STANDARD AGREEMENT OF INTERINSTITUTIONAL COOPERATION
BETWEEN
FIRAT UNIVERSITY, COLLEGE OF TECHNOLOGY
AND
SAM HOUSTON STATE UNIVERSITY

This present document certifies the Standard Inter-Institutional Agreement between **Firat University, College of Technology**, with properly represented by its Rector,Prof. Dr. A. Feyzi Bingöl ID TC 4428704562, with legal residence in Firat Universitesi Kampusu, Rektorluk, 23119 Elazig/Turkey which will be identified as FUCOT on one side; and on the other side **Sam Houston State University** represented by its president Dr. Dana Gibson identified with ID 0262-074 with legal residence in 1831 University Avenue, Huntsville TX 77341-2088 which will be identified as SHSU.

SECTION I
GENERAL CONDITIONS

Article 1: Aim and Scope

The aim of this protocol is to establish the principles and conditions regarding the scope and implementation of FUCoT and SHSU in various areas outlined below and **which** will be jointly managed and awarded by Fırat University, College of Technology and Sam Houston State University.

Both institutions have approached this protocol with the spirit of goodwill and friendship in order to encourage common understanding, close and beneficial relationships between the members of the societies to which they belong.

The protocol will be governed within the scope of Turkish Higher Education Council's 'Regulation about the Foundation of Joint Education Programmes of Higher Education Institutions' with Sam Houston State University.

Article 2: Precedent of Parties

Sam Houston State University is a multicultural institution whose mission is to provide excellence in continuing to improve the quality of education, academic research and service to its students as well as the appropriate entities at the Regional, State and International level. The university has 06 academic Colleges and each has multiple departments. The Department of Computer Science is part of the College of Sciences and consists of one undergraduate and three graduate programs of study. The department of Computer Science offers an undergraduate program in Computing Science with emphases in Computer Science, Information Systems and digital Forensics. At the graduate level, the department offers Master of Science programs in Computer Information systems, Digital Forensics and Information Assurance and Security. The graduate programs provide for the acquisition of advanced and specialized knowledge applicable to appropriate professional practice in each area and leads to academic research and the furtherance of knowledge and praxis.

Firat University aims to provide education and training in variety of fields in order to educate individuals who fulfil their tasks successfully, who admit the superiority of mind and science, who adopt the principles of contemporary civilization, who have internationally competitive knowledge and skills, and who are responsible and gifted. The university have been conducting studies so as to interpret, improve, protect and provide the prevalence of international cultures, develop explicit and clear management models that are responsible against their peers. The university has 12 academic Colleges and each has multiple departments. In addition, there are 8 Technical Vocational Schools of Higher Education (community colleges) and 3 Institutes. The Department of Software Engineering is a part of the College

of Technology and offers an undergraduate degree. The graduated students earn the title of Software Engineer after completing their four year lasted studies successfully.

Article 3: Definitions
In this Protocol the following expressions bear the following meanings:

FUCoT	Fırat University, College of Technology
SHSU	Sam Houston State University
2+2DF	Joint four-year undergraduate degree program leading to a Bachelor of Science degree in Digital Forensics Engineering
2+2SE	Joint four-year undergraduate degree program leading to a Bachelor of Science degree in Software Engineering
YOK	Turkish Higher Education Council
OSYS	Student Selection and Placement System.
YGS+LYS	Student Selection and Placement Centre administered by OSYS for Turkish citizens
YOS	Foreign Students Examination administered by OSYS for students who are not Turkish citizens.

Article 4: Objective
The objective of this agreement is the development of joint activities between FUCoT and SHSU in the area of Computer Science in general and in Software Engineering and Digital Forensics Engineering in particular by means of potential visits or academic exchanges of students and faculty and the development of a joint 2+2 undergraduate degree programmes leading to a Bachelor of Science in Software Engineering or Digital Forensics Engineering jointly awarded by Firat University and SHSU. This agreement includes cooperative activities in the areas of:

- Teaching
- Research
- Information exchange

Article 5: Obligation of Parties
5.1. SHSU is committed to:

- Support the international collaborative agreement with FUCoT
- Appoint a representative officer who, jointly with the representative officer of FUCoT shall be responsible for the development, implementation, assessment, and compliance of the commitment of both institutions.
- Provide access to research, teaching and social/life campus resources for students and faculty engaged in collaborative activities under the terms of this agreement.
- Provide access to research and teaching distance education resources for students and faculty engaged in collaborative activities under the terms of this agreement.
- Provide necessary technical and professional personnel for the implementation of specific agreements

5.2. FUCoT is committed to:

- Support the international collaborative agreement with SHSU
- Appoint a representative officer who, jointly with the representative officer of SHSU shall be responsible for the development, implementation, assessment, and compliance of the commitment of both institutions.
- Provide access to research, teaching and social/life campus resources for students and faculty engaged in collaborative activities under the terms of this agreement.
- Provide access to research and teaching distance education resources for students and faculty engaged in collaborative activities under the terms of this agreement.
- Provide necessary technical and professional personnel for the implementation of specific agreements

Article 6: Validity
The duration of this agreement is five years (05) to start the fall semester one year following of its signature. This agreement may be renewed for equal periods with the mutual consent of its participants.

Article 7: Funding
For the achievement of the objectives of this standard Agreement the parties are committed to make the necessary efforts to obtain funding and funding relief for continuously developing research, degree programs and academic activities. Such funding efforts include but are not limited to:

- The acquisition and distribution of residence waivers for international students studying in the partner institutions
- Scholarships
- External scholarship funding
- Part time student employment
- Tuition waivers

Article 8: Modifications
The parties may agree to introduce mutually acceptable modifications and/or additional statements to this agreement through addenda as a result of periodic assessments carried out by the representative officers of both institutions during the validity of this agreement.

Article 9: Termination
This agreement may be terminated:

1. By mutual consent
2. By legal mandate
3. By failure to comply with any of the commitments made by either party
4. By reasons beyond their will to comply with their commitment, by either party, with thirty (30) days prior written communication.

Article 10: Specific Agreements
On the basis stated in this Standard Agreement both parties are authorized to sign specific agreements, addenda and other documents necessary to carry out the objectives expressed in this agreement.

Article 11: Intellectual Property
Any scientific, intellectual, or creative work recognized as intellectual property shall be subject to legal provisions in force and to the specific copyright instruments subscribed by both parties. Intellectual property recognition shall be given to the accredited individuals. The ethical rights of copyright shall belong to the author(s) in accordance with existing national and supranational provisions in force, related to the subject.

Article 12: Resolution of Dispute
Any matter not specifically provided for in this agreement and/or any discrepancy in its application and/or interpretation will seek to be resolved by direct understanding between the parties based on good faith and common intention ensuring the maximum collaboration for the settlement of disputes. Otherwise both parties shall designate an arbitral tribunal in Elazig to be subject of arbitration and solution of the matter in dispute.

SECTION II
2+2 UNDERGRADUATE DEGREE PROGRAM IN SOFTWARE ENGINEERING
2+2 UNDERGRADUATE DEGREE PROGRAM IN DIGITAL FORENSICS ENGINEERING

Article 13: Description of the Programmes
The **Bachelor of Science degree program in Digital Forensics Engineering** shall be a four-year undergraduate program compatible with the duration of similar degree programs in Turkey and in the United States.

The program shall include the following components:

- General education components that meet the general education requirements for FUCoT and for SHSU
- Sufficient mathematics to meet the academic needs of students engaged in advanced classes
- Sufficient natural science to foster the internalization of scientific rigor in the development of new knowledge
- A core of computer science knowledge areas sufficient for professional activity
- Specialized courses in Digital Forensics Engineering to meet the professional needs of emerging DF professionals.

The Bachelor of Science degree program in Digital Forensics Engineering shall be designed to conform to the general academic and accreditation standards of both FUCoT and SHSU and, in addition, shall conform to ABET/CAC/MÜDEK accreditation standards as applicable.

The **Bachelor of Science degree program in Software Engineering** shall be a four-year undergraduate program compatible with the duration of similar degree programs in Turkey and in the United States.

The program shall include the following components:

- General education components that meet the general education requirements for FUCoT and for SHSU
- Sufficient mathematics to meet the academic needs of students engaged in advanced classes
- Sufficient natural science to foster the internalization of scientific rigor in the development of new knowledge
- A core of computer science knowledge areas sufficient for professional activity
- Specialized courses in Software Engineering to meet the needs of emerging Software Engineering professionals.

The Bachelor of Science degree program in Software Engineering shall be designed to conform to the general academic and accreditation standards of both FUCoT and SHSU and, in addition, shall conform to ABET/CAC/MÜDEK accreditation standards as applicable.

Article 14: Division of responsibilities
FUCoT is committed to:

- Providing general education courses appropriate to the needs of Turkish students.
- Providing mathematics and science support courses
- Providing core computer science knowledge areas.

SHSU is committed to:

- Providing general education courses
- Providing mathematics and science support courses
- Providing core computer science knowledge areas.
- Providing Digital Forensics Engineering coursework
- Providing advanced Software Engineering coursework.

Section III

STUDENT ADMISSION

Article 15: Determining the Quota
The quota for students who are Turkish citizens and who are not Turkish citizens will be determined by FUCoT and declared to YOK and SHSU

Article 16: Admission of Students who are Turkish citizens
The placement and admission of the Turkish citizens' students to the 2+2DF program will be made in accordance with the results of YGS+LYS administered by OSYS in Turkey and with the regulations and requirements to which FUCoT is subject.

FUCoT will follow up the procedures that are required by YOK for placing the programme in YGS+LYS guidebook published by OSYS.

Article 17: Admission of Students who are not Turkish
The examination and diplomas that can be acceptable in admission of students who are not Turkish citizens to SHSU are indicated below. The approval of Turkish Higher Educational Council is also needed regarding the minimum levels of these examinations and diplomas.

Name of the Examination/Diploma Level	Score*
YOS (Basic Learning Skills Test in Foreign Student Examination administered by OSYS in the last two years)	Minimum 40 points
SAT	At least 1000 points in total or
ACT	At least 21 points or
GCE A level Certificate	At least 2 courses
ABITUR	At least 4 points or
Mature Certificate	-
French Baccalaureate	The high school graduation grade should be at least 12

*Rules are determined by Turkish Higher Education Council (YOK) for student transfers from abroad

Article 18: Student Transfer
Students will transfer at the end of a successful completion of year two from FUCoT to SHSU. The minimum number for progression to the 2nd year is 20. If the number of the student to be transferred is fewer than 20, both institutions will try to come to an appropriate resolution that will be for the benefit of the students.

It is possible for a student to transfer from SHSU to other equivalent programmes in Turkey provided that his or her YGS+LYS score is not lower than the base score of the programme that he or she would like to transfer to in that year and that he or she meets the other requirements envisaged in the regulations.

It may be possible for a student to transfer from the SHSU programme that he or she is registered in to another one at FUCoT. Terms and conditions for transfer are determined by FUCoT. It may be possible for a student to undertake the third and fourth year of study at a different US institution. This is only possible with the written approval of both SHSU and the transferring US institution. This transfer is possible only if the university or college approves it and if it meets the requirements under regulations on transfers within undergraduate programmes in the United States or by specific articulation agreements between SHSU and the transferring US institution.

Section III

EDUCATION

Article 19: Medium of Instruction and Foreign Language Requirement
The medium of instruction of SHSU is English. In order for the students to start taking courses in the third and fourth years of the 2+2DF or 2+2SE programmes, they should demonstrate their English proficiency. IELTS, TOEFL and FUCoT English Proficiency examinations are required for English proficiency. Examinations other than these are not valid for English Proficiency Exam.

Score of 5.5 or equivalent for ILTS and FUCoT English Proficiency examination scores are needed to start education in DDAP associate programme courses.

Students who have registered in the 2+2DF 2DF or 2+2SE programmes and obtained satisfactory score in the examinations stated above and who want to be exempt from English preparatory class must submit their certificates valid for the courses beginning in the academic year in which they plan to start the third year of the 2+2DF 2DF or 2+2SE programmes to FUCoT Registrar's Office and FUCoT Office of International Affairs.

Students unable to obtain a satisfactory score in English Proficiency Examinations are required to register in English preparatory class at FUCoT and are placed in a class appropriate for their levels. Students in preparatory class have compulsory attendance in accordance with FUCoT regulations. Students are given a maximum 2 years for English preparatory education. Students who cannot be successful in the maximum period allowed by regulations may be placed by OSYS according to their YGS+LYS scores in programmes in Turkey with Turkish as a medium of instruction.

Article 20: Curriculum
The curriculum for the 2+2DF and 2+2SE programmes is specified in Appendix 1 (FUCoT) and Appendices 2 and 3 (SHSU).

Article 21: Academic Regulations

A student whose registration is cancelled in FUCoT or SHSU as a result of being academically unsuccessful, or due to any other reason, will also be expelled from the 2+2DF 2DF or 2+2SE programmes and institutions/ establishments in question.

At the end of each semester both institutions will provide documentation that indicates the academic and administrative conditions of the students. FUCoT and SHSU will maintain open and regular communication with each other through the representative officers concerning the student performance.

Students who fulfil the requirements of both institutions and earn the right to graduate are awarded separate Bachelor of Science diplomas by both FUCoT and SHSU for the programme in question. The expressions in Appendix 3/A and Appendix 3/B will be inscribed on the diplomas conferred by two institutions.

Award of the diplomas are subject to the students meeting the academic requirements of both institutions.

Students enrolled in the 2+2DF 2DF or 2+2SE programmes shall conform to the academic regulations of FUCoT during the first two years of the program and the academic regulations of SHSU in the third and fourth years. Resolution of discrepancies in academic regulations shall be through the processes identified in article 12.

SECTION IV

OTHER PROVISIONS
FUCOT

Tuition Fees

Article 22
Students who are registered in the the 2+2DF 2DF or 2+2SE programmes pay the tuition and fees determined by the Board of Trustees of FUCoT during their studies at the FUCoT. Students who are registered in the 2+2DF 2DF or 2+2SE programmes pay the tuition and fees determined by the Texas State University System during their studies at SHSU. The tuition fee for English preparatory class is determined by FUCoT. The fees are submitted to YOK by FUCoT in order to be placed in YGS+LYS guidebook. The cost of living of the students at SHSU is not included in the tuition fee.

Scholarships

Article 23
SHSU, in accordance with its policies and procedures, may allocate a quota for students on scholarships in the 2+2DF 2DF or 2+2SE programmes during their residency at SHSU and also award full or partial scholarships to students based on their success. The conditions for awarding and continuation of these scholarships are determined by SHSU.

Exceptional Leave of Absence

Article 24
Due to imperative reasons and by documenting it, a student may be given a leave for one semester or one academic year with the mutual agreement of both institutions. The duration of the leave is not counted towards the maximum education period. The total duration of leave used during education period cannot exceed the half of normal education period.

Discipline Provisions

Article 25
Students are subject to the discipline regulations of the institution that they are enrolled in.

Visa Procedures

Article 26
The programme coordinators of both institutions will provide advice and support for students in visa applications.

The financial assurance documents that the students need to present in order to get a visa are gathered by FUCoT and submitted to SHSU. SHSU in return sends a sponsorship letter to the Turkish Institution for each student. Regulations for SHSU student admission are determined by Sam Houston State University.

Renewal, Amendments and Termination of the Protocol

Article 27
After this Protocol is approved by the authorised institutions, it will be valid for a period of 5 years as of the final date of signing. The protocol may be renewed if necessary. This partnership may be

terminated provided that it is declared one year before the termination and that after all the students enrolled in the programme complete their course requirements and get their dual diploma.

On behalf of
SAM HOUSTON STATE UNIVERSITY

Signature

Name : Dr. Dana Gibson

Title : President

Date :

On behalf of
FIRAT UNIVERSITY

Signature

Name : Prof. Dr. A. Feyzi Bingöl

Title : Rector

Date :

APPENDICES:

Appendix 1	The curriculum for Bachelor of Science Degree in Digital Forensics Engineering and Bachelor of Science Degree in Software Engineering- first two years (FUCoT)
Appendix 2	The curriculum for Bachelor of Science Degree in Digital Forensics Engineering- final two years (SHSU)
Appendix 3	The curriculum for Bachelor of Science Degree in Software Engineering- final two years (SHSU)
Appendix 4	FUCoT diploma samples
Appendix 5	SHSU diploma samples

Firat University College of Technology Diploma Sample

Who has satisfactorily pursued the Studies and passed the Examinations required by the end of the program conducted with Fırat University therefore has been awarded the

Bachelor of Science degree

in

SOFTWARE ENGINEERING

.....

at the Firat University College of Technology

With all the Rights and Privileges

Thereunto appertaining.

18 June 2011

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Director

DIGITAL FORENSICS ENGINEERING

COURSE SCHEDULE

FIRST YEAR (FUCoT)

First Semester

Code	Course Name	T	P	C	AKTS
TRD109	Turkish Language I	2	0	2	2
YDI107	English I	2	0	2	3
FIZ111	Physics I	2	2	3	4
MAT161	Mathematics I	4	0	4	5
YMT111	Algorithm and Programming I	3	2	4	8
YMT113	Introduction to Computer Science	3	2	4	8
	Total Credit	**16**	**6**	**19**	**30**

Second Semester

Code	Course Name	T	P	C	AKTS
TRD110	Turkish Language II	2	0	2	2
YDI108	English II	2	0	2	3
FIZ112	Physics II	2	2	3	4
MAT162	Mathematics II	4	0	4	5
YMT112	Algorithm and Programming II	3	2	4	8
YMT114	Principles of Software Engineering	3	2	4	8
	Total Credit	**16**	**6**	**19**	**30**

SECOND YEAR (FUCoT)

Third Semester

Code	Course Name	T	P	C	AKTS
AIT209	Ataturk's Principles and the Historical Revolution I	2	0	2	2
YMT211	Discrete Structures I	2	2	3	6
YMT213	Vocational English I	2	0	2	3
YMT215	Logic Circuits	3	2	4	6
YMT217	Programming Languages	3	2	4	7
YMT219	Data Structures	3	0	3	6
	Total Credit	**15**	**6**	**18**	**30**

Fourth Semester

Code	Course Name	T	P	C	AKTS
AIT210	Ataturk's Principles and the Historical Revolution II	2	0	2	2
YMT212	Discrete Structures II	2	2	3	6
YMT214	Vocational English II	2	0	2	3
YMT216	Microprocessors and Programming	3	2	4	6
YMT218	Statistics and Probability	3	2	4	7
YMT220	Economy	2	0	2	6
	Total Credit	**14**	**6**	**17**	**30**

THIRD YEAR (SHSU)

Fifth Semester

Code	Course Name	T	P	C	AKTS
DFSC 1317	Introduction to Digital Forensics			3	
COSC 2327	SPECIAL TOPICS PROGRAMMING "C"			3	
COSC 3318	Database Management Systems			3	
COSC 2327	Networks I			3	
	Total Credit			**12**	

Sixth Semester

Code	Course Name	T	P	C	AKTS
DFSC 2320	Hardware Forensics			3	
DFSC2317	Network Security			3	
COSC 4318	Advanced Language Concepts			3	
COSC3312	Numerical Methods			3	
DFSC 4340	Malware			3	
	Total Credit			**15**	

FOURTH YEAR (SHSU)

Seventh Semester

Code	Course Name	T	P	C	AKTS
COSC 4319	Software Engineering			3	
DFSC 3320	Digital Forensics Tools			3	
DFSC 3317	Cryptography			3	
DFSC 4340	Cyber Warfare			3	
POL %xxx	International Affairs			3	
	Total Credit			**15**	

Eighth semester

Code	Course Name	T	P	C	AKTS
DFSC 4317	Information Security			3	
DFSC 5318	Cyber Law			3	
DFSC 4349	Professionalism and Ethics			3	
DFSC 4340	Capstone Project			6	
	Total Credit			**15**	

Total Credit	:
Theoretical Lecture Hours	:
Practice Lecture Hours	:
Total Lecture Hours	:
Total AKTS	:

SOFTWARE ENGINEERING

COURSE SCHEDULE

FIRST YEAR (FUCoT)

First Semester

Code	Course Name	T	P	C	AKTS
TRD109	Turkish Language I	2	0	2	2
YDI107	English I	2	0	2	3
FIZ111	Physics I	2	2	3	4
MAT161	Mathematics I	4	0	4	5
YMT111	Algorithm and Programming I	3	2	4	8
YMT113	Introduction to Computer Science	3	2	4	8
	Total Credit	**16**	**6**	**19**	**30**

Second Semester

Code	Course Name	T	P	C	AKTS
TRD110	Turkish Language II	2	0	2	2
YDI108	English II	2	0	2	3
FIZ112	Physics II	2	2	3	4
MAT162	Mathematics II	4	0	4	5
YMT112	Algorithm and Programming II	3	2	4	8
YMT114	Principles of Software Engineering	3	2	4	8
	Total Credit	**16**	**6**	**19**	**30**

SECOND YEAR (FUCoT)

Third Semester

Code	Course Name	T	P	C	AKTS
AIT209	Ataturk's Principles and the Historical Revolution I	2	0	2	2
YMT211	Discrete Structures I	2	2	3	6
YMT213	Vocational English I	2	0	2	3
YMT215	Logic Circuits	3	2	4	6
YMT217	Programming Languages	3	2	4	7
YMT219	Data Structures	3	0	3	6
	Total Credit	**15**	**6**	**18**	**30**

Fourth Semester

Code	Course Name	T	P	C	AKTS
AIT210	Ataturk's Principles and the Historical Revolution II	2	0	2	2
YMT212	Discrete Structures II	2	2	3	6
YMT214	Vocational English II	2	0	2	3
YMT216	Microprocessors and Programming	3	2	4	6
YMT218	Statistics and Probability	3	2	4	7
YMT220	Economy	2	0	2	6
	Total Credit	**14**	**6**	**17**	**30**

THIRD YEAR (SHSU)

Fifth Semester

Code	Course Name	T	P	C	AKTS
COSC 3327	Computer Architecture			3	
COSC 3318	Database Management Systems			3	
COSC 3331	Human Computer Interaction			3	
COSC 2327	Networks I			3	
	Total Credit			**12**	

Sixth Semester

Code	Course Name	T	P	C	AKTS
COSC 3312	Numerical Methods			3	
COSC 4327	Operating Systems			3	
COSC 4330	Computer Graphics			3	
COSC 4340	Data Mining			3	
	Total Credit			**12**	

FOURTH YEAR (SHSU)

Seventh Semester

Code	Course Name	T	P	C	AKTS
COSC 4320	Simulation			3	
COSC xxxx	COSC Elective I			3	
COSC 4326	Network Theory			3	
COSC 4319	Software Engineering			3	
POL %xxx	International Affairs			3	
	Total Credit			**15**	

Eighth semester

Code	Course Name	T	P	C	AKTS
COSC 4318	Advanced Language Concepts			3	
COSC xxxx	COSC Elective II			3	
DFSC 4349	Professionalism and Ethics			3	
COSC 4340	Capstone Project			6	
	Total Credit			**15**	

SOFTWARE ENGINEERING ELECTIVES											
COSC 3318	Information Systems Design And Mgt.			3		CSTE 3330	Web Technologies			3	
COSC 3321	Switching Theory			3		DFSC 3317	Cryptography			3	
COSC 4316	Language Translators			3		COSC 4340	Digital Signal Processing			3	

Course Contents

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
TRD109	Turkish Language I	2	0	2	2
Course Contents					
Definition of the language, The place and importance of language as a social institution in life, Place of Turkish language among world languages, The development of the Turkish language and the historical periods, current situation of Turkish language and spread areas, Vowels in Turkish and classification of Turkish audio features and sound knowledge about the rules, knowledge of syllables, spelling rules and practice, punctuation marks…					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
YDI107	English I	2	0	2	3
Course Contents					
Simple Present Tense, Articles, Numbers, Present Progressive Tense, Possessive Adjectives, can, Singular and Plurals, How Many, How Much, Some, Any, A Little, A Few, Some Prepositions.					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
FIZ111	Physics I	2	2	3	4
Course Contents					
Vectors, balance, moment of a force, linear motion, Newton's second law, plane motion, work and energy impulse and momentum, rotational motion, elasticity, harmonic motion.					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
MAT161	Mathematics I	4	0	4	5
Course Contents					
Real and complex numbers, sentences, permutation, calculations of inversion and combination, probability, group, ring, vector spaces, length, angle and projection calculations, matrices and determinants, linear equation systems.					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
YMT111	Algorithm and Programming I	3	2	4	8
Course Contents					
Problem solving. Input-Output process. Algorithm design. Algorithms certainty, finitude, efficiency, input-output. Constants, variables and expressions. Arithmetic, relational and logical processors. Input-output statements. Condition and Repetition. Vector and matrix representations. Character information operations. Subroutine and function routines. Recursion. Structural applications of a programming language.					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
YMT113	Introduction to Computer Science	3	2	3	8
Course Contents					
Detailed examination of the coding phase of the software development life cycle. The design of program logic. Programming languages. Introduction to Object-oriented methods. Database management systems. Computer networks and communication. Internet and World Wide Web. Programming technologies for the Web. Computers and security. Computers and social issues.					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
TDE	Turkish Language II	2	0	2	2
Course Contents					
Turkish affixes and their applications, general information about the composition, essay writing and implementation of the plan, adjectives and verbs, composition, expression and its application, use of adverbs in Turkish.					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
YDI108	English II	2	0	2	3
Course Contents					
Simple Past Tense, Auxiliary Verbs (Be, Do), Must, Have to, Has to, Going to From, Adverbs of Time, Regular and Irregular Verbs, Possessive Pronouns					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
FIZ112	Physics II	2	2	3	4

Course Contents
Electricity, electrostatics, Coulomb's law, electric field, potential, capacitance, properties of dielectric, electrokinetic, current, and resistance to direct current circuits, alternating currents

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
MAT162	Mathematics II	4	0	4	5
Course Contents					
Definition and types of functions, the absolute value functions, the full value functions, trigonometric functions, signal functions and their graphs, exponential and logarithmic functions and applications, sequences, continuity and limit, derivative, differential, and about the account applications, integration.					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
YMT112	Algorithm and Programming II	3	2	4	8
Course Contents					
Introduction to Object Oriented Programming and proper presentation of a programming environment. The basic language concepts (expressions, data types, variables, control structures, arrays, ...). Divide and Resolve Method. Modular software development (methods and classes). Class Variables and Local Variables. Form Elements. Event Driven Programming. Dynamic Arrays. Linked Lists. Search and Ranking Algorithms. Files. Selecting the appropriate structures algorithms. Development of effective algorithms.					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
YMT114	Principles of Software Engineering	3	2	4	8
Course Contents					
The scope of software engineering. Software development life cycle models. Software process. Software teams. Software tools. Software testing. Modules and objects. Re-usability and portability. Planning, cost and time estimation. Requirements. Classical analysis. Object-oriented analysis and design. Design types and object-sided design. Implementation and Integration. Maintenance of software product after delivery.					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
AIT209	Ataturk's Principles and the Historical Revolution I	2	0	2	2
Course Contents					
The course coves the collapse of the Ottoman Empire and the causes of Turkish revolution, the disintegration of the Ottoman Empire, Armistice cease-fire agreement and subsequent events, situation of the country in occupation and response of Mustafa Kemal, M. Kemal to Samsun, and the opening of the last Ottoman Deputies Assembly, the opening of Parliament and get into the hands of the management of the liberation war.					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
YMT211	Discrete Structures I	2	2	3	6
Course Contents					
Fundamentals of discrete mathematics. Functions. Relations. Sets and simple proof techniques. Boolean algebra. Propositional logic. Digital logic. Elementary number theory. Counting the foundations of the concept.					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
YMT213	Vocational English I	2	0	2	3
Course Contents					
English equivalents of the main parts of the computer, the computer equivalents of English abbreviations and definitions used in the field, operating systems' English descriptions, classifications and definitions of microprocessors, network structures, cause-effect structures, adjective and noun clauses, conjunctions, passive sentences, causative sentences when used in academic publications, sentence structures, academic terms. Articles translate translation of parts of professional books, translation of user manuals.					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
YMT215	Logic Circuits I	3	2	4	6
Course Contents					
Digital Systems, Combinational Logic, Sequential Logic, register, and counters					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
YMT217	Programming Languages	3	2	4	7
Course Contents					

Fundamental concepts in programming languages and basic programming paradigms, Pascal, C, C + + and Java programming languages and its variety of structures.

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
YMT219	Data Structures	3	0	3	6
Course Contents					
Introduction to Data Structures. Introduction to the Java programming language. Recursion. Stacks, Queues and Lists. Trees. Binary Trees and Balanced Trees. Operations on Trees. Comparison of Algorithms. Time and Location complexity. Sorting and Searching. Graph.					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
AIT210	Ataturk's Principles and the Historical Revolution II	2	0	2	2
Course Contents					
Abolition of the Caliphate, Progressive Republican Party and Takrir-i-Sukun period, Education Revolution, the Cultural Revolution, the letter revolution, revolution of Turkish history, Turkish language revolution, economic congress in Izmir, pass a multi-party life, women's rights revolution , hat, costume and dress reform , foreign policy of the Republic of Turkey, Ataturk's principles, political events, government and parliament relations between the Istanbul government, military developments, the Treaty of Kars, Ankara Agreement, Offensive, Mudanya truce, the removal of the Ottoman reign, the Lausanne peace treaty.					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
YMT212	Discrete Structures II	2	2	3	6
Course Contents					
Proposition Logic and Set Theory. Functions of Mathematical Methods and Algorithms of proof. Number Theory and Sequences. Induction and Recursion. Counting. Discrete Probability. Relations. Boolean Algebra. Graph Theory. Trees.					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
YMT214	Vocational English II	2	0	2	3
Course Contents					
Translation of computer technical articles, translation techniques, technical rules of writing the article, writing English article.					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
YMT216	Microprocessors and Programming	3	2	4	6
Course Contents					
Microcomputers, microcomputer processors, memory and input / output units, microprocessor programming.					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
YMT218	Statistics and Probability	3	2	4	7
Course Contents					
Variable definition, data types, numeric and graphic presentation techniques, population and sample, point and interval forecasting, hypothesis testing.					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
IKT	Economy	2	0	2	6
Course Contents					
What is science? Economy and its problems, purpose of the production unit, production factors 'period' concept, the production function and the co-product curves, returns to scale, the law of diminishing productivity, decision-making related to long-term, short term and long-term costs, production unit, revenue, profit maximization and production unit, the principle of balance, presentation, production unit, the curve shift, presentation flexibility, and purpose of the consumer unit, consumer unit balance, the concept of money, the co-benefit curves, budget line, the consumer behavior explained with the help of co-benefit curves and budget line, the consumer unit, the request function of the curve of the total request, the request elasticity, price formation and markets, perfect competitive markets, monopoly markets, imperfectly competitive markets, markets of production factors.					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
CTE 3330	Web Technologies	3		3	
Course Contents					
This course explores the concepts and techniques associated with the development of modern dynamic Web sites. Topics covered include web design fundamentals, modern web development tools, style sheets, markup languages, accessibility,					

session management, interactive communication and security. The course also examines a number of Web 2.0 technologies that support blog, wiki and social networking applications.

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
COSC 2347	Special Topics: Programming	3		3	
Course Contents					
In-depth study of a programming language used to implement information systems. Real time components, visual techniques, and artificial intelligence will be utilized as appropriate. This course may be repeated for credit with the approval of the undergraduate advisor. A different language must be covered to receive approval for repeat credit					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
COSC 3327	Computer Architecture	3		3	
Course Contents					
computer systems organization and systems programming. Uni- and multi-processor, SMP, parallel and distributed systems are studied.					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
COSC 3318	Database Management Systems	3		3	
Course Contents					
This course emphasizes the design of information systems using database software and query language/programming interfaces. Data warehouse concepts are introduced. Legacy systems, LAN and distributed systems based systems are used to give the student hands-on experience in systems development.					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
COSC 3337	Information Systems Design and Management	3		3	
Course Contents					
The design and implementation of large-scale file and persistent object-based information systems. Client/server systems are covered.					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
COSC 3331	Human Computer Interaction	3		3	
Course Contents					
This course presents a comprehensive introduction to the principles and techniques of human-computer interaction. The course examines the event-driven model through the development of applications utilizing graphical design environments and the use of rapid application prototyping to explore a variety of techniques for HCI, particularly in relation to mobile and other non-traditional devices.					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
COSC 3312	Numerical Methods	3		3	
Course Contents					
This course develops the concepts underlying the use of the computer for interpolation, approximations, solutions of equations and the solution of both linear and nonlinear systems equations. Mathematical software and/or user written programs are utilized.					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
COSC 3321	Switching Theory	3		3	
Course Contents					
Boolean Algebra and graph theory with emphasis on their applications in the design of digital computer software and hardware. Logic systems are designed and analyzed.					

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
COSC 4316	Language Translators	3		3	

Course Contents
the design and implementation of assemblers, interpreters and compilers. Topics include symbol tables, lexical scanning, syntactic analysis, object code generation and storage allocation.

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
COSC 4327	Computer Operating Systems	3		3	

Course Contents
This course is concerned with software organization of computer systems. It is intended to bring together the concepts and techniques of programming languages, data structures and computer organization by considering their role in the design of general computer systems. The problems which arise in multi-accessing, multiprogramming, and multiprocessing are emphasized.

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
COSC 4319	Software Engineering	3		3	

Course Contents
This course is an introduction to formal methods of specifying, designing, implementing and testing software for large programming projects. Methods of estimating and predicting reliability are discussed.

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
COSC 4330	Computer Graphics	3		3	

Course Contents
This course introduces graphical API's used in developing graphical user interfaces and multimedia applications. Topics covered are selected from the PHIGS, Windows, Presentation Manager, X-Windows, digital video and other appropriate technologies

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
COSC 4326	Network Theory	3		3	

Course Contents
This course covers the architecture and protocols of local and wide are networks. Peer to peer and client/server configurations based upon Unix and Windows 2003/8 servers and clients are discussed. Assignments involve the setup configuration and management of Unix and Windows NT LAN servers and the implementation of interprocess communication mechanisms.

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
COSC 4320	Simulation	3		3	

Course Contents
This is an introduction to simulation methodology applicable to all disciplines. It covers the design of simulation experiments, validation of models and their computer implementation. The use of a generalized simulation language is introduced and applied in class projects

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
COSC 4318	Advanced Programming concepts	3		3	

Course Contents
This course emphasizes programming languages which support the Object-Oriented Programming (OOP) paradigm. Programming assignments are used to illustrate the features and weaknesses of the language and to develop the student's proficiency in the use of OOP technology.

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
DFSC 1317	Introduction to Digital Forensics and Information Assurance	3		3	

Course Contents
This course introduces students to the fundamentals of digital forensics technology. Emphasis is placed on identifying threats to, and vulnerabilities of, computer systems and how to minimize them. Students will learn how hackers identify victims, how attacks are executed, and various methods used to access to computer systems

Code	NAME	THEORETICAL	PRACTICE	CREDİT	AKTS CREDIT
DFSC 2320	Hardware Forensics	3		3	

Course Contents					
Techniques in the duplication, recovery and restoration of digital evidence. Includes hard disks, floppy drives, CD formats, DVD formats, zip drives, mobile phones, PDA's smart cards, memory technologies, and other devices capable of storing digital information.					
Code	**NAME**	**THEORETICAL**	**PRACTICE**	**CREDİT**	**AKTS CREDIT**
DFSC 2317	Network Security	3		3	
Course Contents					
The rationale and necessity for securing computer systems and data networks, as well as methodologies for the design of security systems, establishing security protocols and the identification of best practices in the administration, testing and response protocols for secure communications systems.					
Code	**NAME**	**THEORETICAL**	**PRACTICE**	**CREDİT**	**AKTS CREDIT**
DFSC 3320	Digital Forensics Tools	3		3	
Course Contents					
This course explores tools for the recovery of information on protected or damaged hardware for the purpose of providing evidence of misuse or abuse of systems. Topics also include the chain of evidence, protocols for data recovery, cryptographic analysis, password recovery, the bypassing of specific target operating systems, and obtaining data from digital devices that have been damaged or destroyed.					
Code	**NAME**	**THEORETICAL**	**PRACTICE**	**CREDİT**	**AKTS CREDIT**
DFSC 3317	Cryptography	3		3	
Course Contents					
This course will describe the basic principles of cryptography and how it is used in modern computer and communication systems. It will cover single ciphers, modern ciphers, public-key cryptography, key management, cryptanalysis and steganography. Students will learn how cryptography is used for message secrecy, integrity, authentication and digital signatures. Application areas to be discussed include e-mail, files, network communication, and electronic payments					
Code	**NAME**	**THEORETICAL**	**PRACTICE**	**CREDİT**	**AKTS CREDIT**
DFSC 4317	Information Security	3		3	
Course Contents					
This course provides an introduction to basic security needs. The course will include, but not be limited to individuals vs. government privacy issues, federal encryption standards, the different layers of security currently available, the practical application of user level and system level cryptography, and strategies for evaluation and selection of security methods.					
Code	**NAME**	**THEORETICAL**	**PRACTICE**	**CREDİT**	**AKTS CREDIT**
DFSC 4349	Professional Ethics	3		3	
Course Contents					
This course examines the nature, need and value of well-formed ethical constructs within the digital forensics profession. Included in this course is a discussion, through case studies, of the nature of professionalism, personal and professional codes of ethics and conduct, and the professional handling of ethical and moral conflict. The course also explores the role of the professional in public policy and the awareness of consequences of ethical dissent and whistle blowing.					
Code	**NAME**	**THEORETICAL**	**PRACTICE**	**CREDİT**	**AKTS CREDIT**
COSC 4340	Special Topics	3		3	
Course Contents					
Topics of general interest are offered on a timely basis. Previous topics include Cognitive Computing, Embedded Linux Systems, Visual Graphics/Component Systems, Digital Signal Processing, Cyber warfare, Malware, and Data mining					