As of January 2017

- Full-time Faculty members : 10
- Post-Docs: 5
- Network faculty member: 2
- Graduate students: 48
  - Master: 16
  - Ph.D: 32
- Undergraduate students: 87

Ranked between 251-300 in QS World Electrical Engineering in 2015. Accredited by MUDEK (Turkish ABET) since May 2016.

http://ee.sabanciuniv.edu
EE subjects

- **Digital Systems**
  - Very Large- Scale Integrated Circuits (VLSI)
  - System-on-Chip Design and Test

- **Electronics and Circuits**
  - Micro/nano devices and systems
  - MEMS Based Ultrasonic Imaging and Therapy
  - RF/millimeter-wave Antenna and Circuits Design

- **Optics and Photonics**
- **Signal Processing**
  - Computational Medical Imaging/Medical Image Computing
  - Multimedia Security and Information Hiding
  - Statistical Signal and Image Processing

- **Telecommunications**
  - Computer and Communications Networks
  - Wireless Communications, 5G Networks
  - Channel Coding & Receiver Design

- Control systems, Information science, Biomedical applications,…
Laboratories

L020
VPALAB - Computer Vision and Pattern Analysis

1021
RF/ Microwave Circuits Lab

1033
Electronics and Computing Undergraduate Lab

1050
Electronics Workshop
Laboratories

1054
Electronics Research Lab

1061
Clean Room

1062
IC Design & Test Lab

1067
Optics-Photonics Research Lab
Laboratories

2015
RF/Wireless Communication Lab

2016
VPALAB - SPIS

2017
Telecommunication & Networking Lab

2020
Computer Vision and Pattern Analysis Lab
SUNUM Labs inline with EE research areas

Micro/Nano Fabrication (Clean Room) Laboratory
Electron Microscopy & Spectroscopy Laboratory
Nanoelectronic & Nanomagnetics Laboratory
Materials Characterization Laboratory
Energy & Surface Chemistry Laboratory
Microsystems Testing Laboratory
Anechoic Chamber

http://sunum.sabanciuniv.edu
EE lab at home

USB Digital Oscilloscope + Spectrum Analyzer + Data Recorder + DDS signal generator + Sweep 20M 48MS/s

LM358 Op-Amp

LM555 Timer

Kapasitör

Diyot

Transistör
Professional Organizations

- Institute of Electrical and Electronics Engineers
- More than 400,000 members
SOC and SIP Integration Technology
EE area examples:
Computer Hardware

Desktop PC
Embedded System
EE area examples:
Biomedical Applications

ECG

Ultrasound

MRI

Cortical Activity during Hand Movement

Contralateral Hemisphere

Ipsilateral Hemisphere

Healthy Subjects (Right Hand)

Stroke Patients Affected Hand (Right Hand)
## EE area examples:
### Consumer Electronics and Communications

<table>
<thead>
<tr>
<th>1G</th>
<th>2G</th>
<th>3G</th>
<th>4G</th>
<th>5G</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Kbps</td>
<td>64 Kbps</td>
<td>2 Mbps</td>
<td>100 Mbps</td>
<td>10 Gbps</td>
</tr>
<tr>
<td>Basic voice service using analog protocols</td>
<td>Designed primarily for voice using the digital standards (GSM/CDMA)</td>
<td>First mobile broadband utilizing IP protocols (WCDMA / CDMA2000)</td>
<td>True mobile broadband on a unified standard (LTE)</td>
<td>‘Tacile Internet’ with service-aware devices and fiber-like speeds</td>
</tr>
</tbody>
</table>
EE area examples:
Consumer Electronics and Communications

What 5G is about

- Smart mobility
- Smart parking
- eHealth
- Traffic priority
- Entertainment: Apps beyond imagination
- Smart wearables
- Water quality
- Connected house
- Smart Car
- Car-to-car communication
- Domotics
- Security & Surveillance
- Smart Grids
- Utility management
EE area examples: Military Technology

Night Vision

RADAR
EE at Sabanci University

- Interdisciplinary education, flexible programs at SU
- EE: close neighbors with other science and engineering disciplines
- Flexibility within EE – easy to find a “home” for one’s particular interests
- Ease of transition to other fields

EE’s overlapping topics with other programs
- MAT: Optics, electronic materials
- BIO: Biosensors, instrumentation, Biomedical signal processing, Bioinformatics
- CS: Networking, Machine Learning, Computer Vision
- ME: Robotics, Control
- IE: Optimization

- MATH: Minor Honor Program
- PHYS: Minor Honor Program
- Double major opportunities
EE at Sabanci University

• Degree requirements (Core + Area + Free electives similar to other FENS programs)
• Mainly two tracks (EE Track 1 and 2) specializing in following EE fields:
  
  Digital Systems  
  Electronics and Circuits  
  Optics and Photonics  
  Signal Processing  
  Telecommunications

• Basic 2nd year courses: Signals, Circuits, Probability, Electromagnetics, Linear Algebra
• More specialized courses in 3rd & 4th year
• EE education at SU covers all specialty areas, with *earlier* and *further* specialization as compared to other institutions.
• Paths towards academia, industry, entrepreneurship
What do EEs become?

- **Researcher**: Develop future emerging technologies at universities, laboratories, private institutions, corporations

- **R&D Engineer**: Apply results of research to practical problems and products; engineering design and implementation
  - **Firmware/Software Developer**
  - **Hardware Designer**

- **Systems/IT Engineer**: Application specific system/network design

- **Manager**: Technical leadership, planning, coordination, supervision

- **Entrepreneurs**: Start their own companies

- and more...
EE graduates in Academia

Brown University
Caltech-California Institute of Technology
Carnegie Mellon University
Columbia University
EPFL Ecole Politechnique Federale de Lozan
Freiburg University
Nortwestern University
Rensselaer Polytechnic Institute
Rochester University
San Diego State University
Stanford University
Technical University of Hamburg
Texas University A&M
TU Dresten Technical University
University of California (San Diego, LA, Irvine, Riverside, Santa Barbara)
University of Michigan, Ann Arbour
University of Rochester
Worcester Politechnic Institute

Bilkent Üniversitesi
Boğaziçi Üniversitesi
ITU
Koç Üniversitesi
ODTÜ
Sabancı Üniversitesi
EE graduates in Industry

STMicroelectronics Istanbul Design Center
Atos Origin
Cypress TTD
CTech
Grid Telekomüniksayon
Huawei
Intel, Denmark
Apple Inc.
Kyoto
TÜBİTAK UEKAE
Vestek Ar-Ge A.Ş.
Vestel
Arçelik
Argela Teknoloji İTÜ Teknokent
Aselsan
Danone Tikveşli
Kista KTH Forum
Momentum DMT
Netaş Nortel
Nexus Bilişim A.Ş.
Oksijen Teknoloji
Teleniki Bilişim Teknolojileri
AirTies Wireless Networks ...
Advices for Major Selection

• Do NOT decide on your profession based on how easy the undergraduate program is!

• Make it based on your best prediction of which profession will make you happiest IN THE LONG RUN!

• Collect lots of data, know yourself, seek help, decide, be happy!
http://ee.sabanciuniv.edu