Elementary Mathematics Teaching (Master Program)

1. Guideline

Elementary mathematics teaching master program began to student admission firstly in 2004/2005 academic year within Institution of Science. Following foundation of Institution of Education, the master program was incorporated into Institution of Education. In addition to compulsory lessons related to basic education sciences, elective lessons relevant to content education are also included within the program. Main purpose of the program is to educate elementary mathematics teachers who are equipped with effective knowledge, manage to follow developments of the domain and do research individually.

2. Degree Acquired

The students who accomplish the program deserve to receive diploma of elementary mathematics teaching master program.

3. Level of degree

Master of Science degree. (MS)

4. Admission Requirements

The general admission requirements are required for Turkish and foreign students to start the program.

5. Validation of Prior Learning

In Turkish Higher Education institutions, validation of prior formal learning, vertical, horizontal, and the university is determined by the Board of Higher Education. This is implemented by the regulations of "INSTITUTIONS OF HIGHER EDUCATION PROGRAMS UNDERGRADUATE STUDENTS AND SWITCHING, DOUBLE MAJOR, MINOR AND CREDIT TRANSFER BETWEEN CORPORATE ACTION ON BASIS OF REGULATION".

Turkey certificate-based or experience-based learning outside of formal educational institutions in recognition for some of the computer and foreign language courses at the beginning of each academic semester exams of exemption are organized. Students who take the exam and pass the courses in the curriculum are exempt from the relevant.

6. Conditions and Rules for Sufficiency

Students have to complete all lessons of the program without FF, DZ or YZ final grade. Also, they have to complete minimum 32 credits and have transcripts that is minimum 3,00 on a 4,00 point scale.

7. Program Profile

The aim of the program is training elementary mathematics teachers who have the following characteristics;

- ✓ *Having active knowledge of elementary mathematics education and using technology professionally,*
- ✓ *Having highest level of problem solving and reasoning skills,*
- ✓ *Examining the process of students' mathematical knowledge creation and intellectual closely, planning an advanced level of course content and designing instructional materials,*
- ✓ *Being informed about current issues in elementary mathematics education and reviewing the literature to carry out independent researches,*
- ✓ *Identifying the research problem, choosing an appropriate research model, being capable of to process the data acquired in the process of scientific research, performing statistical analysis and making interpretation,*
- ✓ *Researching on a subject or project as a group.*

8. Program Outcomes

- ✓ *Have high level field knowledge of mathematics education.*
- ✓ *Know and apply contemporary teaching methods and techniques and the methods of measurement and evaluation about teaching profession.*
- ✓ *Have the ability to use information and communication technologies for teaching mathematical concepts effectively.*
- ✓ *Know developmental characteristics and learning styles of related students. Do effective planning, material development and applications which comply with these specifications.*
- ✓ *Have the scientific and analytical thinking skills and know scientific research methods and techniques at the level of independent researching and make use of them.*
- ✓ *Follow national and international levels of development and changes in mathematics education.*
- ✓ *Have knowledge of general culture at the level of carrying out interdisciplinary studies and associating their studies with different disciplines.*
- ✓ *Have the skills to improve and apply original activities and teaching materials for students on issues related to mathematics education.*

9. Job Facilities for Graduates

The graduates of Elementary School Mathematics Education MSc. program can find a job as a teacher in various official and special corporations, as a research assistant or instructor in state and special universities.

10. Post-Graduate Transitions

Candidates who complete the master program accomplishedly can become a doctorate student if they have an ALES (Academic Staff and Graduate Education Test) degree and foreign language qualification exam score.

11. Exams, Measurement and Evaluation

Evaluation and assessment methods for each course are defined in "Course Information Form" in detail.

12. Graduation Requirements

Graduation requirements "Qualification Requirements and Regulations" as described in the section.

13. Mode of Study (Full-Time, E-Learning)

Full-time.

14. Contact Information

Eskişehir Osmangazi University
Graduate School Of Educational Sciences
Dept. of Elementary School Mathematics Education
Faculty of Education, Meşelik Campus Odunpazarı ESKİŞEHİR
Associate Prof. Dr. Kürşat YENİLMEZ (Head Of Program)
Tel: +90 222 239 3750-1652
e-mail: ilkogretim@ogu.edu.tr

Erasmus Coordinator of the Program: Asst. Prof. Dr. Melih TURĞUT (Internal Tel: 1614) e-mail: mturgut@ogu.edu.tr

15. Facilities

The program has four lecturers and three research assistants, 2 post graduate classroom, computer laboratory and video conference hall. All these places have projectors and internet connection.

16. Academic Staff

Associate Prof. Dr. Kürşat YENİLMEZ
Associate Prof. Dr. Pınar ANAPA
Associate Prof. Dr. Aytaç KURTULUŞ
Assist. Prof. Dr. Melih TURĞUT
Res. Assist. Candaş UYGAN
Res. Assist. Ş. Koza ÇİFTÇİ
Res. Assist. Ayla ATA

17. Courses - ECTS Credits

To see the detailed information about aims, learning outcomes, content, assessment and ECTS workload of the courses click the course name in the table below.

Elementary Mathematics Teaching Master Program Courses					
Autumn Semester					
Code	**Course Name**	**ECTS**	**T+A+C**	**C/E**	**Lenguage**
541401001	Research Methods in Education I	10	3–0–3	C	Turkish
541401002	Education Statistics I	10	3–0–3	C	Turkish
541401901	Special Topics	5	3–0–0	C	Turkish
541401003	Curriculum Development in Primary Education	10	3–0–3	E	Turkish
541401004	Education Policies in Turkey	10	3–0–3	E	Turkish
541401005	Measurement and Geometry Teaching	10	3–0–3	E	Turkish
541401006	Teaching Thinking in Primary Education	10	3–0–3	E	Turkish
541401007	Computer Algebra Systems in Mathematics Education	10	3–0–3	E	English
Total Credit		**30**	**15**		
Fall Semester					
Code	**Course Name**	**ECTS**	**T+A+C**	**C/E**	**Lenguage**
541402003	Seminar	10	0–3–0	C	Turkish
541402701	Master Thesis	25	0–1–0	C	Turkish
541402001	Research Methods in Education II	10	3–0–3	E	Turkish
541402002	Education Statistics II	10	3–0–3	E	Turkish
541402004	Theories of Learning and Teaching	10	3–0–3	E	Turkish
541402005	Classroom Management Strategies	10	3–0–3	E	Turkish
541402006	Rural Mathematics Education	10	3–0–3	E	Turkish
541402007	Measurement and Evaluation in Primary Education	10	3–0–3	E	Turkish
541402008	Number Systems and Arithmetic Teaching	10	3–0–3	E	Turkish
541402009	Spatial Thinking in Mathematics Education	10	3–0–3	E	English
541402010	Teaching Mathematical Problem Solving and Problem Posing	10	3–0–3	E	Turkish
Total Credit		**30**	**12**		

ESOGU Department of Educational Sciences
Course Information Form

SEMESTER	2011-2012 Fall

COURSE CODE	541401001	**COURSE NAME**	Research Methods in Education I

SEMESTER	WEEKLY COURSE PERIOD			Credit	ECTS	COURSE OF	
	Theory	**Practice**	**Laboratory**	**Credit**	**ECTS**	**TYPE**	**LANGUAGE**
SPRING	3	0	0	3	10	COMPULSORY (X) ELECTIVE ( )	Turkish

COURSE CATAGORY				
Basic Science	**Educational Science**	**Primary School Teaching** [if it contains considerable design, mark with (√)]		**Social Science**
-	%100			

ASSESSMENT CRITERIA			
	Evaluation Type	**Quantity**	**%**
MID-TERM	Mid-Term	1	30
	Quiz		
	Homework	1	20
	Project		
	Report		
	Others (presentation, summary of the presented discussion)		
FINAL EXAM		1	50

PREREQUIEITE(S)	-
COURSE DESCRIPTION	Main purpose of this course is to enable students to examine research processes (determining a problem, data collection, data analysis, and interpretation of the results), to review some certain scientific research methods (experimental, survey, correlational research methods, et al.) and to learn practical techniques for how to make literature review necessary for a certain research topic, data gathering, data evaluation and reporting.
COURSE OBJECTIVES	The objective of this course is to gain ability for performing all aspects of quantitative research.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	
COURSE OUTCOMES	1. to develop understandings about the role of research in science –especially in knowledge management 2. to gain knowledge about research processes and research methods 3. to analyze research in knowledge management field and gaining evaluation ability 4. to think systematically for solving problems in knowledge management field and perform analytical methods 5. to teach data collection, data analysis and evaluation techniques 6. to gain knowledge in writing research proposal and preparing research report
TEXTBOOK	• McMillan, J. H., & Schumacher, S. (2006). Research in education: Evidence based inquiry. Boston, MA: Brown and Company.
OTHER REFERENCES	• Cohen, L., Manion, L., & Morrison, K. (2007). Research methods in education. New York: Routledge. • Muijs, D. (2004). Doing quantitative research in education: With SPSS. London: Sage. • APA (2009). Amerikan Psikoloji Derneği yayım kılavuzu. İstanbul: Kaknüs Yayınları. • Neuman, W. Lawrence (2008). Toplumsal araştırma yöntemleri. İstanbul: Yayınodası Yayıncılık. • Punch, Keith F. (2005). Sosyal araştırmalara giriş: Nitel ve nicel yaklaşımlar. İstanbul: Siyasal Kitapevi. • Sipahi, B., Yurtkoru, E. S., & Çinko, M. (2010). Sosyal bilimlerde SPSS'le veri analizi. İstanbul: Beta Yayınları.

	• Türkiye Bilimler Akademisi (2002). Bilimsel araştırmada etik ve sorunları. Ankara: TUBA
TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Basic principles in educational research
2	Problem/Purpose
3	Literature Review
4	Qualitative and quantitative research designs
5	Sampling
6	Experimental research
7-8	MID-TERM EXAM
9	Survey research – Correlational research
10	Causal research
11	Qualitative and quantitative measurement
12	Quantitative data analysis
13	Writing research report
14	Course evaluation
15-16	FINAL EXAM

NO	PROGRAM OUTCOMES	3	2	1
1	Have high level field knowledge of mathematics education.			X
2	Know and apply contemporary teaching methods and techniques and the methods of measurement and evaluation about teaching profession.		X	
3	Have the ability to use information and communication technologies for teaching mathematical concepts effectively.		X	
4	Know developmental characteristics and learning styles of related students. Do effective planning, material development and applications which comply with these specifications.			X
5	Have the scientific and analytical thinking skills and know scientific research methods and techniques at the level of independent researching and make use of them.		X	
6	Follow national and international levels of development and changes in mathematics education.		X	
7	Have knowledge of general culture at the level of carrying out interdisciplinary studies and associating their studies with different disciplines.		X	
8	Have the skills to improve and apply original activities and teaching materials for students on issues related to mathematics education.			X
1: None. **2**: Partially contribution. **3**: Completely contribution.				

Instructor(s): Assoc. Prof. Dr. Engin Karadağ
Signature: **Date:**

ESOGU Department of Educational Sciences
Course Information Form

COURSE CODE	541401002	COURSE NAME	Education Statistics I

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
FALL	3	0	0	3	10	COMPULSORY (X) ELECTIVE ( )	Turkish

COURSE CATAGORY				
Basic Science		**Educational Science**	**Mechanical Engineering Profession** [if it contains considerable design, mark with (√)]	**Social Science**
X				

ASSESSMENT CRITERIA			
	Evaluation Type	**Quantity**	**%**
MID-TERM	1st Mid-Term		
	2nd Mid-Term		
	Quiz		
	Homework	1	40
	Project		
	Report		
	Others (.........)		
FINAL EXAM		1	60
PREREQUIEITE(S)	None		
COURSE DESCRIPTION	Basic terms of statistics, universe, sample, types of variables, categorizing the variables, descriptive statistics, transforming the raw scores to standardized scores. Normality, z-distribution, statistical error, hypothesis tests and decision, one-sample t-test, ki-square test. Significance test of mean differences (independent samples t-test, dependent samples t-test, one way analysis of variance (ANOVA), non-parametric tests), correlation and regression analysis.		
COURSE OBJECTIVES	Knowledge of basic terms of statistics, categorizing the variables, calculating the descriptive statistics, transforming the raw scores to standardized scores. Comprehension the statistical error. Administration hypothesis tests and deciding through results.		
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION			
COURSE OUTCOMES	Knows the basic terms of statistics. Calculates the basic descriptive statistics, transforms the raw scores to standardized scores, administers the one-sample t-test and ki-square test and decides through results.		
TEXTBOOK	Şener Büyüköztürk, Sosyal Bilimler İçin Veri Analizi El Kitabı, Pegem Akademi Yayıncılık.		
OTHER REFERENCES			
TOOLS AND EQUIPMENTS REQUIRED	Computer.		

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Introducing
2	Basic terms, universe and sample, variable types, categorizing the data.
3	Normal and Z distribution, statistical error and decision.
4	Introducing to statistical software, creating a database.
5	Descriptive statistics.
6	Hypothesis types and hypothesis tests.
7	Ki-square test and one-sample t-test.
8	Independent samples t-test.
9	One-way ANOVA and Post-hoc tests.
10	Dependent samples t-test.
11	Repeated measures t-test.
12	Correlation.
13	Simple linear regression.
14	Multiple linear regression.
15-16	Final Exam

NO	PROGRAM OUTCOMES	3	2	1
1	Have high level field knowledge of mathematics education.			X
2	Know and apply contemporary teaching methods and techniques and the methods of measurement and evaluation about teaching profession.		X	
3	Have the ability to use information and communication technologies for teaching mathematical concepts effectively.		X	
4	Know developmental characteristics and learning styles of related students. Do effective planning, material development and applications which comply with these specifications.			X
5	Have the scientific and analytical thinking skills and know scientific research methods and techniques at the level of independent researching and make use of them.		X	
6	Follow national and international levels of development and changes in mathematics education.		X	
7	Have knowledge of general culture at the level of carrying out interdisciplinary studies and associating their studies with different disciplines.		X	
8	Have the skills to improve and apply original activities and teaching materials for students on issues related to mathematics education.			X
1: None. **2**: Partially contribution. **3**: Completely contribution.				

Instructor(s): Ümit ÇELEN
Signature: **Date:**

ESOGU Department of Educational Sciences
Course Information Form

SEMESTER	Fall/Spring

COURSE CODE	541401003		COURSE NAME	Curriculum Development in Primary Education

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF		
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
	3	0	-	3	10	COMPULSORY ( ) ELECTIVE (X)	TR

COURSE CATAGORY			
Basic Science	**Educational Science**	**Primary School Teaching**	**Social Science**
		X	

ASSESSMENT CRITERIA			
	Evaluation Type	**Quantity**	**%**
	Mid-Term	1	30
	Quiz		
MID-TERM	Homework	1	30
	Project		
	Report		
	Others (………)		
FINAL EXAM		1	40

PREREQUIEITE(S)	
COURSE DESCRIPTION	Curriculum development aims at improving the life in elementary school and school environment and learning conditions.
COURSE OBJECTIVES	Students know that curriculum development in elementary school, the need for curriculum, curriculum development studies in Turkey, theoretical base of curriculum development, the relationship between curriculum and instruction, the contribution of curriculum to the instruction process
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	By the end of this course, the students will possess the required professional skills for effective and efficient instruction and curriculum development of elementary schools.
COURSE OUTCOMES	1. Understands curriculum development in elementary school 2. Understands education, instruction, curriculum 3. Understands curriculum development practices 4. Understands the need for curriculum 5. Understands curriculum development studies in Turkey 6. Understands theoretical base of curriculum development 7. Understands the relationship between curriculum and instruction 8. Understands the contribution of curriculum to the instruction process
TEXTBOOK	
OTHER REFERENCES	1. Demirel, Ö. (2003). Kuramdan Uygulamaya Eğitimde Program Geliştirme. Ankara: PegemA Yayıncılık. 2. Erden, A. M. (1995). Eğitimde Program Değerlendirme. Ankara: Pegem Yayıncılık. 3. Ertürk, S. (1997). Eğitimde Program Geliştirme. Ankara: METEKSAN. 4. Kısakürek, M. A. (1983). Eğitim Programlarının Hazırlanması ve Geliştirilmesi. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi*, 16/1, 217-244. 5. Küçükahmet, L. (2003). Öğretimde Planlama ve Değerlendirme. Ankara: Nobel Yayın Dağıtım. 6. Oliva P. F. (1988). Developing the Curriculum. USA: Scott, Foresman and Company. 7. Sönmez, V. (2007). Program Geliştirmede Öğretmen El Kitabı. Ankara: Anı Yayıncılık. 8. Varış, F. (1996). Eğitimde Program Geliştirme. Ankara: Alkım Kitapçılık Yayıncılık. 9. Wulf, K. M. & Schave, B. (1984) Curriculum Design, A Handbook for Educators. USA: Foresman and Company.
TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Information about and Introduction to the course and general concepts
2	Education, training, curriculum
3	Relationship between education and training programs
4	Contributions to the process of teaching programs
5	The need for education programs
6	Theoretical principles of curriculum development
7-8	
9	Education program development applications
10	Curriculum development in elementary education
11	Program evaluation in elementary education
12	Program development activities in Turkey
13	Constructivism and program development
14	Elementary education problems encountered in implementation of programs
15-16	

NO	PROGRAM OUTCOMES	3	2	1
1	Have high level field knowledge of mathematics education.			X
2	Know and apply contemporary teaching methods and techniques and the methods of measurement and evaluation about teaching profession.		X	
3	Have the ability to use information and communication technologies for teaching mathematical concepts effectively.		X	
4	Know developmental characteristics and learning styles of related students. Do effective planning, material development and applications which comply with these specifications.			X
5	Have the scientific and analytical thinking skills and know scientific research methods and techniques at the level of independent researching and make use of them.		X	
6	Follow national and international levels of development and changes in mathematics education.		X	
7	Have knowledge of general culture at the level of carrying out interdisciplinary studies and associating their studies with different disciplines.		X	
8	Have the skills to improve and apply original activities and teaching materials for students on issues related to mathematics education.			X
1: None. **2**: Partially contribution. **3**: Completely contribution.				

Instructor(s) Assoc. Prof. Dr. Zuhal ÇUBUKÇU
Signature: **Date:**

ESOGU Department of Educational Sciences
Course Information Form

SEMESTER	2012-2013

COURSE CODE	541401901	COURSE NAME	Special Topics

SEMESTER	WEEKLY COURSE PERIOD					COURSE OF	
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
Fall /Spring	3	0	0	0	5	COMPULSORY (X) ELECTIVE ( )	Turkish

COURSE CATAGORY				
Basic Science	Educational Science	Primary School Teaching [if it contains considerable design, mark with (√)]		Social Science
	% 50			% 50

ASSESSMENT CRITERIA

	Evaluation Type	Quantity	%
MID-TERM	Mid-Term	1	50
	Quiz		
	Homework		
	Project		
	Report		
	Others (presentation, summary of the presented discussion)		
FINAL EXAM		1	50
PREREQUISITE(S)	-		

COURSE DESCRIPTION	Taking the lead for doctorate student, "The Specialization Field Course" ensures students to acquire knowledge, skills and attitude. The content of the course is as follows: defining a problem statemant and research topic related to the thesis, exposuring the purpose and importance of the study, process of guidance for choosing a suitable method for the implementation, developin a reference list and in addition to the aforementioned concerns, knowledge regarding the initial draft plan of the study.
COURSE OBJECTIVES	Evaluations and discussions of the new developments and articles in the study fields of the students who are progressing their Ph.D. thesis.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	-
COURSE OUTCOMES	By the end of this module students will be able to: 1. Choose a problem statemant and define it within the context of theoretical and / or social affects, 2. Understand the relationship between research topic and the research problem, 3. Understand and explain the importance and purpose of the study, 4. Choose one of the suitable methods devoted to the research problem and search the literature, 5. Develop an initial draft plan within the context of thesis proposal, devoted to estimated general situation of the study.
REFERENCES	Büyüköztürk,Ş.(2008). Sosyal bilimler için veri analizi el kitabı. Ankara: Pegem Akademi. Ekiz. D. (2003). Eğitimde araştırma yöntem ve metotlarına giriş. Ankara: Anı Yayıncılık. Karasar, N. (1996). Araştırmalarda rapor hazırlama yöntemi. Ankara: Pars Matbaacılık. Kuş, E. (2003). Nicel-nitel araştırma teknikleri. Ankara: Anı Yayıncılık. Marshall, C. ve Rossman G. (1989). Designing qualitive research. London: Sage Publications. Miles, M. B. ve Huberman, A. M. (1994). An expanded sourcebook qualitative data analysis. (Second Edition). California: Sage Publications, Inc. Yıldırım, A. ve Şimşek H.(2005). Sosyal bilimlerde nitel araştırma yöntemleri. Ankara: Seçkin Yayınları.
OTHER REFERENCES	
TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Subject of the thesis research
2	Literature on the subject follow-up
3	Evaluation
4	Report preparation and presentation
5	Follow-up of the literature
6	Article review
7-8	MID-TERM EXAM
9	source review
10	Evaluation
11	Follow-up of the literature
12	Article review
13	Evaluation
14	Report preparation and presentation
15-16	FINAL EXAM

NO	PROGRAM OUTCOMES	3	2	1
1	Have high level field knowledge of mathematics education.	X		
2	Know and apply contemporary teaching methods and techniques and the methods of measurement and evaluation about teaching profession.	X		
3	Have the ability to use information and communication technologies for teaching mathematical concepts effectively.		X	
4	Know developmental characteristics and learning styles of related students. Do effective planning, material development and applications which comply with these specifications.			X
5	Have the scientific and analytical thinking skills and know scientific research methods and techniques at the level of independent researching and make use of them.	X		
6	Follow national and international levels of development and changes in mathematics education.	X		
7	Have knowledge of general culture at the level of carrying out interdisciplinary studies and associating their studies with different disciplines.		X	
8	Have the skills to improve and apply original activities and teaching materials for students on issues related to mathematics education.	X		
1: None. **2**: Partially contribution. **3**: Completely contribution.				

Instructor(s): All instructors
Signature: **Date:**

ESOGU Department of Educational Sciences
Course Information Form

SEMESTER	Fall

COURSE CODE	541401004	COURSE NAME	Education Policies in Turkey

SEMESTER	WEEKLY COURSE PERIOD			Credit	ECTS	COURSE OF	
	Theory	Practice	Labratory			TYPE	LANGUAGE
	3	0	-	3	10	COMPULSORY ( ) ELECTIVE (x)	Turkish

COURSE CATEGORY				
Basic Science	**Educational Science**	**Science Education** [if it contains considerable design, mark with (√)]		**Social Science**
	%70			%30

ASSESSMENT CRITERIA			
	Evaluation Type	**Quantity**	**%**
MID-TERM	Mid-Term		
	Quiz		
	Homework	1	50
	Project		
	Report		
	Others (………)		
FINAL EXAM	Homework	1	50
PREREQUIEITE(S)	-		

COURSE DESCRIPTION	Mega trends and problems related to education; Teacher education; school management; curriculum development; quality issues in education; educational finance; technology in education, instructional methods, school-community relations; multicultural education; national and international restructuring and reform efforts in educational; historical foundations of Turkish educational system; Turkish school law; structure of the Turkish education system; basic educational system; secondary education; higher education system; vocational and technical education; organizational and administrative structure of Turkish education system; structure of the Turkish Ministry of education; the role of supervision in Turkish educational system.
COURSE OBJECTIVES	1. to analyze educational policies 2. to recognize the special problems of the Turkish education system 3. Educational planning and social mobility, to examine educational system and the major management problems 4. to identify the key issues related to education 5. to analyze the results of the main problems related to education and resources 6. to see the dimensions of problems related to education, social, cultural, political, economic, psychological, philosophical, managerial, technological and so on. 7. to use the scientific method for detecting and solving problems related to education, 8. to solve problems and develop recommendations related to education-oriented projects
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	
COURSE OUTCOMES	By the end of the course students should be able to: 1. Understand basic issues in educational systems in Turkey and around the world. 2. Understand historical and legal foundations of Turkish educational system. 3. Understand the structure of Turkish educational system. 4. Know subsystems of Turkish educational system. 5. Identify educational issues and provide alternative solutions to them. Provide and develop projects related to issues in education.
TEXTBOOK	Ada, S. & Baysal, Z. N. (2009). Çeşitli yapıları ve yönetimleri açısından çeşitli ülkelere bir bakış. Pegem yayınları. Ankara.

	Ada, S. & Baysal, Z. N.(2010) Türk Eğitim Sistemi ve okul yönetimi, Pegem Akademi yayınları. Ankara. Apple, M. W. (2006). Eğitim ve iktidar.. (Çev: Ergin Bulut).Kalkedon yayınları.İstanbul. Balcı, A. (ed.) (2009). Karşılaştırmalı eğitim sistemleri. Pegem Yayınları, Ankara. Babüroğlu, O. N. (ed.) (2003). Eğitimin geleceği. Üniversitelerin ve eğitimin değişen paradigması. Sabancı Üniversitesi yayınları. İstanbul. Bourdieu, P. (1990). Reproduction in education, society and culture. Sage publication, London. DPT. Kalkınma Planları
OTHER REFERENCES	Hoy, W.K. & Miskel, G. C. (2010) Eğitim yönetimi, teori, araştırma ve uygulama. (Turan, S. çeviri ed.). Nobel Yayın Dağıtım. Ankara. Kaya. Y. K. (1993). İnsan yetiştirme düzenimiz. Yeni bir bakış Bilim yayınları, Ankara. MEB. Hükümet Programlarında Eğitim MEB. Kalkınma Planlarında Eğitim. Olssen, M.& Codd, J. (2004). Education policy: globalization, citizenship and democracy. Sage publication. London Şişman, M. & Taşdemir, İ. (2008). Türk eğitim sistemi ve okul yönetimi, Pegem Akademi yayınları, Ankara. Shor , I. & Pari, C. (ed.) (1999). Education is politics. Critical teaching across differences, K-12: United States.
TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Giving information about the course content
2	Analysis of education policy
3	Special problems of the Turkish education system
4	Educational planning and social mobility
5	Fundamental problems related to education
6	The results of the main problems related to education and resources
7-8	MID-TERM EXAM
9	Approaches to planning and organization of the education system
10	Problems related to education, social, cultural, political and economic dimensions
11	Problems related to education, psychological, philosophical, managerial and technological dimensions
12	Structure and functioning of education system in Turkey to develop solutions to problems related to
13	Diagnosis of the problems related to education and the scientific method
14	Solving problems related to education-oriented projects and develop proposals
15-16	FINAL EXAM

NO	PROGRAM OUTCOMES	3	2	1
1	Have high level field knowledge of mathematics education.			X
2	Know and apply contemporary teaching methods and techniques and the methods of measurement and evaluation about teaching profession.		X	
3	Have the ability to use information and communication technologies for teaching mathematical concepts effectively.		X	
4	Know developmental characteristics and learning styles of related students. Do effective planning, material development and applications which comply with these specifications.			X
5	Have the scientific and analytical thinking skills and know scientific research methods and techniques at the level of independent researching and make use of them.		X	
6	Follow national and international levels of development and changes in mathematics education.		X	
7	Have knowledge of general culture at the level of carrying out interdisciplinary studies and associating their studies with different disciplines.		X	
8	Have the skills to improve and apply original activities and teaching materials for students on issues related to mathematics education.			X
1: None. **2**: Partially contribution. **3**: Completely contribution.				

Instructor(s): Professor Ahmet Aypay
Signature: **Date:**

ESOGU Department of Educational Sciences
Course Information Form

SEMESTER	Fall

COURSE CODE	541401005		COURSE NAME	Measurement and Geometry Teaching

SEMESTER	WEEKLY COURSE PERIOD					COURSE OF		
	Theory	Practice	Laboratory	Credit	ECTS	TYPE		LANGUAGE
Fall	3	0	0	3	10	COMPULSORY ( ) ELECTIVE (X)		Turkish

COURSE CATAGORY				
Basic Science	**Educational Science**	**Primary School Teaching** [if it contains considerable design, mark with (√)]		**Social Science**
%25	%75	-		-

ASSESSMENT CRITERIA			
	Evaluation Type	**Quantity**	**%**
MID-TERM	Mid-Term		
	Quiz		
	Homework	1	30
	Project	1	30
	Report		
	Others (presentation, summary of the presented discussion)		
FINAL EXAM		1	40

PREREQUIEITE(S)	
COURSE DESCRIPTION	Discover and implement new, effective strategies to teach geometry to students by integrating software, Web-based activities, as well the MEB standards into lesson plans for 6-8 classroom.
COURSE OBJECTIVES	The main of the course, geometry subjects in elementary school are given simply and using technology. Clasical Methods which will use learning geometry subjects in elementary school mathematics lesson are given. In addition, applications of new teaching directions in geometry are given.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	By the end of the course students should be able to: 1. Using of new teaching methods in geometry teaching is given 2. gain a knowledge of contemporary issues 3. understand the broad education necessary to understand the impact of solutions in a global and societal contex 4. use techniques, skills, and modern engineering tools necessary for engineering practice 5. get an understanding of professional and ethical responsibility 6. identify, formulate, and solve engineering problems 7. function on multi-disciplinary teams
COURSE OUTCOMES	applying knowledge of reflections, rotations, and translations in creating a tessellation. Students will recognize all 2D and 3D shapes their attributes and properties. Software using in geometry teaching Measures teaching
TEXTBOOK	Marry, M., Hatfield, Nancy Taner Edwards, Gary G. Bitter. Mathematics methods for elementary and middle school Teachers
OTHER REFERENCES	1. Van De Walle, John A. Elementary School Mathematics , Teaching Developmentaly. 2. Maria Goulding. Learning to Teach Mathematics 3. Emma E. Holmes. New Directions In Elemantery School Mathematics
TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS	
WEEK	**TOPICS**
1	The concept of Measurements, types of measurement, units using
2	Measuring the perimeter and area of polygons
3	Measuring the surfaces area and volume of Solids
4	Basic ideas of geometry
5	Triangle
6	Angles
7-8	Mid term
9	Dörtgenler
10	Transformations geometry, translation
11	Reflection, roration
12	Geometric tessilation
13	Geometric patterns
14	Special polygons
15-16	final

No	Program Outcomes	3	2	1
1	Have high level field knowledge of mathematics education.	x		
2	Know and apply contemporary teaching methods and techniques and the methods of measurement and evaluation about teaching profession.	x		
3	Have the ability to use information and communication technologies for teaching mathematical concepts effectively.	x		
4	Know developmental characteristics and learning styles of related students. Do effective planning, material development and applications which comply with these specifications.	x		
5	Have the scientific and analytical thinking skills and know scientific research methods and techniques at the level of independent researching and make use of them.		x	
6	Follow national and international levels of development and changes in mathematics education.	x		
7	Have knowledge of general culture at the level of carrying out interdisciplinary studies and associating their studies with different disciplines.		x	
8	Have the skills to improve and apply original activities and teaching materials for students on issues related to mathematics education.	x		
1:Hiç Katkısı Yok. **2**:Kısmen Katkısı Var. **3**:Tam Katkısı Var.				

Dersin Öğretim Üyesi: Aytaç Kurtuluş
İmza: **Date:**

ESOGU Department of Educational Sciences
Course Information Form

COURSE CODE	541401006		COURSE NAME	Teaching Thinking in Primary Education

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
FALL	3	0	0	3	10	COMPULSORY () ELECTIVE(X)	Turkish

COURSE CATAGORY				
Basic Science	Educational Science	Primary School Teaching		Social Science
50 %	50 %			

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	Mid-Term		
	Quiz		
	Homework	1	40
	Project		
	Report		
	Others (………)		
FINAL EXAM		1	60

PREREQUIEITE(S)	
COURSE DESCRIPTION	What is mathematics?, What kind of a mathematics education?, elementary mathematics curriculum, thinking skills, creative thinking, critical thinking, mathematical thinking.
COURSE OBJECTIVES	The aim of the course is to teach teachers and teacher candidates a range of thinking skills and how to use 'teaching mathematics' to teach these skills.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	
COURSE OUTCOMES	1. to understand the importance and aims of the Mathematics as a science. 2. to have information about the elementary mathematics curriculum. 3. to have information about thinking and thinking skills (critical thinking, creative thinking etc.). 4. to have information about mathematical thinking. 5. using 'teaching mathematics' for teaching thinking skills.
TEXTBOOK	**Yıldırım, C.(1998).** Mathematical Thinking. Remzi Bookstore.
OTHER REFERENCES	**Altun, M. (2004)**. Teaching Mathematics (6-8th grade). Alfa Publications. **Bainer, D.L. (1993).** Problems of rural elementary school teachers, *Rural Educator*, 14(2), 1–3. **Baki, A. (2008).** Mathematics Education from Theory to Practice. Harf Publications. **Barley, Z. A. (2009).** Preparing teachers for rural appointments: Lessons from the mid-continent. *The Rural Educator, 30*(3), 10-15. **Baykul, Y. (2004)**. Teaching Mathematics (6-8th grade). Pegem A Publications. **Dillon, J. ve Maguire, M. (1997).** Becoming a Teacher. Open University Press. **MEB.(2005).** Elementary Mathematics Curriculum (6-8th grade). MEB Publications. **Olkun, S. ve Toluk Uçar, Z. (2000).** Activity Based Mathematics Learning. Anı Publications.
TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS

WEEK	TOPICS
1	What is mathematics?
2	What kind of a mathematics education?
3	Elementary mathematics curriculum
4	Elementary mathematics curriculum
5	Thinking skills
6	Mathematics and thinking education
7-8	
9	Creative thinking
10	Mathematics education and creative thinking
11	Critical thinking
12	Mathematics education and critical thinking
13	Mathematical thinking
14	Mathematical thinking
15-16	

NO	PROGRAM OUTCOMES	3	2	1
1	Have high level field knowledge of mathematics education.		X	
2	Know and apply contemporary teaching methods and techniques and the methods of measurement and evaluation about teaching profession.		X	
3	Have the ability to use information and communication technologies for teaching mathematical concepts effectively.		X	
4	Know developmental characteristics and learning styles of related students. Do effective planning, material development and applications which comply with these specifications.	X		
5	Have the scientific and analytical thinking skills and know scientific research methods and techniques at the level of independent researching and make use of them.	X		
6	Follow national and international levels of development and changes in mathematics education.		X	
7	Have knowledge of general culture at the level of carrying out interdisciplinary studies and associating their studies with different disciplines.		X	
8	Have the skills to improve and apply original activities and teaching materials for students on issues related to mathematics education.		X	
1: None. **2**: Partially contribution. **3**: Completely contribution.				

Instructor(s): Assoc. Prof. Dr. Kürşat YENİLMEZ
Signature: **Date:** 23.01.2012

ESOGÜ Institute of Educational Sciences
Course Information Form

SEMESTER	2013-2014

COURSE CODE	541401007	**COURSE NAME**	Computer Algebra Systems in Mathematics Education

SEMESTER	WEEKLY COURSE PERIOD					COURSE OF	
	Theory	**Practice**	**Laboratory**	**Credit**	**ECTS**	**TYPE**	**LANGUAGE**
Fall	3	0	0	3		COMPULSORY ( ) ELECTIVE (X)	English

COURSE CATEGORY			
Basic Science	**Educational Science**	**Mathematics Education** [if it contains considerable design, mark with (√)]	**Social Science**
	% 25	% 75	

ASSESSMENT CRITERIA

	Evaluation Type	Quantity	%
MID-TERM	Mid-Term	1	40
	Quiz		
	Homework		
	Project		
	Report		
	Seminar		
FINAL EXAM		1	%60
PREREQUIEITE(S)	-		

COURSE DESCRIPTION	Review of NCTM frameworks with respect to use of technology in learning and teaching mathematics, Introduction to Pedagogical and Technological Pedagogical Content Knowledge, Introduction to theory of semiotic representations, Pedagogical activity & task designs and introduction to didactics of mathematics, GeoGebra, Cabri, Wingeomtr, Sketchpad and SketchUp and designing sample tasks in terms of these softwares, Review of Scicolab, Mathematica and Maple.
COURSE OBJECTIVES	The aim of this course to provide graduate students pedagogical aspects of use of computer algebra systems (CAS) in mathematics classrooms. Another aim of the lecture is to provide pedagogical teaching designs with CAS.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	In the course, it is aimed to make a major contribution to field of mathematics education by reviewing NCTM standards in terms of CAS and use of technology; learning how to design a pedagogical task in mathematics classrooms with CAS.
COURSE OUTCOMES	By the end of this course graduate students will be able to: - learn suggestions of NCTM for use of technology, - learn pedagogical and techno-pedagogical content knowledge, - interpret theory of semiotic representations, - learn how to design a pedagogical task and apply them and analyze feedbacks, - get further information on the use of GeoGebra, Cabri, Wingeomtr, Sketchpad and SketchUp.
TEXTBOOK	- Lagrange, J.B., Artigue, M., Laborde, C., & Toruche, L. (2003). Technology and Mathematics Education: A multidimensional study of the evolution of research and innovation. In: A.J. Bishop, M.A. Clements, C. Keitel, J. Kilpatrick & F.K.S. Leung (Eds.). *Second International Handbook of Mathematics Education* (pp. 237 – 269). Dordrecht: Kluwer Academic Publishers.
OTHER REFERENCES	- Boero, P., Dapueto, C., & Parenti, L. (1997). Didactics of Mathematics and the Professional Knowledge of Teachers. In A.J. Bishop, K. Celements, C. Keitel, J. Kilpatrick, & C. Laborde (Eds.). *International Handbook of Mathematics Education* (pp. 1187-1205). Dordrecht: Kluwer Academic Publishers. - Mishra, P. & Koehler, M.J. (2006). Technological pedagogical content knowledge: a framework for teacher knowledge. *Teachers College*

	Record, 108(6), 1017–1054.
	- Monaghan, J. (2004). Teachers' activities in technology-based mathematics lessons. *International Journal of Computers for Mathematical Learning, 9*, 327-357.
	- Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher, 15*, 4–14.
TOOLS AND EQUIPMENTS REQUIRED	Computer and projection.

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Review of NCTM frameworks with respect to use of technology in learning and teaching mathematics
2	Introduction to Pedagogical Content Knowledge
3	Introduction to Technological Pedagogical Content Knowledge
4	Introduction to Technological Pedagogical Content Knowledge
5	Introduction to theory of semiotic representations
6	Review of frameworks for Pedagogical activity & task designs
7-8	MID -TERM
9	Review of frameworks for Pedagogical activity & task designs
10	Introduction to didactics of mathematics
11	GeoGebra,Cabri and designing sample activities and tasks
12	Wingeomtr, Sketchpad and designing sample activities and tasks
13	SketchUp and designing sample activities and tasks
14	Review of SciColab, Mathematica and Maple and designing sample activities and tasks
15-16	FINAL EXAM

NO	PROGRAM OUTCOMES	3	2	1
1	Have high level field knowledge of mathematics education.	X		
2	Know and apply contemporary teaching methods and techniques and the methods of measurement and evaluation about teaching profession.	X		
3	Have the ability to use information and communication technologies for teaching mathematical concepts effectively.	X		
4	Know developmental characteristics and learning styles of related students. Do effective planning, material development and applications which comply with these specifications.	X		
5	Have the scientific and analytical thinking skills and know scientific research methods and techniques at the level of independent researching and make use of them.			X
6	Follow national and international levels of development and changes in mathematics education.		X	
7	Have knowledge of general culture at the level of carrying out interdisciplinary studies and associating their studies with different disciplines.			X
8	Have the skills to improve and apply original activities and teaching materials for students on issues related to mathematics education.	X		
1: None. **2**: Partially contribution. **3**: Completely contribution.				

Instructor(s): Assistant Professor Melih Turgut, PhD

Sign   **Date:** 04/06/2013

ESOGU Department of Educational Sciences
Course Information Form

SEMESTER	2011-2012	

COURSE CODE	541402001	**COURSE NAME**	Research Methods in Education II

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	**Practice**	**Labratory**	**Credit**	**ECTS**	**TYPE**	**LANGUAGE**
SPRİNG	3	0	0	3	10	COMPULSORY ( ) ELECTIVE (X)	TR

COURSE CATAGORY				
Basic Science	**Educational Science**			**Social Science**

ASSESSMENT CRITERIA			
	Evaluation Type	**Quantity**	**%**
MID-TERM	Mid-Term	1	30
	Quiz		
	Homework		
	Project	1	30
	Report		
	Others (………)		
FINAL EXAM		1	40
PREREQUIEITE(S)			

COURSE DESCRIPTION	- Knowledge base of different qualitative research methods, - Different qualitative research designs, - Basic steps of qualitative research, - Implementation of qualitative data analysis, - Examination of a sample qualitative research topic, - cover the content of this course.
COURSE OBJECTIVES	The main purpose of this course to help students to be able to plan, design, execute, report in education. Theoretical knowledge on various research methods will be acquired, from conceptualization to operationalization carrying out research will be executed. Students will understand, explain, predict, develop proposal, implement those proposals, interpret and report research results.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	
COURSE OUTCOMES	1. Understand knowledge base in different qualitative research methods, 2. Learn qualitative research designs, 3. Comprehend basic steps of qualitative research, 4. İnterpret qualitative data analysis, 5. Use qualitative research methods in education effectively, 6. Plan, design, interpret and report an independent qualitative research.
TEXTBOOK	Patton, M. Q. (2002). Qualitative Research & Evaluation Methods (3.Baskı). Sage Publications, Thousand Oaks.
OTHER REFERENCES	1. Balcı, A. (2000). Sosyal bilimlerde araştırma (5. Baskı), Pegema Yayıncılık, Ankara. 2. Miles, M. B. & Huberman, A. M. (1994). An Expanded Sourcebook: Qualitative Data Analysis. Sage: London. 3. Yıldırım, A ve Şimşek, H. (1994). Sosyal Bilimlerde Nitel Araştırma Yöntemleri. Ankara 4. Articles (will be submitted by the instructor).
TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS	
WEEK	**TOPICS**
1	**I Introduction** Emergence-first research studies Basic concepts Philosophical foundations Basic characteristics
2	What kind of research topics and what kind of areas What kind of results are obtained Qualitative or Quantitative
3	**II Types** 　　　　Fenomenology 　　　　Etnography 　　　　Grounded theory 　　　　Case study Field research
4	Action research 　　　　Biography 　　　　Narratives 　　　　Hermeneutical 　Group focused studies (type of analysis)
5	**III Sampling and types** *(Purposive-Judgement sampling, Convenience sampling, quota sampling, theoretical sampling, snowball sampling)*
6	**IV Analysis** 　　**A.　Types of analysis** 　　　　Typology, John Lofland & Lyn Lofland 　　　　Taxonomy ve Domain Analysis James Spradley 　　　　Constant Comparison/Grounded Theory Anselm Strauss Analytic Induction F. Znaniecki, Howard Becker, Jack Katz.
7-8	MID -TERM
9	Logical Analysis/Matrix Analysis Matthew Miles ve Huberman 　　　　Quasi-statistics Howard Becker 　　　　Event Analysis/Microanalysis, Frederick Erickson, Kurt Lewin, Edward Hall, Erving Goffman 　　　　Metaphorical Analysis Michael Patton, Nick Smith Hermeneutical Analysis Max Van Manen
10	Phenomenology/Heuristic Analysis Clark Moustakas 　　　　Discourse analysis James Gee 　　　　Narrative Analysis Catherine Reisman 　　　　Semiotics Peter Manning Content Analysis R. P. Weber
11	**B.　Types and characteristics of interview** 　　　　i. Tightly structured 　　　　ii. Structured 　　　　iii. Loosely structured 　　**C.　Observation** (Participant Observation, Nonparticipant Observation) 　　　　　**Observation records** 　　**D. Document analysis and artifact analysis**
12	**V Coding of data** 　　**A.　Data sources and characteristics** 　　**B.　Analsis** 　　i. Data recording and transcription (video, audio, paper-pencil) Coding types (Levels, processes, titles, perceptions, open areas) 　　　**Categories and the formation process of themes and cautions (**Open Coding, Axial Coding, Selective Coding) 　　**C.Qualitative analysis types according to analysis**
13	**VI Validity, Reliability, Generalizability,** Triangulation: 　-　Member Checking: 　-　Outlier Analysis: 　-　Pattern Matching: 　-　Representativeness Check: 　-　Coding Check multiple coders: 　-　Prolonged engagement

		- Persistent observation
		- Referential adequacy
		- Peer debriefing
		- Reflexive journal
		- Thick description
		- Purposive sampling
		Audit trail. (Lincoln and Guba, Erlandson et al. 1993)
14	**VII Reporting**	
15-16	FINAL EXAM	

NO	PROGRAM OUTCOMES	3	2	1
1	Have high level field knowledge of mathematics education.		X	
2	Know and apply contemporary teaching methods and techniques and the methods of measurement and evaluation about teaching profession.		X	
3	Have the ability to use information and communication technologies for teaching mathematical concepts effectively.		X	
4	Know developmental characteristics and learning styles of related students. Do effective planning, material development and applications which comply with these specifications.	X		
5	Have the scientific and analytical thinking skills and know scientific research methods and techniques at the level of independent researching and make use of them.	X		
6	Follow national and international levels of development and changes in mathematics education.		X	
7	Have knowledge of general culture at the level of carrying out interdisciplinary studies and associating their studies with different disciplines.		X	
8	Have the skills to improve and apply original activities and teaching materials for students on issues related to mathematics education.		X	
1: None. **2**: Partially contribution. **3**: Completely contribution.				

Instructor(s): Prof. Dr. M. Bahaddin ACAT
Signature: **Date:**

ESOGU Department of Educational Sciences
Course Information Form

SEMESTER	Spring

COURSE CODE	541402002		COURSE NAME	Education Statistics II

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
	3	0	-	3	10	COMPULSORY ( ) ELECTIVE (X)	Turkish

COURSE CATAGORY				
Basic Science	Educational Science		Master degree [if it contains considerable design, mark with (√)]	Social Science

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	Mid-Term		
	Quiz		
	Homework	1	40
	Project		
	Report		
	Others (………)		
FINAL EXAM		1	60

PREREQUIEITE(S)	None
COURSE DESCRIPTION	- Basic concept related to statistics - Sampling methods - theoretical distributions - Central tendency and dispersion, - Correlation and regression analysis, - Hypothetical test, cover the content of this course.
COURSE OBJECTIVES	Students calculate the descriptive statistics of variables which is in education, and interpret hypothesis tests aimed to examine the relationships between variables using
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	
COURSE OUTCOMES	At the end of the course, the students will be able to: 1. omprehend main knowledge related statistic terms (population, sample, parameter, statistic, variable, variables types, measurement, scale, scales types, distribution), 2. understand sampling methods, 3. know theoretical distributions (normal and binomial distributions), 4. recognize central tendency (mean, mod, median) and dispersion (range, standard deviation, variance, standard error, variation coefficient), 5. comprehend correlation and regression analysis, 6. know hypothetical tests (parametric and nonparametric tests, univariate statistics).
TEXTBOOK	1. Alpar, R. (2001). Spor Bilimlerinde Uygulamalı İstatistik. Nobel Yayınları, Ankara. 2. Arıcı, H. (2005). İstatistiksel Yöntemler. Meteksan, Ankara.
OTHER REFERENCES	3. Baykul, Y. (1997). İstatistik, Metodlar ve Uygulamalar. Anı Yayıncılık, Ankara. 4. Büyüköztürk, Ş. (2007). Sosyal Bilimler İçin Veri Analizi El Kitabı. 8. Baskı, Pegem A Yayınları, Ankara. 5. Hovardaoğlu, S. (1994). Davranış Bilimleri İçin İstatistik. Hatipoğlu Yayınları, Ankara. 6. Karasar, N. (2000). Bilimsel Araştırma Yöntemi: Kavramlar, İlkeler, Teknikler. 10. Baskı, Nobel Yayınları, Ankara. 7. Özdamar, K. (1999). Paket Programlar ile İstatistiksel Veri Analizi. Kaan Kitabevi, Eskişehir.

	8. Siegel, S. (1977). Davranış Bilimleri İçin Parametrik Olmayan İstatistikler. Çeviren: Yurdal Topsever, A.Ü. Dil ve Tarih Coğrafya Fakültesi Yayınları, Ankara. 9. Tatlıdil, H. (1992). Uygulamalı Çok Değişkenli İstatistiksel Analiz. Ankara.
TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Meeting and introducing
2	Basic concept related to statistics (population, sample, parameter, statistic, variable, variables types, measurement, scale, scales types, distribution)
3	Sampling methods
4	Theoretical distributions (normal and binomial distributions)
5	Central tendency (mean, mod, median) and dispersion (range, standard deviation, variance, standard error, variation coefficient
6	Central tendency (mean, mod, median) and dispersion (range, standard deviation, variance, standard error, variation coefficient
7-8	MID-TERM EXAM
9	Correlation analysis
10	Regression analysis
11	Hypothetical tests (parametric and nonparametric tests, univariate statistics).
12	Descriptive statistical calculations
13	Descriptive statistical calculations
14	Evaluation
15-16	FINAL EXAM

NO	PROGRAM OUTCOMES	3	2	1
1	Have high level field knowledge of mathematics education.		X	
2	Know and apply contemporary teaching methods and techniques and the methods of measurement and evaluation about teaching profession.		X	
3	Have the ability to use information and communication technologies for teaching mathematical concepts effectively.		X	
4	Know developmental characteristics and learning styles of related students. Do effective planning, material development and applications which comply with these specifications.	X		
5	Have the scientific and analytical thinking skills and know scientific research methods and techniques at the level of independent researching and make use of them.	X		
6	Follow national and international levels of development and changes in mathematics education.		X	
7	Have knowledge of general culture at the level of carrying out interdisciplinary studies and associating their studies with different disciplines.		X	
8	Have the skills to improve and apply original activities and teaching materials for students on issues related to mathematics education.		X	
1: None. **2**: Partially contribution. **3**: Completely contribution.				

Instructor(s): Prof. Dr. Ahmet AYPAY
Signature: Date:

ESOGÜ Department of Educational Sciences
Course Informatıon Form

COURSE CODE	541402003	COURSE NAME	Seminar

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
Spring	0	3	0	0	10	COMPULSORY (X) ELECTIVE ( )	Turkish

COURSE CATAGORY				
Basic Science	Educational Science	Science Education [if it contains considerable design, mark with (√)]		Social Science
	% 75			% 25

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	Article review		
	Research assignment	1	30
	Project	1	30
	Final Exam	1	40
	Report		
	Others (………)		
FINAL EXAM			
PREREQUIEITE(S)	-		
COURSE DESCRIPTION	In this course, students prepare a study with responsible instructor for the course using the scientific method on a given problem, and share work in the classroom.		
COURSE OBJECTIVES	The main aim of the course is to gain skills like as accessing scientific data, using data, making an assessment and preparing a presentation before they pass thesis stage.		
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	-		
COURSE OUTCOMES	By the end of this course students will be able to: 1. notice a problem in the relevant field. 2. effectively use the scientific process. 3. develop alternative solutions about this problem. 4. write a scientific report. 5. effectively.present their resarch reports .		
TEXTBOOK	APA (2009). *Amerikan psikoloji derneği yayım kılavuzu.* İstanbul: Kaknüs Yayınları.		
OTHER REFERENCES	Türkiye Bilimler Akademisi (2002). *Bilimsel araştırmada etik ve sorunları.* Ankara: TUBA		
TOOLS AND EQUIPMENTS REQUIRED	Computer		

WEEK	TOPICS
COURSE SYLLABUS	
1	Current developments and problems in the field
2	Determining a problem
3	The literature review
4	Preparing a research proposal
5	Data collection
6	Data collection
7-8	MID -TERM
9	Data analysis
10	Data analysis
11	Results
12	Conclusions and recommendations
13	Writing research report
14	Presentation of researh report
15-16	FINAL EXAM

NO	PROGRAM OUTCOMES	3	2	1
1	Have high level field knowledge of mathematics education.	X		
2	Know and apply contemporary teaching methods and techniques and the methods of measurement and evaluation about teaching profession.	X		
3	Have the ability to use information and communication technologies for teaching mathematical concepts effectively.		X	
4	Know developmental characteristics and learning styles of related students. Do effective planning, material development and applications which comply with these specifications.			X
5	Have the scientific and analytical thinking skills and know scientific research methods and techniques at the level of independent researching and make use of them.	X		
6	Follow national and international levels of development and changes in mathematics education.	X		
7	Have knowledge of general culture at the level of carrying out interdisciplinary studies and associating their studies with different disciplines.		X	
8	Have the skills to improve and apply original activities and teaching materials for students on issues related to mathematics education.	X		
1: None. **2**: Partially contribution. **3**: Completely contribution.				

Instructor(s) Assoc. Prof. Dr. Zuhal ÇUBUKÇU
Signature: **Date:**

ESOGU Department of Educational Sciences
Course Information Form

SEMESTER	2012-2013

COURSE CODE	541402701	**COURSE NAME**	Master Thesis

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	**Practice**	**Laboratory**	**Credit**	**ECTS**	**TYPE**	**LANGUAGE**
Spring	0	1	0	0	25	COMPULSORY (X) ELECTIVE ()	Turkish

COURSE CATEGORY			
Basic Science	**Educational Science**	**Primary School Teaching** [if it contains considerable design, mark with (√)]	**Social Science**
	% 75		% 25

ASSESSMENT CRITERIA			
	Evaluation Type	**Quantity**	**%**
MID-TERM	Mid-Term	1	50
	Quiz		
	Homework		
	Project		
	Report		
	Others (presentation, summary of the presented discussion)		
FINAL EXAM		1	50

PREREQUISITE(S)	-
COURSE DESCRIPTION	The content of the course is as follows: defining a problem statement and research topic related to the thesis, exposuring the purpose and importance of the study, process of guidance for choosing a suitable method for the implementation, developing a reference list and in addition to the aforementioned concerns, knowledge regarding the initial draft plan of the study.
COURSE OBJECTIVES	Taking the lead for master student, ensuring students to acquire knowledge, skills and attitude
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	-
COURSE OUTCOMES	By the end of this module students will be able to: 1. Choose a problem statement and define it within the context of theoretical and / or social affects, 2. Understand the relationship between research topic and the research problem, 3. Understand and explain the importance and purpose of the study, 4. Choose one of the suitable methods devoted to the research problem and search the literature, 5. Develop an initial draft plan within the context of thesis proposal, devoted to estimated general situation of the study.
REFERENCES	Büyüköztürk,Ş.(2008). Sosyal bilimler için veri analizi el kitabı. Ankara: Pegem Akademi. Ekiz. D. (2003). Eğitimde araştırma yöntem ve metotlarına giriş. Ankara: Anı Yayıncılık. Karasar, N. (1996). Araştırmalarda rapor hazırlama yöntemi. Ankara: Pars Matbaacılık. Kuş, E. (2003). Nicel-nitel araştırma teknikleri. Ankara: Anı Yayıncılık. Marshall, C. ve Rossman G. (1989). Designing qualitive research. London: Sage Publications.
OTHER REFERENCES	Miles, M. B. ve Huberman, A. M. (1994). An expanded sourcebook qualitative data analysis. (Second Edition). California: Sage Publications, Inc. Yıldırım, A. ve Şimşek H.(2005). Sosyal bilimlerde nitel araştırma yöntemleri. Ankara: Seçkin Yayınları.
TOOLS AND EQUIPMENTS REQUIRED	Coursebook

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Basic principles in educational research
2	Problem/Purpose
3	Literature Review
4	Qualitative and quantitative research designs
5	Sampling
6	Experimental research
7-8	MID-TERM EXAM
9	Survey research – Correlational research
10	Causal research
11	Qualitative and quantitative measurement
12	Quantitative data analysis
13	Writing research report
15-16	Course evaluation

NO	PROGRAM OUTCOMES	3	2	1
1	Have high level field knowledge of mathematics education.	X		
2	Know and apply contemporary teaching methods and techniques and the methods of measurement and evaluation about teaching profession.	X		
3	Have the ability to use information and communication technologies for teaching mathematical concepts effectively.		X	
4	Know developmental characteristics and learning styles of related students. Do effective planning, material development and applications which comply with these specifications.			X
5	Have the scientific and analytical thinking skills and know scientific research methods and techniques at the level of independent researching and make use of them.	X		
6	Follow national and international levels of development and changes in mathematics education.	X		
7	Have knowledge of general culture at the level of carrying out interdisciplinary studies and associating their studies with different disciplines.		X	
8	Have the skills to improve and apply original activities and teaching materials for students on issues related to mathematics education.	X		
1: None. **2**: Partially contribution. **3**: Completely contribution.				

Instructor(s): All instructors
Signature: **Date:**

ESOGU Department of Educational Sciences
Course Information Form

SEMESTER	Fall/Spring

COURSE CODE	541402004		COURSE NAME	Theories of Learning and Teaching

SEMESTER	WEEKLY COURSE PERIOD					COURSE OF		
	Theory	Practice	Labratory	Credit	ECTS	TYPE		LANGUAGE
	3	0	-	3	10	COMPULSORY ( ) ELECTIVE (X)		TR

COURSE CATAGORY				
Basic Science		Educational Science	Primary School Teaching	Social Science

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	Mid-Term	1	30
	Quiz		
	Homework	1	30
	Project		
	Report		
	Others (………)		
FINAL EXAM		1	40
PREREQUIEITE(S)			
COURSE DESCRIPTION	Learning theories, research regarding learning and teaching of school subjects, ,earning principles, application of learning principles to the instructional practices.		
COURSE OBJECTIVES	To know nature of learning theory, behavioural-associationist theories, cognitive-organizational theories and to use learning theories teaching of school subjects		
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	By the end of this course, the students will possess the required professional skills for effective and efficient instruction.		
COURSE OUTCOMES	1. To know nature of learning theory 2. To know behavioural-associationist theories 3. To know cognitive-organizational theories 4. To use learning theories teaching of school subjects		
TEXTBOOK			
OTHER REFERENCES	1. BİNBAŞIOĞLU, C. (1995) **Eğitim Psikolojisi** (Dokuzuncu Baskı), Ankara. 2. Bower, G. H. ve Hilgard, E. R. (1982) Theories of Learning. (Fifty edition). Englewood Cliffs: Prentice-Hall Inc. 3. ÇELEN, Nermin (1999) **Öğrenme Psikolojisi**, Ankara: İmge Kitapevi. 4. DEMİREL, Ö. (2004) **Öğretimde Planlama ve Değerlendirme, Öğretme Sanatı**, Ankara: PegemA Yayıncılık. 5. Eggen, P ve Kauchak, D. (2001) Educational Psychology. Ohio: Merrill Prentice Hall. 6. FELDMAN, R. S. (1996) **Understanding Psychology**, Newyork: McGraw-Hill,Inc. 7. ÖZDEN, Y. (2003) **Öğrenme ve Öğretme**, Ankara: PegemA Yayıncılık. 8. VESTER, F. (1997) **Düşünmek, Öğrenmek, Unutmak: Öğrenme Kapasitenizi Nasıl Artırabilirsiniz?** (Çev. Aydın Arıtan), İstanbul: Arıtan Yayınevi.		
TOOLS AND EQUIPMENTS REQUIRED			

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Information about and Introduction to the course and general concepts
2	Nature of learning theory
3	Behavioural learning theories
4	Social learning theory
5	Gestalt learning theory
6	Hümanistic learning theory
7-8	
9	Cognitive-organizational theory
10	Brain-based learning learning theory
11	Constructivist learning theory
12	Multiple intelligence learning theory
13	Cooperative learning theory
14	To use learning theories teaching of school subjects
15-16	

NO	PROGRAM OUTCOMES	3	2	1
1	Have high level field knowledge of mathematics education.		X	
2	Know and apply contemporary teaching methods and techniques and the methods of measurement and evaluation about teaching profession.		X	
3	Have the ability to use information and communication technologies for teaching mathematical concepts effectively.		X	
4	Know developmental characteristics and learning styles of related students. Do effective planning, material development and applications which comply with these specifications.	X		
5	Have the scientific and analytical thinking skills and know scientific research methods and techniques at the level of independent researching and make use of them.	X		
6	Follow national and international levels of development and changes in mathematics education.		X	
7	Have knowledge of general culture at the level of carrying out interdisciplinary studies and associating their studies with different disciplines.		X	
8	Have the skills to improve and apply original activities and teaching materials for students on issues related to mathematics education.		X	
1: None. **2**: Partially contribution. **3**: Completely contribution.				

Instructor(s)
Signature: **Date:**

ESOGU Department of Educational Sciences
Course Information Form

SEMESTER	Spring

COURSE CODE	541402005		COURSE NAME	Classroom Management Strategies

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
	3	0		3	10	COMPULSORY ( ) ELECTIVE (X)	Turkish

COURSE CATEGORY				
Basic Science	Educational Science	Science Education [if it contains considerable design, mark with (√)]		Social Science
	%80			%20

ASSESSMENT CRITERIA

	Evaluation Type	Quantity	%
MID-TERM	Mid-Term	1	30
	Quiz		
	Homework		
	Project	1	30
	Report		
	Others (………)		
FINAL EXAM	Homework	1	40

PREREQUIEITE(S)	-
COURSE DESCRIPTION	Basic concepts related to classroom management, communication and interaction in classroom, definition of classroom management, properties of classroom management and it's difference from classroom discipline, interior and exterior effects on classroom, models of classroom management, development of rules in classroom and application, organizing of classroom physically, management of undesirable behaviors in classroom, management of time in classroom, organization of classroom, to form the constructive classroom which is suitable for learning (examples and suggestions).
COURSE OBJECTIVES	The main aim of the course is to gain a knowledge of new approaches in classroom management learning how to be a successful teacher.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	
COURSE OUTCOMES	By the end of the course students should to have knowledge about: 1. New approaches in classroom management 2. Basic concepts of classroom management 3. The main dimensions of classroom management 4. The qualifications of educational environments 5. Teaching methods and techniques 6. Planning and controlling teaching 7. Time management 8. Management of behavior 9. The basic concepts of personality 10. Communication in general 11. Communication to students 12. Communication to parents 13. Case studies on communication 14. Motivation 15. The main qualification of being model teacher 16. Leadership in classroom.
TEXTBOOK	1. Aydın, A. (2005). Sınıf Yönetimi. Ankara: Eylül yayınevi 2. Başar, H. (2005). Sınıf Yönetimi. Ankara: Anı yayıncılık 3. Levin,J and Nolan J.F.(2000). Principles of Classroom Management. Allya and Bicon
OTHER REFERENCES	
TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS	
WEEK	**TOPICS**
1	New approaches in classroom management
2	Basic concepts of classroom management
3	The main dimensions of classroom management
4	The qualifications of educational environment
5	Teaching methods and techniques
6	Planning and controlling teaching
7-8	MID-TERM EXAM
9	Time management and management of behavior
10	Communication in general and communication to students communication to parents
11	Case studies on communication
12	Motivation and he basic concepts of personality
13	The main qualifications of being model teacher
14	Leadership in classroom
15-16	FINAL EXAM

NO	PROGRAM OUTCOMES	3	2	1
1	Have high level field knowledge of mathematics education.		X	
2	Know and apply contemporary teaching methods and techniques and the methods of measurement and evaluation about teaching profession.		X	
3	Have the ability to use information and communication technologies for teaching mathematical concepts effectively.		X	
4	Know developmental characteristics and learning styles of related students. Do effective planning, material development and applications which comply with these specifications.	X		
5	Have the scientific and analytical thinking skills and know scientific research methods and techniques at the level of independent researching and make use of them.	X		
6	Follow national and international levels of development and changes in mathematics education.		X	
7	Have knowledge of general culture at the level of carrying out interdisciplinary studies and associating their studies with different disciplines.		X	
8	Have the skills to improve and apply original activities and teaching materials for students on issues related to mathematics education.		X	
1: None. **2**: Partially contribution. **3**: Completely contribution.				

Instructor(s): Professor Ayhan AYDIN
Signature: **Date:**

ESOGU Department of Educational Sciences
Course Information Form

SEMESTER	2011-2012

COURSE CODE	541402006	COURSE NAME	Rural Mathematics Education

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
SPRING	3	0	0	3	10	COMPULSORY () ELECTIVE(X)	Turkish

COURSE CATAGORY				
Basic Science		Educational Science	Primary School Teaching	Social Science
50 %		50 %		

ASSESSMENT CRITERIA			
	Evaluation Type	**Quantity**	**%**
MID-TERM	Mid-Term		
	Quiz		
	Homework	1	40
	Project		
	Report		
	Others (………)		
FINAL EXAM		1	60

PREREQUIEITE(S)	

COURSE DESCRIPTION	Rural education, new perspectives in rural education, rural education in the world, rural education in Turkey, the relationship between rural areas and mathematics education, instructional programmes and mathematics education in rural areas, using instructional materials and technology in mathematics education in rural areas, measurement and evaluation in mathematics education in rural areas, the problems of mathematics education in rural areas.
COURSE OBJECTIVES	The aim of the course is to inform the teachers and teacher candidates about how to teach mathematics in rural areas.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	
COURSE OUTCOMES	1. to have information about the term of "rural". 2. to have information about rural education. 3.to have information about rural education in Turkey and the world. 4. to have information about how to teach mathematics effectively in rural areas.
TEXTBOOK	Lazarus, S.S.(2005). **Preparing educators to teach students in rural schools***.* **In L.J. Beaulieu & R. Gibbs**, *The Role of Education: Promoting the Economic and Social Vitality of Rural America* **(56-63).**
OTHER REFERENCES	**Altun, M. (2004)**. Teaching Mathematics (6-8th grade). Alfa Publications. **Bainer, D.L. (1993).** Problems of rural elementary school teachers, *Rural Educator*, 14(2), 1–3. **Baki, A. (2008).** Mathematics Education from Theory to Practice. Harf Publications. **Barley, Z. A. (2009).** Preparing teachers for rural appointments: Lessons from the mid-continent. *The Rural Educator, 30*(3), 10-15. **Baykul, Y. (2004)**. Teaching Mathematics (6-8th grade). Pegem A Publications. **Dillon, J. ve Maguire, M. (1997).** Becoming a Teacher. Open University Press. **MEB.(2005).** Elementary Mathematics Curriculum (6-8th grade). MEB Publications. **Olkun, S. ve Toluk Uçar, Z. (2000).** Activity Based Mathematics Learning. Anı Publications.
TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Rural education
2	New perspectives in rural education
3	Rural education in the world
4	Rural education in Turkey
5	The relationship between rural areas and mathematics education
6	Instructional programmes and mathematics education in rural areas
7-8	
9	Instructional programmes and mathematics education in rural areas
10	Using instructional materials and technology in mathematics education in rural areas
11	Using instructional materials and technology in mathematics education in rural areas
12	Measurement and evaluation in mathematics education in rural areas
13	The problems of mathematics education in rural areas
14	The problems of mathematics education in rural areas
15-16	

NO	PROGRAM OUTCOMES	3	2	1
1	Have high level field knowledge of mathematics education.		X	
2	Know and apply contemporary teaching methods and techniques and the methods of measurement and evaluation about teaching profession.	X		
3	Have the ability to use information and communication technologies for teaching mathematical concepts effectively.	X		
4	Know developmental characteristics and learning styles of related students. Do effective planning, material development and applications which comply with these specifications.	X		
5	Have the scientific and analytical thinking skills and know scientific research methods and techniques at the level of independent researching and make use of them.		X	
6	Follow national and international levels of development and changes in mathematics education.		X	
7	Have knowledge of general culture at the level of carrying out interdisciplinary studies and associating their studies with different disciplines.		X	
8	Have the skills to improve and apply original activities and teaching materials for students on issues related to mathematics education.	X		
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s): Assoc. Prof. Dr. Kürşat YENİLMEZ
Signature: **Date:** 23.01.2012

ESOGU Department of Educational Sciences
Course Information Form

SEMESTER	FALL

COURSE CODE	541402007	COURSE NAME	Measurement and Evaluation in Primary Education

SEMESTER	WEEKLY COURSE PERIOD					COURSE OF	
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
2	3	0	0	3	10	COMPULSORY () ELECTIVE (x)	Turkish

COURSE CATAGORY				
Basic Science	Educational Science			Social Science
-	%100	-		-

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term		
	2nd Mid-Term		
	Quiz		
	Homework	1	40
	Project		
	Report		
	Others (………)		
FINAL EXAM		1	60

PREREQUIEITE(S)	None
COURSE DESCRIPTION	Psychometric techniques that use in primary schools; achievement tests, observation forms, self-assessment, peer-assessment, portfolio, control lists, rubrics and other techniques.
COURSE OBJECTIVES	Comprehension the psychometric techniques that use in primary schools. Development and administration psychometric instruments
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	
COURSE OUTCOMES	Knows the purpose of use of psychometric instruments, develops a proper psychometric instrument.
TEXTBOOK	*Halil Tekin, Eğitimde Ölçme ve Değerlendirme, Yargı Yayınevi.*
OTHER REFERENCES	*Fuat Turgut, Yaşar Baykul, Eğitimde Ölçme ve Değerlendirme, Pegem Akademi, Deha Doğan, Ömer Kutlu, İsmail Karakaya, Öğrenci Başarısının Belirlenmesi, Adnan Erkuş, Sınıf Öğretmenleri İçin Ölçme ve Değerlendirme, Ekinoks.*
TOOLS AND EQUIPMENTS REQUIRED	Computer

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Introducing
2	Basic terms (measurement, types of measurement, types of scales and their properties, evaluation).
3	Validity, techniques to determine validity of a psychometric instrument. Usefulness.
4	Review the primary school curriculums.
5	Developing achievement tests.
6	Preparing review forms.
7	Preparing self-assessment forms.
8	Preparing peer-assessment forms
9	Portfolio assessment.
10	Developing control lists.
11	Developing gradation scales.
12	Developing rubrics.
13	Other psychometric techniques.
14	Administrating the psychometric instruments, and interpretation the results.
15-16	Final Exam

NO	PROGRAM OUTCOMES	3	2	1
1	Have high level field knowledge of mathematics education.		X	
2	Know and apply contemporary teaching methods and techniques and the methods of measurement and evaluation about teaching profession.	X		
3	Have the ability to use information and communication technologies for teaching mathematical concepts effectively.	X		
4	Know developmental characteristics and learning styles of related students. Do effective planning, material development and applications which comply with these specifications.	X		
5	Have the scientific and analytical thinking skills and know scientific research methods and techniques at the level of independent researching and make use of them.		X	
6	Follow national and international levels of development and changes in mathematics education.		X	
7	Have knowledge of general culture at the level of carrying out interdisciplinary studies and associating their studies with different disciplines.		X	
8	Have the skills to improve and apply original activities and teaching materials for students on issues related to mathematics education.	X		
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s): Asst. Prof. Dr. Ümit ÇELEN
Signature: **Date:**

ESOGU Department of Educational Sciences
Course Information Form

SEMESTER	2011-2012

COURSE CODE	541402008	COURSE NAME	Number Systems and Arithmetic Teaching

SEMESTER	WEEKLY COURSE PERIOD					COURSE OF	
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
FALL	3	0	0	3	10	COMPULSORY () ELECTIVE(X)	Turkish

COURSE CATAGORY				
Basic Science	Educational Science	Primary School Teaching		Social Science
50 %	50 %			

ASSESSMENT CRITERIA				
	Evaluation Type	Quantity	%	
MID-TERM	Mid-Term			
	Quiz			
	Homework	1	40	
	Project			
	Report			
	Others (………)			
FINAL EXAM		1	60	

PREREQUIEITE(S)	
COURSE DESCRIPTION	Explaining Numeracy, Beginning with counting, Understanding Numeration System, Giving Meaning to Addition and Subtraction, The Progress to Multiplication and Division, Understanding Rational Numbers
COURSE OBJECTIVES	The aim of the course is to teach teachers and teacher candidates numeration system and teaching methods of arithmetic.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	
COURSE OUTCOMES	1. to understand the importance and aims of the teaching mathematics. 2. to have information about the elementary mathematics curriculum. 3. to have information about thinking and thinking skills about on numerical systems and arithmetic 4. to have information about numeracy
TEXTBOOK	1.Nures, T.& Brgant P.(2006). Children Doing Mathematics, Blackwell Publichers
OTHER REFERENCES	**Altun, M. (2004)**. Teaching Mathematics (6-8th grade). Alfa Publications. **Baki, A. (2008).** Mathematics Education from Theory to Practice. Harf Publications. **Baykul, Y. (2004)**. Teaching Mathematics (6-8th grade). Pegem A Publications. **Dillon, J. ve Maguire, M. (1997).** Becoming a Teacher. Open University Press. **MEB.(2005).** Elementary Mathematics Curriculum (6-8th grade). MEB Publications. **Olkun, S. ve Toluk Uçar, Z. (2000).** Activity Based Mathematics Learning. Anı Publications.
TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Explaining Numeracy and to be thought numerical
2	Explaining Numeracy and to be thought numerical
3	Beginning with counting
4	Understanding numeration systems
5	Understanding numeration systems
6	Measurement Systems
7-8	
9	Giving meaning to addition and subtraction
10	The progress to multiplication and division
11	The progress to multiplication and division
12	Understanding Rational Numbers
13	Understanding Rational Numbers
14	Children's concepts of mathematics
15-16	

NO	PROGRAM OUTCOMES	3	2	1
1	Have high level field knowledge of mathematics education.		X	
2	Know and apply contemporary teaching methods and techniques and the methods of measurement and evaluation about teaching profession.		X	
3	Have the ability to use information and communication technologies for teaching mathematical concepts effectively.			X
4	Know developmental characteristics and learning styles of related students. Do effective planning, material development and applications which comply with these specifications.	X		
5	Have the scientific and analytical thinking skills and know scientific research methods and techniques at the level of independent researching and make use of them.	X		
6	Follow national and international levels of development and changes in mathematics education.		X	
7	Have knowledge of general culture at the level of carrying out interdisciplinary studies and associating their studies with different disciplines.		X	
8	Have the skills to improve and apply original activities and teaching materials for students on issues related to mathematics education.		X	
1: None. **2**: Partially contribution. **3**: Completely contribution.				

Instructor(s): Assoc. Prof. Dr. Pınar ANAPA
Signature: **Date:** 23.03.2012

ESOGÜ Department of Educational Sciences
Course Information Form

SEMESTER	2012-2013

COURSE CODE	541402009	**COURSE NAME**	Spatial Thinking in Mathematics Education

SEMESTER	**WEEKLY COURSE PERIOD**			**COURSE OF**			
	Theory	**Practice**	**Labratory**	**Credit**	**ECTS**	**TYPE**	**LANGUAGE**
	3	0	0	3		COMPULSORY ( ) ELECTIVE (X)	English

COURSE CATAGORY			
Basic Science	**Educational Science**	**Mathematics Education** [if it contains considerable design, mark with (√)]	**Social Science**
	% 25	% 75	% 25

ASSESSMENT CRITERIA			
MID-TERM	**Evaluation Type**	**Quantity**	**%**
	Mid-Term	1	40
	Quiz		
	Homework		
	Project		
	Report		
	Seminar		
FINAL EXAM		1	%60
PREREQUIEITE(S)	-		

COURSE DESCRIPTION	Definitions of spatial thinking (reasoning, ability and skill), Concepts of spatial visualization, spatial perception, mental rotation, spatial orientation and spatial relations and importance of spatial thinking in math education. Factors of spatial ability, hemispheric theory, development of spatial thinking. Reviewing national and international literature about spatial thinking. Spatial thinking in curriculums and math textbooks.
COURSE OBJECTIVES	The aim of this course to provide students principal relationships among spatial thinking, mathematics and geometry education and problem solving. Besides, another aim of the course is to review process of development of spatial thinking and related factors of students. By this way, graduate students get deep information about mathematics and geomety education and students' mathematical thinking.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	In the course, it is aimed to make a major contribution to field of mathematics education by reviewing development of spatial thinking, components of spatial thinking and factors; national and international literature, national and international curriculums in terms of spatial factors.
COURSE OUTCOMES	By the end of this course graduate students will be able to: - define spatial thinking (reasoning, ability and skill), - explain spatial components, - define spatial factors, - get information about development of spatial reasoning, - get further information about national and international literature, - interpret spatial thinking in curriculums and math textbooks.
TEXTBOOK	-
OTHER REFERENCES	Linn, M.C. & Petersen, A.C. (1985). Emergence and Characterization of Sex Differences in Spatial Ability: A-Meta Analysis, *Child Development, 56,* 1479-1498. Lohman, D.F. (1993). *Spatial Ability and G.* Paper presented at the First Spearman Seminar, University of Plymouth, July 21, 1993. Manger, T. & Eikeland, O.J. (1998). The Effects of Spatial Visualization and students' Sex on Mathematical Achivement, *British Journal of Psychology, 89,* 17-25. McGee, M.G. (1979). Human spatial abilities: psychometric studies and environmental , genetic, hormonal and influences. *Psychological Bulletin, 86* (5), 889-918.

	National Council of Teachers of Mathematics. (2000). *Principles and Standarts for School Mathematics*. Reston, Va.: National Council of Teachers of Mathematics. Olkun, S. (2003). Making Connections: Improving Spatial Abilities with Engineering Drawing Activities, *International Journal of Mathematics Teaching and Learning,* Retrieved on http://www.ex.uk/cimt/ijmt1/ijabout.htm. Olkun, S., Altun, A. (2003). İlköğretim Öğrencilerinin Bilgisayar Deneyimleri ile Uzamsal Düşünme ve Geometri Başarıları Arasındaki ilişki. *The Turkish Online Journal of Educational Technology – TOJET*, 2 (4), Article 13. Turğut, M. (2007). *Investigation of 6.,7. and 8. Grade students' spatial ability, Unpublished Master of Science Thesis,* (Turkish), Graduate School of Educational Sciences, Dokuz Eylül University, Izmir, Turkey. Yılmaz, H. B. (2009). On the Development and Measurement of Spatial Ability, *International Electronic Journal of Elementary Education, 1* (2), 83-96.
TOOLS AND EQUIPMENTS REQUIRED	Computer and projection.

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Concept of spatial thinking (reasoning, ability and skill)
2	Spatial visualization, spatial orientation
3	Mental rotation, spatial perception and spatial relations
4	Factors effecting spatial thinking (gender, math performance, parents' jobs etc.)
5	Factors effecting spatial thinking: Hemispheric theory
6	Development of spatial ability: computer games, isometric drawings and visualization
7-8	MID -TERM
9	How spatial thinking is measured? Reviewing of standard tests (Guay's PSVT, MRT-A, Paper Folding Tests)
10	Reviewing national literature
11	Reviewing international literature
12	Spatial thinking in national math curriculum
13	Spatial thinking in international math curriculums
14	Spatial thinking in textbooks and evaluation of the course
15-16	FINAL EXAM

NO	PROGRAM OUTCOMES	3	2	1
1	Have high level field knowledge of mathematics education.	X		
2	Know and apply contemporary teaching methods and techniques and the methods of measurement and evaluation about teaching profession.		X	
3	Have the ability to use information and communication technologies for teaching mathematical concepts effectively.			X
4	Know developmental characteristics and learning styles of related students. Do effective planning, material development and applications which comply with these specifications.		X	
5	Have the scientific and analytical thinking skills and know scientific research methods and techniques at the level of independent researching and make use of them.	X		
6	Follow national and international levels of development and changes in mathematics education.	X		
7	Have knowledge of general culture at the level of carrying out interdisciplinary studies and associating their studies with different disciplines.	X		
8	Have the skills to improve and apply original activities and teaching materials for students on issues related to mathematics education.	X		
1: None. **2**: Partially contribution. **3**: Completely contribution.				

Instructor(s): Assistant Professor Melih Turgut, PhD

Sign   **Date:** 10/12/2012

ESOGÜ Department of Educational Sciences
Course Information Form

SEMESTER	2014-2015

COURSE CODE	541402010	**COURSE NAME**	Teaching Mathematical Problem Solving and Problem Posing

SEMESTER	**WEEKLY COURSE PERIOD**					**COURSE OF**		
	Theory	**Practice**	**Labratory**	**Credit**	**ECTS**	**TYPE**		**LANGUAGE**
SPRING	3	0	0	3	10	COMPULSORY ☐ ELECTIVE ☒		Türkçe

COURSE CATAGORY

Basic Science	**Educational Science**	Mathematics Education		**Social Science**
	%25	%75		

ASSESSMENT CRITERIA

	Evaluation Type	**Quantity**	**%**
MID – TERM	Mid-Term	-	-
	Quiz	-	-
	Homework	1	30
	Project	1	40
	Report	-	-
	Others ( )	-	-
FINAL EXAM	(Written Exam)	1	30
PREREQUIEITE(S)			

COURSE DESCRIPTION	• A problem solving and posing activity helps students to be more involved in the process of teaching and learning, which enables students to explore the materials and become critical thinkers. • In a problem solving and posing curriculum, students do not rely on teachers and text books a lot. Instead, they are responsible for their own learning of mathematics. It encourages reasoning and reflection which increases student's responsibility and engagement. • Problem solving and posing to students can have many benefits: o Problem solving and posing strategy is a way of presenting material to teach students to pose and solve problem with given tools and knowledgeable guidance. o It gives more freedom to students to interact with mathematical concepts and develop their mathematical skills. o NCTM's (National Council of Teachers of Mathematics) Curriculum and Evaluation Standards for School Mathematics proposed problem solving as a method of inquiry to understand mathematical content, formulate problems, verify and interpret results, generalize solutions and strategies, and acquire confidence in mathematics (Malloy, P1).
COURSE OBJECTIVES	1. To learn how to solve problems to make mathematics learning more joyful 2. Using problem solving strategies in lessons 3. Understanding the character of a good problem solver 4. Posing and solving new problems 5. Learning to make a planning to solve problems
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Teaching to make a general plan for solving a problem: Understanding the problem, making plan, applying the plan and evaluating the results.
COURSE OUTCOMES	To be able to presentation according to problem solving strategies Evaluating problem solving in mathematics lesson curriculum Having positive attitudes and beliefs towards problem solving Using different problem solving strategies Posing and modelling mathematical problems Defining the conceptsof problem solving and problem posing
TEXTBOOK	
OTHER REFERENCES	1. Carpenter, T. P. (1988). Teaching as problem solving. In E. A. Silver (Ed.), The teaching and assessing of mathematical problem solving (pp. 187-202). Hillsdale, NJ: Erlbaum. 2. Polya, G. (1945). How to solve it: A new aspect of mathematical method. London: Penguin Books Ltd. 3. Polya, G. (1953).On Teaching Problem Solving. In H. F. Fehr (Ed.),The Learning of Mathematics: Its theory and practice (pp. 228-270). 21st yearbook of the NCTM. Reston,

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TOOLS AND EQUIPMENTS REQUIRED	Temel Eğitim Araçları (Bilgisayar, Projeksiyon vb)

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Introduction to Lesson -Purpose of the Lesson
2	What is Problem / Problem Solving? Types of Problems
3	Some important problem solving models and their comparison
4	NCTM's Standards for problem solving
5	Problem solving in MEB's Elementary and Secondary School Mathematics Curriculum
6	Teaching problem solving, Strategies for problem solving
7-8	MID-TERM EXAMS
9	What is problem posing?
10	Study and exercises on problem posing
11	Posing problems and solving them according to proper strategies
12	Project Study
13	Project Study
14	Project Study
15-16	FINAL EXAMS

NO	PROGRAM OUTCOMES	3	2	1
1	Have high level field knowledge of mathematics education.	☐	☒	☐
2	Know and apply contemporary teaching methods and techniques and the methods of measurement and evaluation about teaching profession.	☒	☐	☐
3	Have the ability to use information and communication technologies for teaching mathematical concepts effectively.	☐	☒	☐
4	Know developmental characteristics and learning styles of related students. Do effective planning, material development and applications which comply with these specifications.	☒	☐	☐
5	Have the scientific and analytical thinking skills and know scientific research methods and techniques at the level of independent researching and make use of them.	☐	☒	☐
6	Follow national and international levels of development and changes in mathematics education.	☐	☒	☐
7	Have knowledge of general culture at the level of carrying out interdisciplinary studies and associating their studies with different disciplines.	☐	☐	☒
8	Have the skills to improve and apply original activities and teaching materials for students on issues related to mathematics education.	☐	☒	☐
1: None **2**: Partially contribution **3**: Completely contribution				

Date:
Instructor(s):
Signature: