TQF.3 Course Specification

Course Code : MTP5106

Course Title: Measurement and Evaluation in Mathematics

Credits: 3(3-0-6)

Semester /Academic Year : 2/2015

Students : Master of Arts Program in Mathematics Education

Lecturers : Dr.Boonthong Boontawee

Asst.Prof. Dr. SupotchChaiyasang

International College, SuanSunandhaRajabhat University

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Section 1 General Information

1. Code and Course Title: MTP5106 Measurement and Evaluation in Mathematics

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

3. Curriculum and Course Category :

This course of Master of Arts, International College, SSRU is categorized in *Requirement Course: Cluster in International Teaching Profession* **.**

4. Lecturers:

Dr.Boonthong Boontawee

Asst.Prof. Dr. SupotchChaiyasang

5. Year / Semester

Graduate Student Year 1 / Semester 2/2015

6. Prerequisite Course

None

7. Co-requisite Course :

None

8. Learning Location

Building Number **:**21

Tuesday 9.00 – 12.00 Room No. 2122

9. Last Date for Preparing and Revising this Course:

May 7 , 2016

Section 2 Objectives and Purposes

1. Course Objectives

At the end of this course, the student will be able to perform in the following areas of performance :

(1) Able to perform the authentic assessment and measurement;

(2) Able to use the evaluation results to improve the learning and curriculum management.

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

According to TQF (Thailand Quality Framework: HEd.) and the Teachers'Council of Thailand with the standards of professional knowledge and experience for requirement courses, graduate students program in mathematics education should have essence of knowledge in educational measurement and evaluation as follows:

Essence of knowledge:

(1) Principles and techniques of educational measurement and evaluation;

(2) Creation and implementation of educational measurement and evaluation tools;

(3) Authentic assessment;

(4) Portfolio assessment;

(5) Performance assessment;

(6) Formative and summative evaluation.

Competencies:

(1) Able to perform the authentic assessment and measurement;

(2) Able to use the evaluation results to improve the learning and curriculum management.

Section 3 Course Structure

1. Course Outline

Assessment and evaluation of teaching and learning. Principles and techniques of educational assessment / measurement and evaluation; Educational assessment / measurement and evaluation tools; Types of assessment and evaluation: Authentic assessment, Portfolio assessment, Performance Assessment, Formative, summative and process evaluation.

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

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

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

1 hour / week

Section 4 Developing Student's Learning Outcomes

Learning Standards/Outcomes	**Learning Activities**	**Learning Assessment**
1. Ethics and Morals To have ethic behavior (personal responsibility , corporate responsibility) and moral reasoning.	Work in group to build up team work skills and attitudes.	Group discussion Report

Learning Standards/Outcomes	Learning Activities	Learning Assessment
2. Knowledge (1) Be able to compile courses to formulate a learning plan for assessment learning /teaching mathematics. (2) Be able to design the measurement and evaluation tools appropriate to outcome standards; (3) Be able to select, develop assessment instrument that evaluate learning performance.	1. Introduce the educational measurement and evaluation. 3. Have the students develop their plans to design assessment instruments.	1.Term papers 2.Group report presentation 3. Case Study of students' results taken O-NET, TIMSS, PISA
3. Cognitive Skills (1) Be able to analyze learning outcome standards of mathematics curriculum. (2) Able to design assessment instruments.	1. Use research-based learning and internet-based learning to construct cognitive skills in preparing mathematics formative and summative evaluation. 2. Discussion and presentation of research findings on O-NET , TIMSS, and PISA.	1. Individual portfolio 2. Term papers 3. Group report presentation
4. Interpersonal Skills and Responsibilities Can adjust to work in team	Students work in group by using PBL technique .	Group report presentation

Learning Standards/Outcomes	Learning Activities	Learning Assessment
both as leader or follower.		
5. Numerical Analysis, Communication and Information Technology Skills 5.1 Have statistical and mathematical skills to present research finding on learning assessment. 5.2 Can use correct language in oral and written presentations. 5.3 Can use computer and IT to follow the progress management in educational assessment.	1. Use research-based learning and internet-based learning to analyze learning outcomes 2. Students work in group to use technology for assessment.	1. Individual portfolio 2. Term papers 3. Group report presentation
6. Learning Management Skills 6.1 Be able to design learning assessment. 6.2 Be able to develop mathematics assessment using framework of O-NET, TIMSS, and PISA.	Use principles of learning assessment to develop learners.	1. Individual portfolio 2. Term papers 3. Group report presentation

Section 5 Lesson Plan and Assessment

Types of assessment and evaluation: Authentic assessment, Portfolio assessment, Performance Assessment, Formative, summative and process evaluation.

1.Lesson Plan

Week	Topic/Outline	Hours	Learning Activities and Medias
1-2	**Unit 1** Assessment and evaluation of teaching and learning	6	1. Introduce the purpose of assessment and evaluation. 2. Study some examples of testing in mathematics. 3. Students work with a group of five to discuss about the relevance of learning outcomes and assessment.
3 - 4	**Unit 2** Principles and techniques of educational a ssessment	6	1. Introduce principle of learning assessment and techniques. 2. Students work with a group to discuss about learning outcomes, activities and assessment.
5	**Unit 3** Educational Measurement and Evaluation	3	1.Introduce national standards and framework for educational measurement and evaluation. 2. Students work with a group to discuss about standards of O-NET, TIMSS, and PISA.

Week	**Topic/Outline**	**Hours**	**Learning Activities and Medias**
6 - 7	**Unit** 4 Measurement and Evaluation Tools	6	1. Introduce tools for measurement and evaluation. 2. Students discuss about students' results in taking O-NET. TIMSS, and PISA.
8	**Mid-Term Test**		
9 - 10	**Unit** 5 Types of Assessment : Authentic Assessment	6	1. Introduce types of assessment in mathematics. 2. Students discuss about how to design authentic assessment.
11	**Unit 6** Portfolio Assessment,	3	1. Introduce portfolio assessment in mathematics. 2. Students discuss about how to design portfolio assessment.
12-13	**Unit 7** Performance Assessment	6	1. Introduce principles, procedures, and elements of performance assessment. 2. Students work in groups discuss about performance assessment.
14 – 15	**Unit 8** Formative and Summative Evaluation	6	1. Introduce principles of formative and summative evaluation. 2. Students work in groups design formative and summative evaluation.

Week	Topic/Outline	Hours	Learning Activities and Medias
			2.Students work in groups of five discuss about educational standards; Internal and external quality assurance.
16	**Final Examination**	3	**Paper-Test**
Total of Hours		**48**	

Remark : Reserve 1 – 2 weeks for searching related topics.

2. Learning Assessment Plan

Learning Outcomes	Assessment Activities	Time Schedule (Week)	Proportion for Assessment (%)
1. Ethics and Morals To have ethic behavior (personal responsibility , corporate responsibility) and moral reasoning.	1.Individual portfolio 2.Group discussion	Through out semester	5 %
2. Knowledge (1) To formulate a blueprint of test . (2) To design assessment tools appropriate to learning outcomes.	1.Term papers 2.Group report presentation	Through out semester	40 %
3. Cognitive Skills To analyze learning outcomes based on level of thinking.	1. Term papers 2. Group report presentation	Through out semester	30 %
4. Interpersonal Skills and Responsibilities 4.1 Have responsibility for assignment. 4.2 Can adjust to work in team both as leader or follower.	1. Checklists 2. Interviews	Through out semester	5 %

Learning Outcomes	Assessment Activities	Time Schedule (Week)	Proportion for Assessment (%)
5. Numerical Analysis, Communication and Information Technology Skills 5.1 Have statistical and mathematical skills to create tools of assessment. 5.2 Can use correct language in oral and written presentations. 5.3 Can use computer and IT to follow the progress of assessment and evaluation.	1. Individual portfolio 2. Term papers 3. Group report presentation	Through out semester	10 %
6. Learning Management Skills Be able to design tools of assessment and evaluation.	1. Individual portfolio 2. Term papers 3. Group report presentation	Through out semester	10 %

Section 6 Learning and Teaching Resources

1. Textbook and Main Documents

Rani, J.S. (2004).*Educational Measurement and Evaluation.* New Delhi: Discovery Publishing House Private Limited.

2. Important Documents for Extra Study

Stenmark, J.K. (1989).*Assessment alternatives in Mathematics: An Overview of Assessment Techniques that Promote Learning.* Berkeley: University of California.

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

Keywords for searching : educational measurement, educational evaluation, educational assessment

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 Lecturers team observe the class and discuss 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 assignment are interesting and stimulating.
(11) The lecturer's use of technology enhanced learning in the classroom.

…….. etc. ……

1.2 The director / 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 questions , the lecturer team's observation, and classroom research.

4. Feedback for Achievement Standards

International College Administrator Committee monitor to assessment process and Grading.

5. Methodology and Planning for Course Review and Improvement

(1) Revise and develop course structure and process every two years.

(2) Assign different lecturers teach this course to enhance students' performance.