TUNCELİ UNIVERSITY
TUNCELİ VOCATIONAL SCHOOL
CONSTRUCTION TECHNOLOGY PROGRAM FOUR-SEMESTER CURRICULUM

I. SEMESTER								
Course code	**Optical Code**	**LESSONS**	**Z/M/S**	**Weekly Course Hours**			**Total Credit**	**ECTS**
				Sum	**Theory**	**App.**		
TRD101	1520	Turkish Language I	Z	2	2	0	2	2
AİT101	1510	Ataturk First. and History of Turkish Revolution I	Z	2	2	0	2	2
YDI131	1560	Foreign Language I	Z	2	2	0	2	2
MAT165	1591	Mathematics I	Z	2	2	0	2	2
ENF101	1500	Computer	Z	3	1	2	2	3
TBİ101	1631	Scientific Principles of Technology	Z	2	2	0	2	3
GTI101	1640	General & Technical Communication	Z	2	2	0	2	2
TTI101	1650	Building Statics I	M	3	3	0	3	4
TTI103	1660	Building Technology I	M	2	2	0	2	3
TTI123	1582	Materials Science and Building Material	M	2	2	0	2	4
TTI121	1531	Technical Drawing	M	3	1	2	2	3
	SUM			25	21	4	23	30

II. SEMESTER								
Course code	**Optical Code**	**LESSONS**	**Z/M/S**	**Weekly Course Hours**			**Total Credit**	**ECTS**
				Sum	**Theory**	**App.**		
TRD102	1160	Turkish Language II	Z	2	2	0	2	2
AİT102	1010	Ataturk First. and History of Turkish Revolution II	Z	2	2	0	2	2
YDI132	1091	Foreign Language II	Z	2	2	0	2	2
MAT166	1290	Mathematics II	Z	3	3	0	3	3
TTI102	1030	Building Statics II	M	3	3	0	3	4
TTI104	1040	Building Technology II	M	2	2	0	2	3
TTI106	1051	Concrete Technology	M	3	3	0	3	4
TTI108	1141	Building Architecture and Detail Drawings	M	3	1	2	2	4
TTI110	1100	Strength	M	2	2	0	2	4
TTI112	1001	Computer Aided Drawing	M	3	1	2	2	2
	SUM			25	21	4	23	30

YEAR 2

III. SEMESTER								
Course code	Optical Code	LESSONS	Z/M/S	Weekly Course Hours			Total Credit	ECTS
				Sum	Theory	App.		
TTI201	2501	Computer Aided Design I	M	4	2	2	3	3
TTI203	2571	Soil Mechanics I	M	2	2	0	2	3
TTI205	2502	Quantity Surveying and Exploration Works	M	3	3	0	3	3
TTI207	2560	Reinforced Concrete I	M	3	3	0	3	5
TTI209	2503	Laboratory Techniques	M	3	1	2	2	3
TTI211	2550	Steel Structures I	M	2	2	0	2	3
TTI215	2505	Hydraulics and Hydrology	M	2	2	0	2	3
SUM				19	15	4	17	23
Elective courses (three courses to be selected). He has to take a total of 6 hours of lessons.								
TTI217	2506	Highway Construction I	S	2	2	0	2	3
TTI219	2507	Damage Assessment in Buildings	S	2	2	0	2	2
TTI227		Professional Practice	S	2	2	0	2	2
TTI221		Professional Foreign Language (Eng)	S	2	2	0	2	2
TTI223		Building Installation Information	S	2	2	0	2	2
TTI225		Office and Site Organization	S	2	2	0	2	2
	SUM			25	21	4	23	30

IV. SEMESTER								
Course code	**Optical Code**	**LESSONS**	**Z/M/S**	**Weekly Course Hours**			**Total Credit**	**ECTS**
				Sum	**Theory**	**App.**		
TTI202	2051	Computer Aided Design II	M	4	2	2	3	3
TTİ204	2060	Soil Mechanics II	M	3	3	0	3	3
TTI206	2052	Building Repair and Reinforcement	M	2	2	0	2	3
TTI208	2120	Reinforced Concrete II	M	2	2	0	2	4
TTI210	2053	Topography	M	3	1	2	2	4
TTI212	2054	Prefabricated Buildings	M	2	2	0	2	3
TTI214	2055	Steel Structures II	M	3	3	0	3	4
SUM				19	15	4	17	24
Elective courses (three courses to be selected). He has to take a total of 6 hours of lessons.								
TTİ216	2056	Water Supply and Wastewater	S	2	2	0	2	2
TTI218	2057	Highway Construction II	S	2	2	0	2	2
TTI228		System Analysis and Design	S	2	2	0	2	2
TTI222		Masonry Structures	S	2	2	0	2	2
TTI224		Quality Assurance and Standards	S	2	2	0	2	2
TTI226		Business Management	S	2	2	0	2	2
	SUM			25	21	4	23	30

KISALTMALAR	
Z	: Zorunlu Dersler
M	: Meslek Dersleri
S	: Seçmeli Dersler

TUNCELİ UNIVERSITY
TUNCELİ VOCATIONAL SCHOOL
CONSTRUCTION TECHNOLOGY PROGRAM COURSE DESCRIPTIONS

I. SEMESTER

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Turkish Language-I	2	2	2
Course Outline To be able to comprehend that language is the product of the human mind, to comprehend the structural features and richness of the Turkish language, to comprehend the ways to be successful in written expression, to develop research, reading and information skills.			

COURSE NAME	HOUR	LOAN	ECTS CREDITS
AİT 101 Atatürk's Principles and History of Turkish Revolution I	2	2	2
Course Outline The purpose of reading Atatürk's principles and the History of Turkish Revolution course and the concept of revolution, a collective overview of the reasons that prepared the collapse of the Ottoman Empire and the Turkish Revolution; The disintegration of the Ottoman Empire, the Mudros Armistice Agreement, the situation of the country in the face of invasions and Mustafa Kemal Pasha's departure to Samsun, the first step for the national struggle, organization through congresses, Kuvayi Milliye and Pact-ı Milli, the opening of the Turkish Grand National Assembly, the Turkish Grand National Assembly taking over the administration of the War of Independence, the national struggle until the Sakarya Victory, the Battle of Sakarya and the Great Offensive, from Mudanya to Lausanne, In the field of education and culture, the national struggle, the national struggle in the social and economic field.			

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Foreign Language-I	2	2	2

Course Outline

Tokens; prepositions: place, time, movement; singular and plural nouns, countable and uncountable nouns, tenses, present tense, present tense, past tense constructions, tenses, will, should, should not, must, must not, can, comparative constructions, nouns, personal nouns, possessive nouns, adjectives, positive sentences, negative sentences and interrogative sentences, conjunctions.

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Mathematics I	3	3	3

Course Outline

Numbers, equations and inequalities, functions, trigonometry, complex numbers, logarithms, systems of linear equations and matrices, limits and continuity, derivatives and applications, integrals and applications, differential equations, statistics.

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Computer	2	2	2

Course Outline

Introduction to Computer, Basic Concepts, Hardware and Software, Keyboard Usage, Operating Systems, Windows Operating System, Office Applications, Introduction to the Internet, Using Mail, Using Search Engines, Web Based Learning, Personal Website Preparation, Curriculum Vitae in Word Processing Program, Preparing Introductory Materials

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Scientific Principles of Technology	2	2	3

Course Outline

Physical Quantities, Systems of Units, Static Equilibrium – Basic Concepts, Static Equilibrium – Force, Moment, Equilibrium, Elasticity, Dynamics – Basic Concepts, Dynamics – Motion, Newton's Laws of Motion, Midterm Exams, Fluids – Basic Concepts, Fluids – Principles, Vibrations, Waves, Heat, Thermal Expansion, Electricity

COURSE NAME	HOUR	LOAN	ECTS CREDITS
General & Technical Communication	2	2	2

Course Outline

Definition and Scope of Communication, Purpose and Importance of Communication, Basic Features of Communication, Communication Process, Features of the Message, Features of the Receiver, Verbal Communication, Written Communication, Horizontal Communication, Cross Communication, Communication in Virtual Organizations, Communication by Technological Means, Information and Communication, Written Communication Tools, Technical Communication Tools, Visual and Audio-visual Communication Tools.

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Building Statics I	3	3	4

Course Outline

Definition and Analysis, Loads (Internal and External Loads) Based on Building Statics, Balance Equations, Types of Bearing Definition and Where It Is Used, Loads to Occur in the Support and Behavior of the Support Against These Loads, Beam Definition and Types, Static Calculations of Isostatic Beams, Loads Affecting the Beam, Support Reactions, Internal Force Analysis and Calculation and Drawing of Cross-Sectional Force Diagrams, Frames, Calculation Principles of Support Reactions, Calculation of cross-sectional effects in frames, drawing cross-sectional effect diagrams

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Building Technology I	2	2	3

Course Outline

Building, Definition, Classification, Foundation Ground, Application of Building Forehead to Ground – Application, Excavation Works, Fortification Works, Foundations, Masonry Walls, Brick Walls,

Chimneys, Stairs, Roofs, Insulation Against Water and Moisture, Insulation Against Heat, Insulation Against Sound and Fire

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Materials Science and Building Material	2	2	4

Course Outline Importance of Materials Science, Internal Structure of Materials, Structure of Atom, Interatomic Bond Forces and Distance	Classification of materials, physical properties of materials, mechanical properties of materials, chemical properties of materials, natural stones and their properties, properties of glass and glass materials, plastic materials, metals, wood materials, composite materials, refractory materials, dyestuffs and paints, bituminous materials

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Technical Drawing	3	2	3
Course Outline Basic Principles of Technical Drawing, Scale Drawing, Dimensioning, Geometric Drawings, Projection of Plane, Projection of Geometric Objects, Intersection of Planes, Perspective of Simple Parts, Basic View Drawings, Full Sections of Parts and Scanning			

II SEMESTER COURSES

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Turkish Language-II	2	2	2

Course Outline

To be able to recognize the types of written expression in daily life, to comprehend the importance of punctuation in written expression, to comprehend the importance of correct expression in personal and social communication, to apply research, reading and information skills

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Ataturk's Principles and History of Turkish Revolution-II	2	2	2

Course Outline

The purpose of reading Atatürk's principles and the History of Turkish Revolution course and the concept of revolution, a collective overview of the reasons that prepared the collapse of the Ottoman Empire and the Turkish Revolution; The disintegration of the Ottoman Empire, the Mudros Armistice Agreement, the situation of the country in the face of invasions and Mustafa Kemal Pasha's departure to Samsun, the first step for the national struggle, organization through congresses, Kuvayi Milliye and Pact-ı Milli, the opening of the Turkish Grand National Assembly, the Turkish Grand National Assembly taking over the administration of the War of Independence, the national struggle until the Sakarya Victory, the Battle of Sakarya and the Great Offensive, from Mudanya to Lausanne, In the field of education and culture, the national struggle, the national struggle in the social and economic field.

COURSE NAME	HOUR	LOAN	ECTS CREDITS
English-II	2	2	2

Course Outline

With this course, students will be able to form the basis of English;

I. English grammar, II. listening comprehension, III. To be able to talk to each other,

IV. reading comprehension, V. gain oral expression and writing skills

a. Future Tense "will and be going to": Affirmative, negative and interrogative forms, b. Time adverbs: "next, in two days, today, tomorrow, etc." c. First Conditionals: "If ....., Subject + will"
a. Sentences with "too/enough, so/such", b. Sentences with "after and before", c. Adverbs of manner, place and time. d. Definite and Indefinite Articles: "a, an, the".
a. Past Tense: Affirmative, negative and interrogative forms, b. Regular and Irregular verbs (Past Forms), c. Time adverbs: "ago, last, yesterday, etc."
a. "When sentences" in Past Tense, b. Sentences with "But, and, or", c. Second Conditionals: "If ....., Subject+would".

a. Adjectives with "-ed and -ing" ending, b. Prohibition and Obligation: "should and should not"
a. Past Continuous Tense, "was/were + Ving": Affirmative, negative and interrogative forms, b. Time adverbs: "ago, last, yesterday, etc."
Consolidation and Revision
a. "While Sentences" in past continuous tense, b. Using "still, as well, too, also" in sentences.
a. Present Perfect Tense, "Have/has + V3": Affirmative, negative and interrogative forms, b. Regular and Irregular verbs (Past Participle Forms), c. Time adverbs: "for, since, yet, just, already, never/ever, etc. "
a. Linking words with "although, though, despite (despite of), in spite of", b. Sentences with "As and since"
a. Past Perfect Tense: "Had + V3": Affirmative, negative and interrogative forms, b. Regular and Irregular verbs (Past Participle Forms), c. Time adverbs: "before, last, ago, etc."
a. Third Conditionals: "If ....., Subject+would have V3", b. Linking words with "because of, owing to, due to, as a result of, etc."
a. Tag Questions, b. Sentences with "until, afterwards, by, etc.", c. Reported Speech
Consolidation and Revision

COURSE NAME	**HOUR**	**LOAN**	**ECTS CREDITS**
Mathematics II	3	3	3
Course Outline Basic Trigonometry, Trigonometric Functions, Matrices, Systems of Equations, Limit, Continuity, Differentiation, Graph of Functions, Integral, Integral Area, Volume and Center of Gravity.			

COURSE NAME	**HOUR**	**LOAN**	**ECTS CREDITS**
Building Statics II	3	3	4
Course Outline Gerber Beams, Truss Systems, Triple Articulated Systems, Analysis of Hyperstatic Systems, Bureau and Cross Method.			

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Building Technology II	2	2	3

Course Outline

Dilatation Joints, Insulation Against Water and Moisture, Insulation Against Fire and Heat, Insulation Against Sound, Earthworks (Fortification- Shoring- Cofferdam- Sheet), Traditional Construction Methods, Advanced Construction Methods, Construction Technique Selection Alternatives, Temporary Works (Formwork-Scaffolding)

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Concrete Technology	3	3	4

Course Outline

Definition of concrete, its place and importance today, types of concrete. (according to their density), concrete types (according to compressive strength and production sites), concrete types (special concretes), elements that make up concrete, aggregates and their types, cement and its types, additives and types, properties expected from concrete, factors affecting the properties expected from concrete, basic philosophy of obtaining quality concrete, concrete mixture calculation, concrete quality control criteria.

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Building Architecture and Detail Drawings	3	2	4

Course Outline

Drawing Works; The design includes the definition of geometry and technical drawing; Plan Drawings in Architecture; Appearance drawings; drawing sections; Dimensioning of Projects in Architecture; Production of Building System Details; Drawing of foundation, flooring, wall, roof, staircase, door and window details; Heat, Sound and Moisture Insulation Details and Related Applications; Supporting them with three-dimensional presentations.

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Strength	2	2	4

Course Outline

Solidification, Section, Equivalence, Saint-Venant, Principles of Superposition, Definition of Carrier Systems, Units, Stress, Components of Internal Forces, Calculation of Internal Forces, Relations Between Loads, Shear Force and Bending Moment and Definite Integration Method, Stress States, Equilibrium Calculations, Strain Changes, Volume Change, Hooke's Law, Modulus of Elasticity, Poisson's ratio, Elastic energy, Strength hypotheses, General Principles of Dimensioning, Moment of Inertia for Compound Sections, Radius of Inertia, Moment of Strength, Normal and Shear Forces, Strassing, Flexuring, Buckling and Stress, Displacement and Sizing Calculations of Their Combined States.

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Computer Aided Drawing	3	2	2

Course Outline

To be able to comprehend the basic elements of computer-aided drawing and design (CAD). To be able to draw drawings in computer environment using the Auto CAD package program for two-dimensional technical drawing applications.

III. SEMESTER COURSES

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Computer Aided Design I	4	3	3

Course Outline

Drawing of the architectural project of a building, Architectural Detail Drawings, Detail Drawings of Reinforced Concrete Elements.

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Soil Mechanics I	2	2	3
Course Outline General structure of soils in terms of environmental geotechnics, Inspection pits, Soil sampling methods, Water content, Soil inspection report, Wet Sieve Analysis, Relative density of fine-grained soils (Specific gravity), Relative density of medium and coarse-grained soils (Specific gravity), Natural unit volume weight (sand cone method), Grain diameter distribution of Fine-Grain Soils (Hydrometer method), Liquid limit test with Casagrande Device, Liquid limit test with cone sinking device, Plastic limit test, Shrinkage limit test.			

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Quantity Surveying and Exploration Works	3	3	3
Course Outline Unit Prices, Quantity and Discovery, Progress Payment, Provisional and Final Acceptance.			

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Reinforced Concrete I	3	3	5
Course Outline General information, Concrete and reinforcement, Docking (Adherence), Load or load effects acting on structures, Calculation and design of elements with simple bending effect, Axial (central) pressure effect, Calculation and design of elements with compound bending effect, Calculation and design of reinforced concrete elements with shear effect, Calculation and design of reinforced concrete elements with torsional effect.			

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Laboratory Techniques	3	2	3
Course Outline Experiments of building materials and elements such as Aggregates, Concrete Aggregates, Concrete and Concrete Elements (Tiles, Parquets, Borders, etc.), Natural Stones (Marble, Granite, Andesite, etc.), Bricks, Pumice Blocks.			

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Prefabricated Buildings I	2	2	3
Course Outline Wooden Prefabricated Buildings, Steel Prefabricated Buildings			

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Steel Structures I	2	2	3
Course Outline Steel Structure Systems, Places of Use, Steel Structure Material Types, Bolts, Rivets, Welds, Tensile Bars, Stress Tests, Bolted Joints of Tensile Bars, Welded Joints of Tensile Bars.			

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Hydraulics and Hydrology	2	2	3
Course Outline Hydrology, Statics of Fluids, Hydraulics, Pipe Currents Free Surface Flows.			

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Highway Construction I	2	2	2

Course Outline
Transportation Systems, Highway Standards, Highway Route, Horizontal Curves, Vertical Curves, Cross Section Extraction and Dever, Map and Field Observations.

COURSE NAME	**HOUR**	**LOAN**	**ECTS CREDITS**
Damage Assessment in Buildings I	2	2	2
Course Outline Damage Detection, Relay Operation, Non-Destructive Testing.			

IV.SEMESTER COURSES

COURSE NAME	**HOUR**	**LOAN**	**ECTS CREDITS**
Computer Aided Design II	4	3	3
Course Outline Modeling studies and drawing of the architectural project of a building, Architectural Detail Drawings, Detail Drawings of Reinforced Concrete Elements, Sizing.			

COURSE NAME	**HOUR**	**LOAN**	**ECTS CREDITS**
Soil Mechanics II	3	3	3
Course Outline Compaction of Soils, Settlement of Soils, Shear Strength of Soils, Bearing Strength and Free Compressive Strength of Soils, Permeability of Soils, California Bearing (CBR) Ratio of Soils, Soil Pressures, Improvement of Soils.			

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Building Repair and Reinforcement	2	3	4
Course Outline Damage Assessment, Relay Work, Non-Destructive Testing, Destructive Testing, Reinforcement in Structures.			

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Reinforced Concrete II	2	2	3
Course Outline Reinforced concrete shear walls, Foundations, Reinforced concrete foundations.			

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Topography	3	2	4
Course Outline Definition and Scope, Units of Measurement, Simple Measuring Instruments and Measuring Lengths, Measuring Lengths and Measuring Errors, Planimeter, Vertical Ascending and Ascending Instruments, Measuring Areas, Scale, Measuring Vertical Distances (Heights) – Point Leveling – Profile Leveling – Surface Leveling			

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Prefabricated Buildings II	2	2	3
Course Outline Reinforced Concrete Prefabricated Buildings, Reinforced Concrete Prefabricated Building Elements.			

COURSE NAME	HOUR	LOAN	ECTS CREDITS

Steel Structures II	3	3	4

Course Outline

Pressure bars in steel structures, One-piece pressure bar, Multi-piece pressure bar, Solid body beams, Profile beams, Construction beams, Supporting, Trusses, Columns, One-piece columns, Multi-piece columns, Attachments, Pillars and foundation, Beam composition, Roof Formation.

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Water Supply and Wastewater	2	2	2

Course Outline

Characteristics of Waters, Determination of Water Needs and Estimation of Populations, Transmission of Water (SALE), Drinking Water Reservoirs, Network, Sewerage, Hydraulic Principles of Groundwater and Forms of Intake.

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Highway Construction II	2	2	2

Course Outline

Filling and Splitting works, Art Structures, Route earthworks, Road Pavement Materials, Asphalt Pavements, Concrete Pavement.

COURSE NAME	HOUR	LOAN	ECTS CREDITS
Damage Assessment in Buildings II	2	2	2

Course Outline

Damage Assessment, Relay Work, Destructive Testing.