

## Software Engineering Education Program

### First Year

1 <sup>st</sup> Semester						
Course Code	Course Name	T	U	L	K	AKTS
	Physics-I	2	1	1	3	5
	Calculus-I	2	2	0	3	5
	Ataturk's Principles and History of Turkish Revolution I	2	0	0	2	2
	Turkish Grammar I	2	0	0	2	2
	Career Planning	2	0	0	2	4
	Introduction to Software Engineering	3	0	0	3	6
	Introduction to Algorithms and Programming	2	1	0	3	6
<b>Sum</b>						<b>30</b>

2 <sup>nd</sup> Semester						
Course Code	Course Name	T	U	L	K	AKTS
	Physics-II	2	1	1	3	5
	Calculus-II	2	2	0	3	5
	Ataturk's Principles and History of Turkish Revolution II	2	0	0	2	2
	Introduction to Object Oriented Programming	2	1	0	3	6
	Turkish Grammar II	2	0	0	2	2
	Introduction to AI	2	0	0	3	6
	Law for Software Engineering	2	0	0	2	4
<b>Sum</b>						<b>30</b>

## Second Year

3 <sup>rd</sup> Semester						
Course Code	Course Name	T	U	L	K	AKTS
	Data Structures	2	2	0	3	6
	Discrete Mathematics	2	2	0	3	5
	Probability and Statistics	2	2	0	3	5
	Occupational Health And Safety-I	2	0	0	2	2
	Academic English	2	0	0	2	2
	Software Requirements Engineering	3	0	0	3	5
	Introduction to Database and Database Management Systems	3	0	0	3	5
<b>Sum</b>						<b>30</b>

4 <sup>th</sup> Semester						
Course Code	Course Name	T	U	L	K	AKTS
<b>Must Courses</b>						
	Differential Equations	3	0	0	3	5
	Human Computer Interaction	2	0	0	2	3
	Software Quality Assurance	3	0	0	3	5
	Occupational Health And Safety-II	2	0	0	2	2
	Elective				9	15
<b>Sum</b>						<b>30</b>
<b>Elective Courses</b>						
	Information Retrieval Systems	3	0	0	3	5
	Computer Networks	3	0	0	3	5
	Data Mining	3	0	0	3	5
	Cross-Platform Mobile Development	3	0	0	3	5

## Third Year

5 <sup>th</sup> Semester						
Course Code	Course Name	T	U	L	K	AKTS
<b>Must Courses</b>						
	Object Oriented Analysis Design	3	0	0	3	6
	Web Programming	3	0	0	3	6
	Elective				9	18
<b>Sum</b>						<b>30</b>
<b>Elective Courses</b>						
	Artificial Intelligence	3	0	0	3	6
	Game Programming / AR-VR Development	3	0	0	3	6
	Natural Language Processing	3	0	0	3	6
	Software Security	3	0	0	3	6
	Introduction to Cryptography	3	0	0	3	6

6 <sup>th</sup> Semester						
Course Code	Course Name	T	U	L	K	AKTS
<b>Must Courses</b>						
	Software Engineering	3	0	0	4	6
	Image Processing	3	0	0	4	6
	Elective				9	18
<b>Sum</b>						<b>30</b>
<b>Elective Courses</b>						
	IoT Software Systems	3	0	0	3	6
	Data Science	3	0	0	3	6
	Penetration Testing and Ethical Hacking	3	0	0	3	6
	Blockchain and Smart Contracts	3	0	0	3	6
	Advanced Game Development	3	0	0	3	6

## Fourth Year

7 <sup>th</sup> Semester						
Course Code	Course Name	T	U	L	K	AKTS
	Project I	0	2	0	1	15
	In-service education I					15
<b>Sum</b>						<b>30</b>

8 <sup>th</sup> Semester						
Course Code	Course Name	T	U	L	K	AKTS
	Project II	0	2	0	1	15
	In-service education II					15
<b>Sum</b>						<b>30</b>

Alternative program for students who will not receive in-service education.

7 <sup>th</sup> Semester						
Course Code	Course Name	T	U	L	K	AKTS
	Project I	0	2	0	1	15
	Algorithm Analysis	3	0	0	3	5
	Big Data	3	0	0	3	5
	New Technology Development, Entrepreneurship and Project Management	3	0	0	3	5
<b>Sum</b>						<b>30</b>

8 <sup>th</sup> Semester						
Course Code	Course Name	T	U	L	K	AKTS
	Project II	0	2	0	1	15
	Geographical Information Systems	3	0	0	3	5
	2D Game Design	3	0	0	3	5
	Cloud Computing	3	0	0	3	5
<b>Sum</b>						<b>30</b>

## Core Course Tracks

	<b>General Knowledge on Software Engineering</b>	<b>AI &amp; Data Science</b>	<b>Cybersecurity</b>	<b>Game &amp; Mobile</b>
<b>1<sup>st</sup> Semester</b>	Introduction to Algorithms and Programming Introduction to Software Engineering	Introduction to Algorithms and Programming		
<b>2<sup>nd</sup> Semester</b>	Introduction to Object Oriented Programming Law for Software Engineering	Introduction to AI		Introduction to Object Oriented Programming
<b>3<sup>rd</sup> Semester</b>	Software Requirements Engineering Introduction to Database and Database Management Systems	Data Structures		
<b>4<sup>th</sup> Semester</b>	Human Computer Interaction Software Quality Assurance	Human Computer Interaction		
<b>5<sup>th</sup> Semester</b>	Object Oriented Analysis Design Web Programming			
<b>6<sup>th</sup> Semester</b>	Software Engineering	Image Processing		Image Processing
<b>7<sup>th</sup> Semester</b>	Algorithm Analysis Project Management	Big Data		
<b>8<sup>th</sup> Semester</b>	Geographical Information Systems Cloud Computing		Cloud Computing	2D Game Design

## Elective Course Tracks

	<b>AI &amp; Data Science</b>	<b>Cybersecurity</b>	<b>Game &amp; Mobile</b>
<b>4<sup>th</sup> Semester</b>	Information Retrieval Systems Data Mining	Computer Networks	Cross-Platform Mobile Development
<b>5<sup>th</sup> Semester</b>	Artificial Intelligence Natural Language Processing	Cryptography Software Security	Game Programming / AR-VR Development
<b>6<sup>th</sup> Semester</b>	Internet of Things Data Science	Penetration Testing and Ethical Hacking Blockchain and Smart Contracts	Advanced Game Development