Higher Institute for Applied Sciences and Technology

HIAST

For highly qualified engineers

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Outlines

- About HIAST
- Key Figures
- Organizational Structure
- Study at HIAST
- Infrastructure & Facilities
- Research & Development
- Scientific Collaboration
Established in 1983
Selecting students with top High School marks.
Limited number of students.
Graduating highly qualified engineers in many applied science fields.
A highly qualified teaching staff.
Best teacher/student ratio: ~1/5.
Regular assessment and evaluation of students progress.
Up-to-date and flexible program
Key Figures

● **Staff:**
  - 104 Ph.D (33 part-time employees)
  - 132 Engineers (11 part-time employees)
  - 90 Technicians.
  - 90 Administrative staff
  - 100 Service Workers.

● **Students:**
  - 356 undergraduates
  - 75 postgraduates (38 Master + 37 PhD)
Study at HIAST

- Limited number of students from two categories:
  - Students financed by public institutions
  - Self-financed students

- Offered degrees:
  - Bachelor Science in Engineering
  - Masters
  - PhD
Study at HIAST

Bachelor Science in Engineering

- Five years study
- Common Core: 2 years
  - Basic subjects: Mathematics, Physics, Chemistry, Engineering sciences, Languages (English & French)

- Specialization 3 years
  - Informatics Systems
  - Electronic Systems
  - Telecommunication
  - Mechatronics
  - Materials Science (new)
  - Aeronautics: (in Aleppo)
Study at HIAST

Masters and PhD

- Master: 2 years (1y courses + 1y project)
- PhD: 3 years
- Specialization
  - Materials Science
  - Telecommunication Systems
  - Informatics:
    - Decision Support Systems
    - Big Data Systems (new)
  - Electronic System
  - Mechatronics
Training Activities

- Training Department
  - Provide in-house training courses to the employees to acquire knowledge and to enhance their professional skills
  - Training courses are also provided to external customers (public and private sectors)
  - Wide range of subjects: from office application to specialized industrial tools
Infrastructure & Facilities

- Modern laboratories
  - 54 Laboratories and Workshop Facilities available for teaching, research and development.
- Student Computer Rooms
  - 13 rooms (240 PCs)
- Languages Laboratory.
- Rich Library
  - scientific & cultural references
Computer Network

- Local Area Network:
  - Giga bit Ethernet backbone
  - Data Center
  - More than 800 PCs
  - 25 Servers

- 100 Mb/s Internet Connection

- Internet/Intranet Services:
  - Web Portal, E-mail, E-Learning, …etc
Infrastructure & Facilities

Students Life

- Campus:
  - 467 student rooms
  - Apartments for teachers and visitors
  - Restaurant.
Students Life

- Sport compound: xballs, swimming pool, body building…
- Clubs: Robotic, ACM, Music, Sport, Astrophysics, Painting, etc
- Social activities: Exhibitions, parties, Trips
Research and Development
R&D activities

Informatics

- ERP Systems for public institutions (Banks, Hospitals, Ministries, Universities, etc)
- Arabic Language Processing
  - Interactive Arabic Dictionary, Arabic Morphological Analyzer, Arabic Text to Speech System, …
- High Performance Computing
- Information & Decision Support Systems
- Big Data Systems
- E-Learning
R&D activities

Electronic and Mechanical Systems

- **Automatic Control**
  - Non Linear, Fuzzy, Robust
  - Stochastic filtering for Control and Navigation applications

- **Robotics**
  - Manipulators: SCARA, Four degrees of freedom serial robot
  - Parallel Robots: Hexapod, Delta robot, Five bars robot.
  - Mobile Robots: Hybrid robots, Trajectory planning and control

- **Power Management**
  - Pilot platform for PFC Power Factor Correction and testing
  - Renewable energy sources management
    - Control of bidirectional multilevel grid connected DC-AC
    - Control of grid connected PV system
R&D activities

Physics

- Materials Science:
  - Polymers, Magnetic materials, Nano-materials and nano-fibers, Ceramic, Metallurgy

- Optics and laser:
  - Laser applications, Optics instrumentation

- Sensors
  - Chemical sensors (chemiresistors), Organic solar cells

- Renewable energy
  - Solar tracking, Alternative fuel
R&D activities

Telecommunications

- Radio, Optical and Digital communications
- Signal processing
- Communication networks and networking
R&D activities

Environment

- Chemical pollutants analysis of water and soil
- Air pollution analysis: stack-gas emissions, indoor and outdoor air quality.
- Water microbiological analysis.
- Wastewater treatment stations (working with active sludge mode)
Scientific Collaboration

- HIAST has a large collaborative activities at national and international levels (The Syrian elite of scientific cooperation)

- At National level:
  - Universities and Institutes
  - Public Institutions
  - National Organization
    - ASST (Arab School of Science and Technology)
    - NGOs:
      - NOSSTIA (Network Of Syrian Scientists, Technologists and Innovators Abroad)
      - SCS (Syrian Computer Society)
    - Supporting National Initiatives
      - National Center for the Distinguished
      - National Commission For The Syrian Science Olympiad
Scientific Collaboration

- At International level:
  - Universities
    - French Universities and High Schools for Engineers
    - World wide Universities: Germany, Italy, Russia, Iran, China, Malaysia
  - International Organizations
    - UNDP, ESCWA, UNESCO, ALECSO, AUF
  - European Union
    - HIAST was founded by collaborative efforts between Syria and France.
    - 20 projects since 1988 under European Union European Framework Programs (EUMEDIS, Tempus, FP6, FP7)
In Summary

HIAST in Syria

- Center of Excellence for High Education and Research & Development.
- Focus on high level qualification of engineers.
- Pioneer in project implementation in many fields in Syria.
- Participation in decision making in Syria
- The Syrian elite of scientific cooperation with Foreign universities and organizations
- HIAST Suffers from Brain Drain because of the crisis
Thank You!