

Republic Of Tunisia  
**University College Of Aviation & Technologies**

Accredited by the Ministry of Higher Education & Scientific Research 04/2003



**Your Future  
Begins Here**

### **MISSION & STRATEGY**

ESAT provides the Aviation & Automobile industries, the Topography & Cadastre, and the Energy Sectors with well trained people having the skills that they need, through a training program recognized and certified. Practical training through type rating and industry internships allows students to get professional experience while progressing in their curriculum.

# Training Programs

**Integrated preparatory program (for Pilots & Engineering Students)**  
**National Engineering Diploma in :**

- Aeronautics
- Geomatics & Topography
- Telecom & Networking
- Computer & Programming

**Bachelor & Masters :**

- Bachelor on Auto vehicle mechanics
- Master on Renewable Energies



*Administration and Teaching Staff*

# PROGRAM DESCRIPTION

The University focus on academic excellence means our emphasis is placed on the individual student. Our professional educators share a commitment to the success of our students who benefit from the opportunity to interact one-on-one with highly qualified respected professors.

## 1. DEPARTMENT OF AVIATION

### PREPARATORY: (2 YEARS)

What is meant by "integrated preparatory classes"? ESAT preparatory classes program is compatible to nationwide engineering preparatory classes mainly for Math & Physics.

Admission follows a baccalaureate, for engineer course, as part of the 5 years:

- 2 Years of integrated preparatory classes
- 3 years of the engineering course and finally the diploma!

The move from the preparatory classes to the engineering course is on the basis of continuous assessment and final exams.

### PROGRAM GUIDELINE

Group1: Common subjects

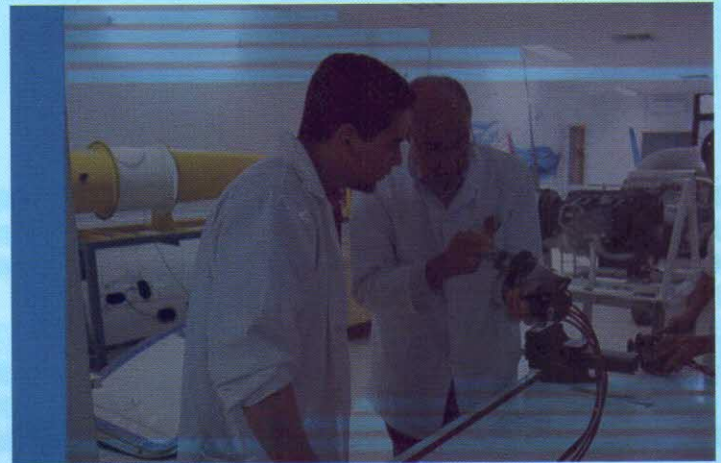
Math, Physics, Electronics, Computer sciences, English, French communication

Group 2: Specialized subjects

Theory of Material, Mechanical engineering, Aircraft Engine technologies, Navigation system, Meteorology, Aviation regulation and legislation.



**WORKSHOP on simulator B737-800:  
Flight Mangement Computer Programming**



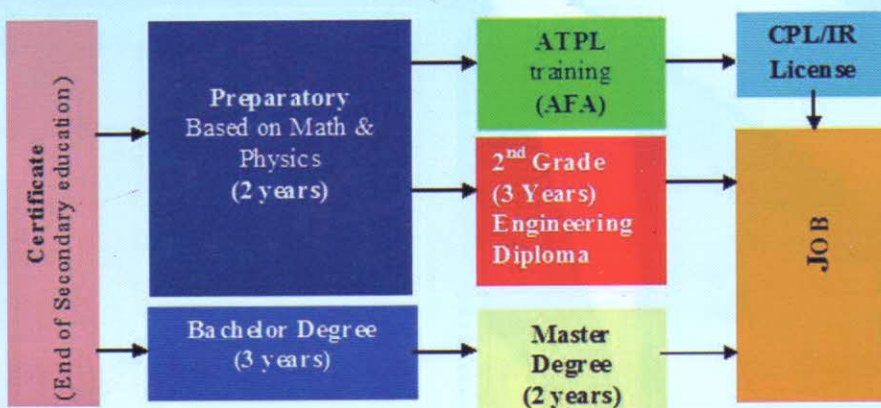
**Engine Workshop**

### NATIONAL ENGINEERING DIPLOMA IN AERONAUTICS (3 YEARS)

Objectives

Training over three years (six semesters) includes a set of scientific disciplines grouped into courses (basic and technological) and in engineering education (humanities and general education) to allow each student, to develop skills in terms of scientific and technological capabilities, methodological, intelligence of the environment and personal development.

## PROGRAM FLOWCHART



**Research project: DRONE**

### Program Outline:

The three-year training includes a set of disciplines:

- Science & Technology: Applied Math, Mechanics, Electronics and Signal Processing.
- Aviation: Aerodynamics, Flight Mechanics, Aircraft Structures, Composite Materials, Avionics, Aircraft Engines & Reactors,
- General: English (TOEIC preparation), Air Transport Economy, Aircraft maintenance procedures
- Workshop & practice: MATLAB, CATIA V5, CO-Sim, ABAQUS, COMSOL, Microcontroller Familiarization (Reactor, APU, Landing Gear, Hydraulic systems, Aircraft Electricity, FMS, Power Plant,...) using the technical documentation of Airbus and Boeing. An internship program, mini projects, and work on simulator are included in the training.

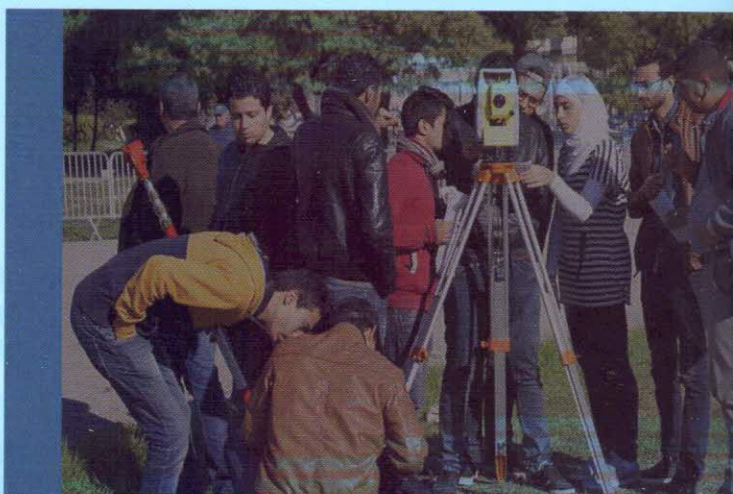
- Geography, Topography, Navigation;
- Spatial Planning and Urban Development;
- Meteorology; Flight simulators, navigation;
- Remote Sensing
- Geomarketing, Hydrography, Marine Biology;
- Forestry, Agriculture,
- Public safety; Emergency measures; Transport;
- Mining Industry

Professionals working in the area of Geomatics and related software: project manager, GIS administrator, cartography or Topography experts, spatial data processing manager, etc.

## 2. DEPARTMENT OF NEW TECHNOLOGIES

### 2.1 GEOMATICS & TOPOGRAPHY ENGINEER

The training program in Geomatics is based on a set of technologies to model, represent and analyze the territory to make virtual representations. These technologies include: geo-localization, space imagery, databases, GIS (Geographic Information System), decision-support systems, and web technologies. The fields of application are extremely numerous and range from traditional occupations through the full range of new technologies involving social networks and using mobile technologies:

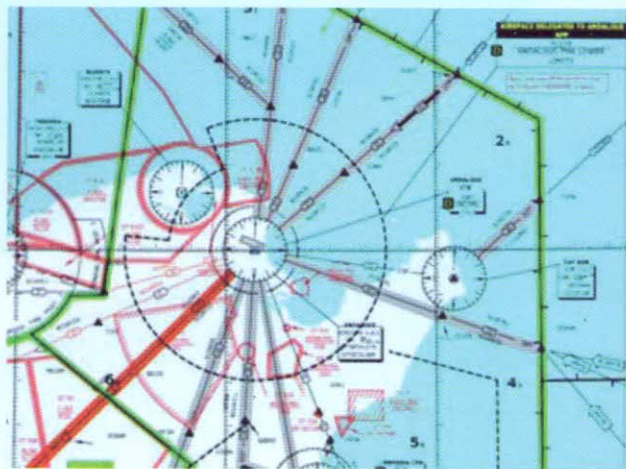


On site geomatics & topography workshop

### 2.2 TELECOM & NETWORKING ENGINEER

#### PROGRAM GUIDELINE

The objective of this training is to enhance future engineer's theoretical and practical backgrounds together with a solid know-how in order to foster their ability to follow technological changes that characterize this particular sector.



Graduation research projects

The course includes modules of technology and telecommunication networks such as signal processing, telecommunications, electronics, computers and networks.

Other modules are included in order to strength professional asset of the engineer, in addition to introduce system components and telecommunications networks, architecture and integration. The training run all around:

- Architecture of telecommunication systems.
- Mobile communications.
- The engineering protocols and networks.
- Distributed Systems and Networks.

## 2.3 COMPUTER & PROGRAMMING ENGINEER

### PROGRAM GUIDELINE

Student who did finish successfully the preparatory program can start the engineering program which can be accomplished in 3 years minimum.

Three years to become a computer engineer, according to ESAT philosophies:

- Mastering all aspects of what Computer & Programming Engineer need to be.
- Acquire managerial aspects of an IT company.
- Get the necessary backgrounds to succeed in one or more specific area.
- Open up new opportunities at international level.

The objectives of the Computer Engineering program are to train engineers in order to be able to:

- Understand technology and business issues,
- Propose and build competitive & realistic solutions,
- Work on complex problems,
- Lead complex development projects from specification to final product.



**Wind tunnel realization research project**

## 3. DEPARTMENT OF BACHELOR & MASTER

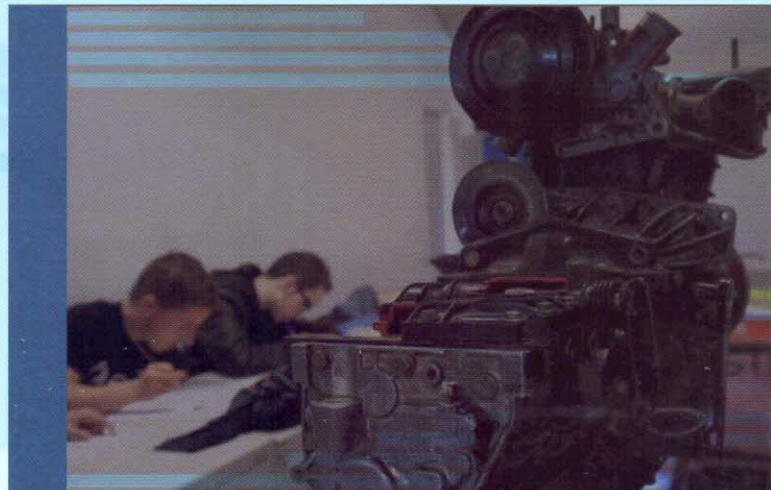
### 3.1 BACHELOR IN CAR VEHICLE MECHANICS (3 YEARS)

Car Vehicle mechanics (Mechatronics) is designed to train car maintenance technician capable to work in industrial & business environment by implementing various technical knowledge while integrating economic and management dimensions.

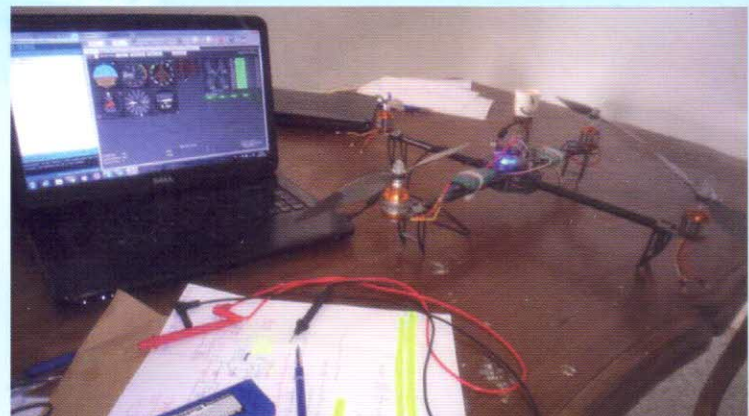
The student will be a specialist in both Car Vehicle mechanics & Electronics able to think and to understand the systems in their global dimension such as :

Job opportunities:

This training offers many diverse and professional opportunities: Training prepares for careers in Car Vehicle mechanics & Electronics within Dealer maintenance centers, Organizations maintenance centers, Private projects, etc.



**Car vehicle engine course & workshop**



**GPS Guided DRONE(Quadri Copter)**

## 3.2 MASTER DEGREE IN RENEWABLE ENERGIES

### Objectives

The objective here is to provide students with high-level of technical skills & expertise in the area of renewable energy such as: Thermal, Photovoltaic, Wind, Hybrid and the integration in power grids. The candidate will go through all the steps: modeling techniques, control, design, and supervision of the different components of the chain of renewable energy system.



**Photovoltaic workshop**

At the end of this program, each candidate will be able to meet the growing demand for technical expertise in:

- The energy industry,
- Energy management,
- The decentralized energy production
- Implementing or using the energy conversion and storage.

### Job opportunities

- Expert in Engineering Design and Development
- Expert in energy systems audits
- Consultants, regional offices, national and international organizations
- Project management-Integrate Public or private organizations and industries concerned with the production and distribution of electric energy (STEG , ANME , SEREPT , ...) , large energy consumers such as (chemical industry, construction materials manufacturing , etc ...).
- Ability To pursue doctoral studies in Tunisia or abroad.

## PARTNERSHIP & INTERNATIONAL ACTIVITIES

ESAT signed several partnership agreements with international institutions. Cooperation are intend to develop student mobility, teaching staff mobil and exchange of experiences, giving a dimension the international level of the University.

ESAT has established since its creation a close link with partners through framework agreements that are intended to:

- The exchange of experience and expertise in the field of education, pedagogy and administration.
- Greater openness and visibility of the ESAT.
- The realization of joint research projects.
- The organization of scientific conferences, symposia, forums and seminars.
- The exchange of knowledge, documentation and publications.
- The creation of a common program in order to deliver dual degrees.
- In addition to local institutions, ESAT is linked to foreign universities by similar agreements for scientific cooperation.



**Partnership Lubjana University, Slovenia**



**Official visit SHENYANG-CHINA 2014**

# International Students Mobility



Exchange student at Easy school-MALTE



Exchange student at Lubjana University-SLOVENIA



ESAT University Ceremony : Partnership with several organizations from different countries



Exchange student at Shenyang Aerospace University China

## Registration process

The Admission Committee gives serious consideration to such qualities as motivation, curiosity, energy, leadership ability, and distinctive talents.

We hope to find students who have made significant contributions to their school or community in some way.

We do not value one kind of extracurricular activity over another; in the long run, a student's depth of commitment to whatever they have chosen to pursue is more important to us than the length of their activity list.

### Conditions of Admission:

- Candidacy to the preparatory program is limited to student passing the final examination in secondary education with success and already have the BAC, S.A.T, or equivalent diploma.
- Candidate to the engineering program: need to submit a full application.

### Chronological Steps

- Download or Request an application form by email, by Fax.
- Full application package sent to the University
- Final decision by the committee sent to the student
- Final Registration by the student
- Entrance

Register online

[www.esat.ens.tn](http://www.esat.ens.tn)



# INTERNATIONAL PARTNERSHIP

Scholarship and Internship: (CHINA, FRANCE, CANADA, SLOVENIA, GERMANY, SOUTH KOREA)

## AIRLINES AND AERONAUTICAL MANUFACTURER



## PARTNERS GEOMATICS



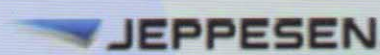
## AUTOMOTIVE COMPANY

Ben Jemaa Motors SA, SSA Tunisie  
KIA, Tunisia

## ACADEMIC INSTITUTIONS



University of Ljubljana



the ISTAT foundation



Cranfield UNIVERSITY

ESAT MEMBER OF ICAO



INTERNATIONAL CIVIL AVIATION ORGANIZATION  
A United Nations Specialized Agency

WEBSITE

[www.esat.ens.tn](http://www.esat.ens.tn)

## CONTACT

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