.

(8) The lecturer is fair in dealing with students.

(9) The lecturer makes students feel comfortable about asking question.

(10) Course assignments are interesting and stimulating.

(11) The lecturer's use of technology enhanced learning in the classroom.

2.2 The Dean or head of program construct assessment items to evaluate four dimensions of lecturer's competencies: teaching skills, organization and presentation of materials, management of the learning environment, and teaching attitudes.

3. Teaching Revision

Lecturer revises teaching / learning process based on the results from the students' survey question, observation, suggestion, and classroom research.

4. Feedback for Achievement Standards

The evaluation is conducted by the Administrator Committee in order to assessment process and grading.

5. Methodology and Planning for Course Review and Improvement

5.1 Revise and develop course structure and learning process every year.

5.2 Seek advisory from expertise in order to enhance content and make it up-to-date with the changing environment.

Curriculum Mapping Illustrating the Distribution of Program Standard Learning Outcomes to Course Level

Courses	1. Morals and Ethics			2. Knowledge			3. Cognitive Skills			4. Interpersonal Skills and Responsibility			5. Numerical Analysis, Communication and Information Technology Skills		
Course Category:	● **Major Responsibility**									○ **Minor Responsibility**					
General Education Course	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Course Code: ICM1101 **Course Title:** Business Mathematics	●	○	○	○	○	●	○	○	○	●	○	○	○	●	●