ISTANBUL TECHNICAL UNIVERSITY

FACULTY OF TEXTILE TECHNOLOGIES AND DESIGN

DEPARTMENT OF TEXTILE ENGINEERING

Having **240 year** of prominent history, a contemporary education environment and impressive academicians, Istanbul Technical University has been distinguished in Turkey with its engineering and architecture education, and is pioneer through the ages. Department of Textile Engineering of Istanbul Technical University comes first among the top textile engineering schools in Turkey. The Department gained its current name and independent status under Mechanical Faculty in 1983. Following the establishment of “Faculty of Textile Technologies and Design” in December 2004, Department of Textile Engineering has become a part of this new Faculty.

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İSTANBUL TEKNİK ÜNİVERSİTESİ 1773

With 30 years of experience in Textile Engineering education, our goal is to **educate leading FUTURE TEXTILE ENGINEERS who will carry on their life-long learning and continuous self improvement while being respectful to the environment and having ethical values.** Among our Textile Engineering graduates, who are totally over 1700, there are successful entrepreneurs, managers in pioneering and key positions, as well as researchers and scientists.

Our Textile Engineering Undergraduate Program is the first Textile Engineering program in Turkey which has gained equivalency from the globally recognized accreditation institution **"the Accreditation Board for Engineering and Technology (ABET, USA) in 2003, and subsequently in Fall 2011;** we have this time gained a full accreditation -together with 23 other engineering programs in ITU- from ABET and we are the only local textile engineering program under this qualification in Turkey. Since 2006, our Department is a member of AUTEX (Association of Universities for Textiles) which is a European institution formed by contribution of universities whose textile education and researches are internationally recognized, and has been supporting and actively attending the educational and scientific activities of the institution.

We are bidding farewell to our graduates who will be future researchers, leaders and managers of the sector which has a strong infrastructure, high level of technical capabilities and experiences, high contribution to employment and national economy, and which is globally capable and competitive.

Textile Engineering: The Future Job

Textiles being in the crossroads of the cutting edge technological developments and science, and on the strong stream of multi-disciplinary studies, having areas of end uses including those in constructions to space ships and cloths, all sorts of products for daily life to medical treatment and support systems, increasing their market shares as smart, functional, environmentally friendly products, TEXTILE ENGINEERING turned once more into a leading area of research, and the FUTURE JOB. Nanotechnology is enormously promising for the future of textiles. Textile manufacturing industry is peeling off its traditional structure, and looking for ways of mass production of smart and functional textiles with acceptable price range. While micro-, nano-, bio- and information technologies are stepping up a level, from novel fiber structures to composite materials, from micro- and nano-sized coatings to wearable electronic devices, many new extraordinary opportunities which will further improve functionality in textiles keep on being brought to agenda. Besides scientific studies and research projects performed at the universities, the most

significant topic at the agenda of Turkish Textile and Apparel Industry is nationwide spread industrial R&D. Leaded by Istanbul, production and service sectors for textile and apparel industries nationwide reached their peak in terms of global and local business organization and management fields, and our country has become a leading center that the world trusts and wishes to collaborate.

Textile Engineering Undergraduate Program Curriculum is UPDATED, language of education is altered to 100% ENGLISH:

By considering today's and future's requirements, four year curriculum plan of Textile Engineering has been renewed significantly. In this plan, indisputable superiority of ITU in basic sciences and basic engineering education is preserved, and with the versatility obtained by newly offered obligatory and elective courses, significant improvements that will fulfill the ever changing needs of textile engineering has been achieved. Moreover, by taking into consideration the international functions as well as pioneer and influential role of Turkish Textile and Apparel Industry, and parallel with target of ITU regarding being a research institute, language of education of Textile Engineering Undergraduate Program has been altered to 100% English. New plans have been in place from 2010-2011 Academic Year, and first three years have been successfully completed. ITU Textile Engineering offers exchange programs for its students, and admits international students, researchers, and professors.

Textile Engineering Undergraduate Program is a highly strong and internationally recognized engineering program. Our quota is 10 international students and 70 national students per year.

Textile Engineering Curriculum contains 25% Basic Sciences (39 credits), 22% Basic Engineering (33.5 credits), 33% Textile Engineering (51.5 credits), and 20% Humanities and Social Sciences (30 credits) courses summing up to a total of 154 credits in eight semesters. Elective courses have a share around 20%. Students are mostly offered basic sciences and basic engineering courses in the first four semesters. These courses are taken together by all ITU engineering program students from various other majors. Credits of textile engineering courses increase starting from the first year, and reach their peak at the third and fourth years; students are given extensive knowledge on material and production technologies about fiber, yarn, fabric, and ready-to-wear industries. Obligatory courses are offered in two parallel classes while selective ones are offered in one class. Obligatory summer trainings are fulfilled after 2nd, 4th, and 6th semesters. Senior design project carried out as a teamwork in the final semester offers opportunity to an engineering design of an extensive scope.

Working Areas for Textile Engineering Graduate of ITU:

Multi-functional design, development, production, and control of fiber, yarn, fabric, ready-to-wear, technical and functional textile products / Global and local textile business management / Process and technology design and improvement / Production management for more efficiency and best product quality / Safety, energy saving, waste and pollution control.

ERASMUS programs with textile engineering departments of 16 European universities:

Belgium - Ghent University;
Czech Republic - Technical University of Liberec;
Estonia - TTK University of Applied Sciences;
France - Ensait and Ensisa Universities;
Germany - Technical University of Dresden, Niederrhein and Hof Universities of Applied Sciences;
Greece - Technical Educational Institute of Piraeus;
Lithuania - Kaunas University of Technology;
Poland - Lodz Technical and Bielsko-Biala Universities;
Portugal - University of Minho;
Romania - Gheorghe Asachi Technical University;
Slovenia - University of Maribor;
Sweden - University of Boras.

Textile Engineering Curriculum

1st YEAR	**1st SEMESTER** General Chemistry I / General Chemistry I Lab. / Intr. to Comp. and Info. Sys. / Mathematics I / Physics I / Physics I Lab / Technical Drawing / Introduction to Textile Engineering / English Course I	**2nd SEMESTER** Fiber Science / Organic Chemistry / Mathematics II / Physics II / Physics II Lab. / Intr. to Sci & Eng Comp. / English Course II
2nd YEAR	**3rd SEMESTER** Engineering Mechanics / Linear Algebra / Materials Science / Differential Equations / Textile Chemistry Yarn Technology I / English III	**4th SEMESTER** Strength of Materials / Weaving Technology I / Probability and Statistics / Numerical Methods / Knitting Technology I / Turkish I / Elective Course (TB): Environmental Chemistry / Mathematical Programming / Introduction to Polymer Chemistry
3rd YEAR	**5th SEMESTER** Thermodynamics / Clothing Technology / Machine Elements / Mechanisms / Textile Testing / Economics /Turkish II	**6th SEMESTER** Yarn Technology II / Design in Textile Engineering / Pretreatment, Coloration and Finishing in Textile / Fluid Mechanics / Essentials of Electrical Engineering / Weaving Technology II / Elective Course (TM): System Dynamics & Control/ Heat Transfer
4th YEAR	**7th SEMESTER** History of Turkish Revolution I / Fabric Design / Nonwovens / Elective Course I (ITB):General pool Elective Course I (MT): Knitting Technology II / Technical Yarns / Synthetic &Textured Yarn Prod./ Special Woven Fabrics / Pre-treatment Processes / Elective Course II (MT): Ecological Textiles/ Yarn Production Calculations/ Textile Production Management & Control / Textile Finishing Auxiliaries/ Garment Pattern Making in Apparel / Elective Course II (ITB): Motion and Time Study/ Cost Accounting/Labor Law	**8th SEMESTER** History of Turkish Revolution II / Senior Design Project / Engineering Ethics / Elective Course (SNT): General pool / Elective Course I (MT): Design of Knitted Fabrics / Dyeing &Printing Technologies/ Int. to Technical Textiles/ Structure & Properties of Fibers / Elective Course II (MT): Color Analysis / Textile Finishing Processes/ Knitted Apparel Production/ Garment Design Management/ Quality Control in Textile &Clothing Production

TB: basic science elective; TM: basic engineering elective; MT: textile engineering elective;
ITB: humanities and social science elective; SNT: Fine arts and Turkish Music Conservatory electives

2011-2012 ACADEMIC YEAR SENIOR DESIGN PROJECTS:

- Design of thermally improved hollow knitted fabrics for use in car seats
- Design of woolen fabrics with improved heat management properties
- Design of electro-conductive textile surfaces for EMI-shielding and smart textile applications
- Design of new medical clothing and developing a strategic marketing plan
- Design of a niche denim fabric using nettle fibers
- Design of a high strength and anti-bacterial linen/shirt fabric
- Design of an environmental friendly base support for acoustic panels
- Design and production of electrospun polyurethane nanofibers with improved fiber diameter distribution
- Design of a photochromic cotton woven fabric with chameleon-effect
- Design of a double-function laptop case with electromagnetic shielding
- Design of a personal stone washing effect for denim fabrics in home laundry machines
- Design of nanocomposite polypropylene fibers with improved properties and dyeability
- Design of a breathable nanofiber coated lining fabric with improved water resistance
- Design of a fabric enriched with the effect of different core-spun weft yarns
- Design of a color matching algorithm based on image processing
- Design of a coated denim fabric with improved stability and surface effects
- Design of a spectrophotometric method for determination of carboxymethylation of cotton fabric
- Design of wearable e-textiles suitable for electrical circuit integration
- Design of a linen washing program for laundry machines with steam generator
- Design of a test system for fabrics under double-axis strain

Double Major and Minor Programs:

Double major programs (at least 54 additional credits): Chemical Engineering, Management Engineering, Manufacturing Engineering, Mechanical Engineering, Industrial Engineering, Environmental Engineering.
Active minor programs (23,5 additional credits).

Infrastructure:

In our school, we have two Students' laboratories with capacities of 30 students each for microscopy, chemistry, and physical testing, Hand Knitting and Hand Weaving laboratories with capacities of 25 students each, Fabric Design Laboratory equipped with up-to-date software and hardware, Ready-to-wear Workshop with a capacity of 25 students, Fashion Studios, Textile Machinery Laboratories possessing up-to-date Yarn Folding and Twisting, Weaving and Knitting Systems, as well as various other research laboratories.

Gümüşsuyu Campus and Facilities:

Gümüşsuyu Campus is five minutes walking distance to Taksim-Beyoglu, the cultural and social center of Istanbul. Transportation to the campus is possible by bus, subway, and ferry. Maslak Campus (main campus) and its rich facilities are easily accessible by subway. Main campus has a wide range of facilities, including main library which is open round-the-clock, hostels, sports center, soccer pitch, tennis courts.

Highly active student clubs arrange many vocational and social activities through the year, including R&D and carrier days with representatives from industry and service sectors, technical visits. Students are encouraged to participate in Soccer, Volleyball and Basketball teams, as well as singles.

www.tekstil.itu.edu.tr

Contact person for international students:

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