



## KARADENİZ TEKNİK ÜNİVERSİTESİ

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**Diploma Date: 08/06/2013**

### **DIPLOMA SUPPLEMENT**

**Diploma No : 2013-0203.10**

This Diploma Supplement follows the model developed by the European Commission, Council of Europe and UNESCO/CEPES. The purpose of the supplement is to provide sufficient independent data to improve the international "transparency" and fair academic and professional recognition of qualifications (diplomas, degrees, certificates etc.). It is designed to provide a description of the nature, level, context, content and status of the studies that were pursued and successfully completed by the individual named on the original qualification to which this supplement is appended. It should be free from any value-judgements, equivalence statements or suggestions about recognition. Information in all eight sections should be provided. Where information is not provided, an explanation should give the reason why.

#### **1. INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION**

1.1. Family name(s) : \_\_\_\_\_ 1.3. Date of birth : 15/05/1990  
1.2. Given name(s) : \_\_\_\_\_ 1.4. Student identification number or code : \_\_\_\_\_

#### **2. INFORMATION IDENTIFYING THE QUALIFICATION**

2.1. Name of the qualification: Matematik, Lisans  
2.2. Main field(s) of study for qualification: Mathematics  
2.3. Name and status of awarding institution : KARADENİZ TEKNİK ÜNİVERSİTESİ, DEVLET ÜNİVERSİTESİ  
KARADENİZ TECHNICAL UNIVERSITY, STATE UNIVERSITY  
2.4. Name and type of institution administering the studies : Same as 2.3  
2.5. Language(s) of instruction/examination : <http://www.ktu.edu.tr/2014/matematik>

#### **3. INFORMATION ON THE LEVEL OF THE QUALIFICATION**

3.1. Level of qualification : Bachelor's Degree (First Cycle Degree)  
3.2. Official length of program : Bachelor's Degree  
3.3. Access requirement(s) : - High school diploma,  
- Obtaining the required grade from National University Entrance and Placement Exam (ÖSS),  
- Placement certificate issued by the Student Selection and Placement Centre (OYS),  
- English proficiency (500 from TOEFL / 6 from IELTS).

#### **4. INFORMATION ON THE CONTENTS AND RESULTS GAINED**

4.1. Mode of study : Full-Time  
4.2. Programme requirements : To be able to secure the bachelor's degree in the field of Mathematics (and thus title of Mathematicians) the students are required to  
(a) have passed all courses in the curriculum with a grade of at least DC,  
(b) have achieved a cumulative gross point average of at least 2.00 out of 4.00,  
(c) prepared, submitted and successfully defended a graduation thesis with a passing grade.

##### **Objectives and learning outcomes :**

Undergraduate program of Department of Mathematics designed to prepare students analyzing mathematical methods, rules and systems, and learning their correspondence with each other.

- The students who have successfully completed the programme should be able to
  - create appropriate learning environments in order to enrich the teaching and learning process, use different teaching methods and techniques and benefit teaching materials and resources.
  - evaluate mathematical development of their students by using different measurement and assessment techniques.
  - communicate well with students and colleagues and construct a team work, use language effectively to follow the work published in the field.
- have capabilities of powerful mathematical communication, problem solving, reasoning and association.

- have sufficient knowledge of the area and use the knowledge effectively during teaching-learning process.
- associate the mathematics with different disciplines, design mathematical models of problems in different disciplines.

#### 4.3. Programme details and individual grades/marks obtained :

First Semester					
Code	Course Title	C/E	Credit	Grade	ECTS
FIZ 119	Physics - I	C	4,0	AA	5,0
MAT 127	Analysis - I	C	5,0	CC	9,0
TDB 101	Turkish Language - I	C	2,0	CB	2,0
ENF 100	Application Of Basic Information Technologi	C	0,0	G	3,0
YDI 111	English - I	C	3,0	BA	3,0
MAT 139	Abstract Mathematics-I	C	4,0	AA	6,0
AITB191	History Of Revolution And Ataturk' S Princip	C	2,0	BA	2,0

Second Semester					
Code	Course Title	C/E	Credit	Grade	ECTS
FIZ 118	Physics - II	C	4,0	BB	5,0
MATH120	Analytical Geometry	C	4,0	AA	4,0
YDI 112	English - II	C	3,0	CB	3,0
TDB 102	Turkish Language - II	C	2,0	BB	2,0
AITB192	History Of Revolution And Ataturk' S Princip	C	2,0	CB	2,0
MAT 140	Abstract Mathematics-II	C	4,0	AA	5,0
MAT 128	Analysis - II	C	5,0	AA	9,0

Third Semester					
Code	Course Title	C/E	Credit	Grade	ECTS
MAT 215	Linear Algebra - I	C	4,0	AA	7,0
MATH219	Differential Equations-I	C	4,0	AA	6,0
MAT 217	Probability And Statistics-I	C	4,0	BA	6,0
YDI 211	English Reading And Writing	C	2,0	AA	2,0
MATH233	Analysis-II	C	5,0	AA	9,0

Fourth Semester					
Code	Course Title	C/E	Credit	Grade	ECTS
MAT 216	Linear Algebra - II	C	4,0	AA	7,0
YDM 214	Ydm 214 Professional English-I	C	2,0	CB	2,0
MATH220	Differential Equations-II	C	4,0	AA	6,0
MAT 218	Probability And Statistics-II	C	4,0	BB	6,0
MATH234	Analysis-IV	C	5,0	AA	9,0

Fifth Semester					
Code	Course Title	C/E	Credit	Grade	ECTS
MAT 313	Algebra - I	C	4,0	CB	8,0
MAT 331	Complex Analysis	C	4,0	CB	8,0
MATH323	Differential Geometry	C	4,0	AA	6,0
YDM 313	Ydm 313 Professional English - II	C	2,0	AA	2,0
MATH317	Symbolic Analysis With Matlab	C	4,0	AA	6,0

Sixth Semester					
Code	Course Title	C/E	Credit	Grade	ECTS
MAT 314	Algebra - II	C	4,0	AA	8,0
MAT 348	General Topology	C	4,0	BB	8,0
SEC 304	The Theory Of Numbers	E	4,0	CB	6,0
YDM 314	Ydm 314 English In Business Life	C	2,0	AA	2,0
MAT 318	Real Analysis	C	4,0	BB	6,0

Seventh Semester					
Code	Course Title	C/E	Credit	Grade	ECTS
4MA101	Analytic Functions	C	4,0	CC	6,0
4MA102	Transform Theory	C	2,0	BA	4,0
1DV019	Basic Numerical Methods	C	4,0	CC	6,0
2MA106	Elementary Number Theory	C	4,0	AA	6,0
11V530	Swedish Culture Leisure And Sports	C	2,0	AA	4,0
4MA103	Partial Differential Equations	C	2,0	CC	4,0

Eighth Semester					
Code	Course Title	C/E	Credit	Grade	ECTS
TEZ 400	Completion Work	C	3,0	BA	8,0
SEC 418	Industrial Mathematics	E	4,0	BA	6,0
SEC 422	Some Titles From Group Theory	E	4,0	BA	6,0
MAT 414	Intruition To Functional Analysis	C	4,0	AA	6,0
MAT 494	Seminar - II	C	1,0	AA	4,0

Total Local Credits : 152    Total ECTS Credits : 240    Earned Credit =  $\sum$  (Local Credit \* Grade Credit) : 517,5  
 General Academic Average (CGPA= Total Earned Credit / Total Local Credit) : 3,40 out of 4,00  
 C : Compulsory; E : Elective; NC : Non Credit

#### 4.4. Grading scheme, grade translation and grade distribution guidance :

A student's academic success is calculated by the Registrar's Office by taking into consideration the semester final grade (which is the sum of 50% of mid-term exam score and 50% of the final exam score) and cumulative grade point average (CGPA), and this grade is recorded in the student's personal file. For each course taken, the student is assigned one of the following grades by the course teacher. The letter grades below are given in all faculties excluding the Faculty of Medicine where grades are assigned and calculated out of 100. The table shows a brief description of grading scheme which is changeable according to the general success rate of a class. The grades in the table include classification system for only three groups of classes, namely very successful class, successful class and average class. The grades in the table are calculated statistically based on the final marks using the formulae of  $(10*((x-X)/s)+50)$ , where x denotes the final mark of a student from s course, X the mean of final marks of all students from that course, s the standare deviaton. For a more detailed descriptpon please refer to [http://ogrweb.ktu.edu.tr/ogrweb/duyurular/senato\\_esaslari.pdf](http://ogrweb.ktu.edu.tr/ogrweb/duyurular/senato_esaslari.pdf)

KTÜ Letter Grades	Scores of same selected groups of class			Grade Credit Points	Definitions	ECTS Grades	Calculation of Grades
	Very Successful	Successful	Average				
AA	>60,99	>62,99	>64,99	4.0	Excellent	A	First 10%
BA	56-60,99	58-62,99	60-64,99	3.5	Very Good	B	Next 25%
BB	51-55,99	53-57,99	55-59,99	3.0			
CB	46-50,99	48-52,99	50-54,99	2.5	Good	C	Next 30%
CC	41-45,99	43-47,99	45-49,99	2.0	Satisfactory	D	Next 25%
DC	36-40,99	38-42,99	40-44,99	1.5	Sufficient	E	Next 10%
DD	31-35,99	33-37,99	35-39,99	1.0	Fail	FX	
FD	26-30,99	28-32,99	30-34,99	0.5			
FF	<26	<28	<30	0.0			

I : Incomplete  
NA: Non-attendance

G: Satisfactory Completion  
S: Not completed, still in progress

U: Unsatisfactory  
M: Exempt

For associate and B.Sc. or B.A. degrees, students must obtain at least DC or S from each course, have a CGPA of not less than 2.00 out of 4.00, and have successfully completed all the courses and summer practices in the programme. Students who obtain a CGPA of 3.00-3.49 at the end of a semester are considered Honour Students and those who get a CGPA of 3.50-4.00 High Honour Students, and this is recorded in their academic report.

For M.Sc. or M.A. degrees, students must obtain at least CB or S from each course and their calculated CGPA must be not less than 2.50 out of 4.00. For Ph.D degrees, the minimum letter grade for each course and CGPA must be BB or S and 3.00 out of 4.00, respectively Students of these graduate programmes must complete courses with a total local credit of at least 21, and prepare and successfully defend a thesis to fulfill all the requirements.

Students of Master's without thesis programmes must complete a minimum of 10 courses (or at least 30 local credits) and achieve a term project.

**4.5. Overall Classification of the Award :** 3,40 / 4,00 - ONUR - Programı 4 yılda tamamlamıştır.  
(in original language) Honors Degree

#### 5. INFORMATION ON THE FUNCTION OF THE QUALIFICATION

**5.1. Access to further study :** Student may apply to graduate programs

**5.2. Professional status :** This degree enables the holder to exercise the profession  
(if applicable)

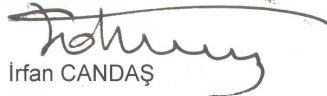
#### 6. ADDITIONAL INFORMATION

**6.1. Additional Information :** N/A

**6.2. Further information sources :** <http://www.ktu.edu.tr/2014/matematik>  
Universitiy web site : <http://www.ktu.edu.tr>  
International Office web site : <http://ofinaf.ktu.edu.tr>  
Web site for the information package of the university : <http://www.obs.ktu.edu.tr>  
The Council of Higer Education web site : <http://www.yok.gov.tr>  
The Turkish ENIC/NARIC web site : <http://www.enic-naric.net/index.aspx?country=Turkey>

## 7. CERTIFICATION OF THE SUPPLEMENT

7.1. Date : 08/06/2013

7.2. Signature :  İrfan CANDAŞ

7.3. Capacity : Registrar of the Karadeniz Technical University

7.4. Official stamp or seal :



## 8. INFORMATION ON THE NATIONAL HIGHER EDUCATION SYSTEM

The basic structure of the Turkish National Education System consists of stages of noncompulsory pre-school education; compulsory primary (elementary and middle school) and secondary (high school) education; and higher education. Primary education begins at the age of 5.5 (66 months), lasts eight years and comprises elementary and middle school education, four years each. Secondary education is also four years and divided into two categories as "General High School Education" and "Vocational and Technical High School Education". The entry into these categories is through composite scores obtained from a centralized exam for secondary schools.

Higher education system in Turkey is managed by the Council of Higher Education (CoHE, Yükseköğretim Kurulu-YÖK) which is an autonomous public body responsible for the planning, coordination, governance and supervision of higher education within the provisions set forth in the Constitution of the Turkish Republic and the Higher Education Law. Both state and non-profit foundation universities are founded by law and subjected to the Higher Education Law and to the regulations enacted in accordance with it.

Higher education in Turkey comprises all post secondary higher education programmes, consisting of short, first, second, and third cycle degrees in terms of the terminology of the Bologna Process. The structure of Turkish higher education degrees is based on a two-tier system, except for dentistry, pharmacy, medicine and veterinary medicine programmes which have a one-tier system. The duration of these one-tier programmes is five years (300 ECTS) except for medicine which lasts six years (360 ECTS). The qualifications in these one-tier programmes are equivalent to the first cycle (bachelor's) plus second cycle (master's) degree. Undergraduate level of study consists of short cycle (associate's)-(önlisans derecesi) and first cycle (bachelor's)-(lisans derecesi) degrees which are awarded after successful completion of full-time two-year (120 ECTS) and four-year (240 ECTS) study programmes, respectively.

Graduate level of study consists of second cycle (master's)-(yüksek lisans derecesi) and third cycle (doctorate)-(doktora derecesi) degree programmes. Second cycle is divided into two sub-types named as master without thesis and master with thesis. Master programmes without thesis require 60 to 90 ECTS credits and consist of courses and a semester project. 60 ECTS non-thesis master programmes are exceptional, and exist in a few disciplines. The master programmes with a thesis require 90 to 120 ECTS credits, which consists of courses, a seminar, and a thesis. Third cycle (doctorate) degree programmes are completed having earned a minimum of 180 ECTS credits, which consists of completion of courses, passing a proficiency examination and a doctoral thesis. Specialization in medicine, accepted as equivalent to third cycle programmes are carried out within the faculties of medicine, university hospitals and the training hospitals operated by the Ministry of Health. Universities consist of graduate schools (Institutes) offering second cycle (master's) and third cycle (doctorate) degree programmes, faculties offering first cycle (bachelor's degree) programmes, four-year higher schools offering first cycle (bachelor's) degree programmes with a vocational emphasis and two-year vocational schools offering short cycle (associate's) degree programmes of a strictly vocational nature.

Since 2003, first cycle degree holders may apply directly to third cycle (doctorate) programmes if their performance at the first cycle degree level is exceptionally high and their national central Graduate Education Entrance Examination (ALES) score is also high and their application is approved. For these students, theoretical part of the programmes requires additional courses of 60 ECTS credits.

Admission of national students to short and first cycle degree programmes is centralized and based on a nationwide one/two-stage examination(s) conducted by an autonomous public body (Assessment, Selection and Placement Centre-ÖSYM). Candidates gain access to institutions of higher education based on their composite scores consisting of the scores on the selection examination and their high school grade point averages. Admission to graduate programmes is directly conducted by the higher education institutions (HEIs) within the frameworks of the publicly available national and institutional regulations. Admission of foreign students to programmes at all levels of higher education can be done by direct applications of candidates to HEIs based on publicly available national and institutional regulations. The Turkish National Qualifications Framework for Higher Education (TYYÇ): The National Qualifications Framework for Higher Education in Turkey (TYYÇ) developed with reference to the QF for European Higher Education Area and the EQF for lifelong learning was adopted by the CoHE in 2010. The framework has been developed as a part of a single national qualifications framework, which would eventually consists of 8 level national framework covering all levels of educations on completion of the ongoing work at the national level, in which the higher education levels lie on levels between 5 to 8. The levels of the TYYÇ with reference to the European overarching qualifications frameworks as well as that to ECTS credits and student workload are shown below

TYYÇ LEVELS, QUALIFICATIONS TYPES AND ECTS CREDITS						
Higher Education Levels/Cycles			AWARDS/ DEGREES	LENGTH (Year)	TOTAL ECTS CREDITS (Year/60 ECTS)	TOTAL STUDENT WORKLOAD (1 ECTS=25-30h)
QF-EHEA	EQF-LLL	TYYÇ LEVELS				
3	8	8	Doctorate Specialization in Medicina Doctorate in Art	3 (min.)	180 (min.)	4.500-5.400
2	7	7	Master's Degree	1-2	60-120	1.500-3.600
1	6	6	Bachelor's Degree	4	240	6.000-7.200
Short Cycle	5	5	Associate's Degree	2	120	3.000-3.600

