

## Course Descriptions-Ders İçerikleri

**ETB 101 TEMEL TASARIM I** (2+0+2) 3  
**(Basic Design I)** 5 ECTS

Making students feel competent to analyze the works that bring out the creativity, massive analysis of forms, 2 and 3 dimensional expressions and applications of fundamental design elements such as point, line, mark, pattern and color with different materials.

**ETB 102 TEMEL TASARIM II** (2+0+2) 3  
**(Basic Design II)** 5 ECTS

Gestalt principals in perception, composition assignments, 2 and 3 dimensional expression and application of fundamental design elements such as balance, ratio, hierarchy, integrity, impact point. Developing the abilities of interpreting thoughts and visual forms.

**ETB 104 ÜRÜN TASARIMINA GİRİŞ** (2+0+0) 2  
**(Introduction to Product Design)** 5 ECTS

Methods industrial designers use. Problem definition, concept and form development, idea drawings, interdisciplinary relations of design.

**ETB 121 MATEMATİK** (3+0+0) 3  
**(Mathematics)** 4 ECTS

General mathematics regarding industrial design. Mathematics subjects used in 2 and 3 dimensional designs, basic geometry, analytical geometry and equations.

**ETB 122 ÇİZİM VE ANLATIM TEKNİKLERİ** (1+0+2) 2  
**(Presentation Techniques)** 3 ECTS

Free hand drawings and mixed presentation and coloring techniques. Preparation of presentations expressing the product design process correctly. Being able to use the visual presentation techniques, earning the ability of passing on to the presentation with free hand.

**ETB 131 TEKNİK ÇİZİM VE PERSPEKTİF I** (2+0+4) 4  
**(Technical Drawing and Perspective I)** 5 ECTS

Introducing the technical drawing tools, drawing basic geometrical forms, 2 and 3 dimensional works regarding product design, cavalier and axonometric perspectives of 3 dimensional geometrical forms.

**ETB 132 TEKNİK ÇİZİM VE PERSPEKTİF II** (2+0+4) 4  
**(Technical Drawing and Perspective II)** 5 ECTS

Works regarding product design, simple projects, artistic perspective, producing the preparation methods of drawings in plan-section-view relationship.

**ETB 142 ÜRÜN TASARIMI İÇİN FİZİK** (2+1+0) 2  
**(Physics for Industrial Designers)** 4 ECTS  
General physics theories and rules regarding product design and their influence on object, structure and production and explanation of applications. Introduction to general subjects; static, dynamic, endurance.

**ETB 162 BİLGİSAYARA GİRİŞ** (2+0+0)2  
**(Introduction to Computer Aided Design)** 3 ECTS  
General knowledge about computers, their developments, programming and internet, basic programs and applications. Adobe Illustrator program and hands-on example exercises. Adobe Photoshop program that is counted as the base of all graphic processing and design programs

**ETB 201 PROJE I** (2+0+4) 4  
**(Project I)** 9 ECTS  
Introduction to industrial design. Analytical approach and design solution suggestions to simple objects, their applications and introduction to project preparation techniques. Design and development of one single product with simple program.

**ETB 202 PROJE II** (2+0+4) 4  
**(Project II)** 10 ECTS  
Relations among mass production methods and style, material and functional properties in industrial design. Project preparation and definitions of industrial design elements. Judgement value and criteria needed for design. Designs with simple elements and development of use and perception dimensions of these designs. Bonification and perfection exercises.

**ETB 211 BİLGİSAYAR DESTEKLİ TASARIM I** (1+0+2) 2  
**(Computer Aided Design I)** 3 ECTS  
Meaning and scope of computer-aided design. Evolution of computers, its components and the way they work. Programming languages and other communication subjects. Applications done through AutoCad, RhinoCeros and other CAD programs for 2 and 3 dimensional designs and drawings. 3D drawings and passing it onto production. CAM Essentials and examples.

**ETB 212 BİLGİSAYAR DESTEKLİ TASARIM II** (1+0+2) 2  
**(Computer Aided Design II)** 3 ECTS  
Meaning and scope of computer-aided design. Evolution of computers, components and the way they work. Programming languages and other communication subjects. Applications done with AutoCad, RhinoCeros and other CAD programs for 2 and 3 dimensional designs and drawings. 3D drawing and transforming them into production. CAM Essentials and examples.

**ETB 223 MALZEME ÜRETİM YÖNTEMLERİ I** (1+0+2) 2  
**(Materials and Production Techniques I)** 3 ECTS  
Physical and chemical properties of material types used in industrial products. Manufacturing tools, production methods and comparisons.

**ETB 224 MALZEME ÜRETİM YÖNTEMLERİ II** (1+0+2) 2  
**(Materials and Production Techniques II)** 3 ECTS

Physical and chemical properties of material types used in industrial products, material problems in product design, production, material selection and using properties, manufacturer request and process, manufacturer's competence, cost and economy.

**ETB 232 ERGONOMİ** (2+0+0)2  
**(Ergonomics)** 3 ECTS

Definition of ergonomomy. Relations with other sciences, methods and application areas. Man power, mechanic, automatic systems, human-environment-hardware factors, comparison of human abilities to machines in various projects, standards about human-machine systems.

**ETB 241 MODELLEME I** (0+0+4) 2  
**(Modeling I)** 3 ECTS

Method used in 3D works which will be done in experiment or explanation scale, introduction of technical material tools and machines. Models for design, test and production stages. Simulation works, cyber and real modeling techniques.

**ETB 242 MODELLEME II** (0+0+4) 2  
**(Modeling II)** 3 ECTS

Model types, principal moelsi kinematic models, volume models, ergonomic models, view and presentation models, prototypes. Selection of model type according to the purpose, model making techniques. Tools and machines processing the model materials. Model-human and model-function relations.

**ETB 301 PROJE III** (2+0+4) 4  
**(Project III)** 10 ECTS

Environmental problems in industrial design and evaluation of resources. Different production methods, design with function and material. Experimental works. Designing of developed systems and complex programmed mechanisms.

**ETB 302 PROJE IV** (2+0+4) 4  
**(Project IV)** 10 ECTS

Creative and new suggestions and new production methods in industrial design. Evaluation of resources and sustainability.

**ETB 291 SEKTÖREL ETKİNLİKLER I** (2+2+0) 2  
**(Sectoral Events I)** 2 ECTS

Occupational and technical trips. Attending seminars, conferences and panels.

**ETB 392 SEKTÖREL ETKİNLİKLER II** (2+2+0) 2  
**(Sectoral Events II)** 2 ECTS  
Occupational and technical trips forming direct relationship with the industry and attending seminars, conferences, panels, exhibitions and interdisciplinary team work and workshops which will provide field experience.

**ETB 333 MODELLEME III** (0+0+2) 1  
**(Modeling III)** 2 ECTS  
Working on ETB 301 project. Presentation models, simple molding applications and prototype production. Pilot production techniques and analysis on the model.

**ETB 334 MODELLEME IV** (0+0+2) 1  
**(Modeling IV)** 2 ECTS  
Working on ETB 302 project. Presentation models, simple molding applications and prototype production. Pilot production techniques and analysis on the model.

**ETB 401 PROJE V** (2+0+4) 4  
**(Project V)** 10 ECTS  
Designing with developed systems and methods. Designs of automotive and transportation systems. Experimental approaches. Designs and Project of wide and complex products or systems that will answer to all dimensions of the problem.

**ETB 433 MODELLEME V** (0+0+2) 1  
**(Modeling V)** 2 ECTS  
Work on ETB 401. Presentation models and prototype production.

**ETB 442 TASARIM HAKLARININ KORUNMASI** (2+0+0) 2  
**(Protection of Design Rights)** 3 ECTS  
Protection of artwork, design, invention, brand and other rights within the scope of intellectual property. Concept of intellectual property, protectable rights concept. Thought and artworks, artwork, artwork owners' rights and duration of the rights.

**ETB 490 BİTİRME PROJESİ** (2+0+4) 4  
**(Graduation Project)** 12 ECTS  
Application of knowledge and abilities acquired during the education with the supervision of a lecturer in transportation, shipping, vehicles and one of the other related fields of industrial products on a previously specified subject.

**Prerequisite:**

The Prerequisite of ETB 490 Graduation Project is all courses of previous 3 years.  
ETB 490 is not offered in Summer School. It is only offered in both Fall and Spring semesters of the following year.

**Departmental Elective Courses –Bölüm Seçmeli Dersleri**

**ETB 371 YAT TASARIMI I** (2+1+0) 2  
**(Yacht Design I)** 5 ECTS

Theoretical information on yacht design, definitions of karina, post and profile concepts with examples. Development of the yacht industry.

**ETB 376 YAT TASARIMI II** (2+1+0) 2  
**(Yacht Design II)** 5 ECTS

Practical applications about yacht design; designing upper structure on a previously specified karina, selection of material and production method, designs of yacht tools.

**ETB 473 OTOMOTİV TASARIMI I** (2+1+0) 2  
**(Automotive Design I)** 5 ECTS

Fundamental knowledge about designs of automotive tools and devices; vehicle terminology, vehicle technology, vehicle architecture, vehicle design methodology, vehicle body design, measurement and proportion, human-vehicle relationship

**ETB 475 OTOMOTİV TASARIMI II** (2+1+0) 2  
**(Automotive Design II)** 5 ECTS

Vehicle design concept development, vehicle drawing techniques “sketching & keyline drawing”, “clay modeling” (peculiar to the industry)

**ETB 341 TASARIM YÖNETİMİ** (3+0+0) 3  
**(Design Management)** 5 ECTS

Contribution to products, brands and other design factors for the planning of the product and management of the design process. Fundamentals of the design management concept, procedure of using design as a strategic and competitive factor within the scope of the firm and observation methods, innovation, R&D concepts and its relationship with the design, process of the product design and new product development process.

**ETB 351 MOBİLYA TASARIMI** (2+1+0) 2 AKTS 5  
**(Furniture Design)**

General approaches in furniture design. Interior and exterior furniture concept. Furniture and user relationship. Trends defining furniture design and its reflection on design technology.

**ETB 353 AMBALAJ TASARIMI** (2+1+0) 2 AKTS 5  
**(Packaging Design)**

Methods of product packaging, packaging material and production techniques, selection of packaging and design, warehouse keeping conditions, recycling methods and appropriate material selections.

**ETB 354 KENT MOBİLYALARI TASARIMI** (2+1+0) 2  
**(Street Furniture Design)** 5 ECTS

General approaches on city furniture design. Location-oriented furniture concepts, user relationship, urban approach and solutions. Relationship of city furniture with Socio-cultural differences, observation of material and production techniques solutions.

**ETB 356 SERAMİK/KALIP TEKNOLOJİLERİ** (1+0+2) 2  
**(Ceramics/Molding Techniques)** 5 ECTS

Various materials used in industrial ceramics and molding forms which are used in the latest production technology, hands-on applications

**ETB 361 ÜRETİM İÇİN BİLGİSAYAR DESTEKLİ MODELLEME** (2+2+0) 2  
**(CAD Modeling for Production)** 5 ECTS

Applications made with parametric CAD programs for preparing 3 dimensional products for manufacturing – Creating solid, surface and metal sheet pieces in product development, designing and managing complex installations, developing 2 dimensional drawings automatically, part relationship, installation, simple analyses – solid modeling, detailed 2D and 3D technical drawings, surface modeling, installation design, analysis properties, error control, mechanism design.

**ETB 362 PROJE YÖNETİMİ** (2+1+0) 2  
**(Project Management)** 5 ECTS

Fundamentals preparing a project. Project organization, planning, feasibility works, time and resource management

**ETB 372 ARAÇ İÇ MEKAN TASARIMI** (2+1+0) 2  
**(Interior Design of Transportation Vehicles)** 5 ECTS

Designs about vehicle interior space, relationship of interior and exterior space in air, sea and land vehicles, design of vehicle interior geometry, international standards, antropometric approaches, interface designs

**ETB 374 ULAŞTIRMA SİSTEMLERİ MODEL YAPIMI** (1+0+2) 2  
**(Modeling for Transportation Systems)** 5 ECTS

Modeling techniques and applications about transportation and shipping vehicles and tools. Preparation of application projects of products with a completed design, scaling, modeling of the part or the whole piece with appropriate materials.

**ETB 451 AYDINLATMA TASARIMI** (2+1+0) 2  
**(Lighting Design)** 5 ECTS

General lighting subjects. Definition of the light and photometric magnitudes, visual comfort. Definition of lighting systems design, majority of lighting, color of lighting, basic terms and concepts.

### **Complementary Elective Courses –Tamamlayıcı Seçmeli Dersler**

**BİLİM KURGUDAN GERÇEKLIĞE ÜRÜN TASARIMI** (2+1+0) 2  
**(Product Design From Sci-Fi To Future Reality)** 5ECTS

Scope and meaning of Film Production Design in Science fiction films. Conceptual Products that are designed for films and technological, social, cultural and practical dimensions of the concept of Future fictionalized over these designs. Introduction to Futurizm and Future Reality; science fiction over comparison of product analyses – observation of contemporary product design relationships.

**ETB 225 İLERİ ÇİZİM VE ANLATIM TEKNİKLERİ** (1+0+2) 2  
**(Advanced Presentation Techniques)** 5ECTS

Advanced Free hand drawings and mixed presentation and coloring techniques that express the design process accurately; marker, powder pastel, masking and techniques for creating a background.

**ETB 377 TASARIMDA YARATICILIĞI GELİŞTİRME YÖNTEMLERİ** (1+0+2) 2  
**(Methods of Developing Creativity in Design)** 5ECTS

Effects and development of creativity in product design process. Structure of creativity, its principals, creative behavior strategies, forms of thinking that block and ease the creativity, methods for efficient using of mind and body, searching new and original forms for creativity and innovation, seeking alternatives, creating a concept and production with concepts.

**ETB 462 ETKİLEŞİM TASARIMI** (2+1+0) 2  
**(Interaction Design)** 5ECTS

Interactional problems and the relationships with design, media and interactive media, conceptual design, corporate identity, interaction in text, vision, audio, physical objects and location.

**ETB 275 ÇOKLU ORTAMDA TASARIM** (3+0+0) 3  
**(Multimedia Design)** 5 ECTS

Introducing of numerical media in design. Meaning of programs used in application from the designer's point of view. Hand drawing and application of scaled drawings. Lightwave 3D program for modeling, animation, editing and presentation crossing with the design education of Multimedia, web, photography and cinema language.

**ETB 277 TASARI GEOMETRİ** (3+0+0) 3  
**(Descriptive Geometry)** 5 ECTS

Geometrical theorems and applications regarding 2 and 3 dimensional drawing techniques. Abstract thinking in spatial arrangements, use of geometrical theory and techniques in 2 and 3 dimensional product design. Perspectives and applications of objects' views and development. Projection concept and its types.

**GSE 296 SERGİLEME TASARIMI** (3+0+0) 3  
**(Display Design)** 5 ECTS  
*Display systems and designs*

**GSE 297 EKOLOJİK TASARIM** (3+0+0) 3  
**(Ecological Design)** 5 ECTS

*Ecological products, definitions of environment and energy, green design.*

**GSE 298 EKONOMİ** (3+0+0) 3  
**(Economics)** 5 ECTS  
Definition and fundamental principles of micro economy and macro economy. Operations of markets and its relationship with industrial products.

**ETB 311 BİLGİSAYAR DESTEKLİ TASARIM III** (3+0+0) 3  
**(Computer Aided Design III)** 5 ECTS İki  
Arrangements of 2 dimensional objects: Modify menu. Layer developing, passing through layers and changing object properties. Defining the areas of hatching. Creating library making use of block command, calling block objects into the drawing and arranging. Adding text to drawing, creating text style. Making scaling, developing a scaling template. Developing a sheet in AutoCAD. Printer and plotter setup, taking print-outs.

**ETB 312 BİLGİSAYAR DESTEKLİ TASARIM IV** (3+0+0) 3  
**(Computer Aided Design IV)** 5 ECTS

Combining, subtracting, cross sectioning and arranging tasks on 3 dimensional solid objects. Developing moving surfaces. Defining the point of view angle of the drawing. Creating isometric, artistic perspectives. Developing 3 dimensional finished products. Appointing material on 3 dimensional objects, creating light and camera. Developing photo-real visuals with hiding and shading assignments.

**ETB 331 TASARIM KURAMLARI** (3+0+0) 3  
**(Design Theories)** 5 ECTS  
Creativity and planning criteria in design and production. Theory, regulations and knowledge in this field. Reasons that prepare passing to the concept of industrial design. Design problems, general design concepts, design-production-consumption relations, factors that form the industrial design, mass production, standardization, factory production, using-becoming impractical-redesigning, product critiques. General and special criterias in industrial design.

**ETB 379 YÖNTEMBİLİM** (3+0+0) 3  
**(Methodology)** 5 ECTS

Research and development methods, resource and information searches, procedures and ways, data collecting and undertaking analysis techniques, perceiving and interpreting of product information accurately and diagnosis by the designer and the user.

**ETB 373 TASARIMDA ÜRÜN ANLAM BİLİM** (3+0+0) 3  
**(Product Semantics in Design)** 5 ECTS

Giving meaning to products, defining the indicators. Using these in design, other semiotics and semantics methods of definition and their places in design process. Linguistic, semiotic and semantic approaches. Design style language and new approaches and explanations that it brings to the concept of design. Indicator concept and types of indicators. Semiotic characteristics of products and semantic functions. Definition of product semantics, its scope, goals and aims, fundamental theories and fundamental approaches that it brings to the field of design. Selection of product semantic profile and developing the product program.

**GSE 395 AYAKKABI VE AKSESUAR TASARIMI** (3+0+0)3  
**(Footwear and Accessories Design)** 5 ECTS

Footwear and accessories design, production techniques.

**GSE 396 ENGELLİLER İÇİN TASARIM** (3+0+0) 3  
**(Design for the Disabled)** 5 ECTS

Definition of the disabled, their needs, standards and design solutions

**GSE 399 PORTFOLYO TASARIMI** (3+0+0) 3  
**(Portfolio Design)** 5 ECTS

In order to be ready for Professional life, preparing a portfolio in digital and print media.

**ETB 421 TÜKETİCİ İLİŞKİLERİ** (3+0+0) 3  
**(Consumer Relations)** 5 ECTS

Corporation and product relations of occupational applications with the consumer; evaluations about consumers' comments and feedback. Theories, analysis and examples, explanations of consumer behavior, creating a brand for the consumer, forming and developing a value and marketing relationship.

**ETB 431 PAZARLAMA** (3+0+0) 3  
**(Marketing)** 5 ECTS

Market criteria in product establishment and development. Variables in product marketing with market properties and marketing methods. Introduction to marketing, subject, purpose, economical status, importance, theoretical fundamentals, revolution, and centers of development of marketing. Theory of distribution. Importance of distribution for production management. Consumer behavior, consumer psycho-sociology; product, brand, innovation, fashion. Types of behavior. Urbanization and consumption. Geography of marketing, supervision of manufacturer, distributor and systems of distribution. Government and marketing relationship. Policy and strategy of sales and production. Advertising. Organization problems. Planning and development. Costs.

**Humanities and Social Sciences Elective Courses –Sosyal ve Beşeri Bilim Seçmeli Dersleri**

**ETB 352 TASARIM TARİHİ (3+0+0) 3**  
**(Design History) 5 ECTS**

Explication of the historical development of design in various ways. Looking into design activities throughout the ages with different socio-cultural structure properties. Necessity beginning from the pre-historical ages-undertaking the development for concept of tool production from the point of view of civilizations and technologies. Properties and production perception of Middle ages, Renaissance and pre-Industrial Revolution era. Developments after the Industrial Revolution. Rationalization, its influences and distribution. Essential design perceptions of 20<sup>th</sup> century and its influences on today's art and design.

**GSE 250 ENDÜSTRİ DEVRİMİNDEN GÜNÜMÜZE AKIMLAR (3+0+0) 3**  
**(Trends from Industrial Revolution to Present) 5 ECTS**

General subjects and different trends in design related to the developments after Industrial Revolution. Evaluation of the socio-cultural reflections of technological developments on the product.

**GSE 293 AKIMLAR VE EĞİLİMLER (3+0+0) 3**  
**(Trends and Attitudes) 5 ECTS**

Design and art movements, attitudes directing these movements, schools and new approaches.

**GSE 294 SOSYAL PSİKOLOJİ (3+0+0) 3**  
**(Social Psychology) 5 ECTS**

Observation of how behaviors, emotions and thoughts of individuals are influenced by the attitudes of one's self and others, prejudices, social cognitions and cultural properties.