Allier l'intelligence et l'innovation a toujours été au cœur de notre action.
Ce n'est pas un hasard si le Conseil général est depuis le début des années 90 le premier partenaire du développement de l'Université. Plus de 100 millions d'euros auront été investis par le Département pour permettre à Poitiers de figurer parmi les grandes Universités Européennes.
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Map (Futuroscope area)
Dear students,

This brochure is your guide to help you every step of the way to France.

You will find enclosed all the information about administrative procedures as well as the engineering training or the cultural, sports and associative activities around the school.

Thanks for choosing ISAE-ENSMA!

See you soon!

The International Relations Office

---

Welcome to Poitiers and Futuroscope!

Capital of Poitou-Charentes, Poitiers counts, within its agglomeration of 110,000 inhabitants, nearly 30,000 students and more than 1,000 researchers.

Since 1985 its expansion has relied on the presentation of new shows, developed each year, ensuring the international fame of the region.

The higher education and research activities are distributed on 3 sites: the campus (East area), the Futuroscope (North area), and downtown.

The tourist assets of Poitiers are also very strong. The fabulous inheritance of this former «cité» with more than 2,000 years of history, is subject to a very innovating development, and appeals more and more tourists.

The vitality of the industrial and tertiary sector, the existence of the majority of the functions of a metropolis in a small town, the quality of the service road in motorway and the TGV make of Poitiers a gravitational economic city.

Vienne, country of the Futuroscope: with nearly 3 million visitors a year, 1,500 employees and several thousand spinoff jobs; Futuroscope has become the main axis for the development of the Vienne département both at the national and regional levels.

The European Park of the Image initiates in 20 rooms a growing number of visitors with the more surprising visual techniques, often of world exclusiveness. The area of formation, which gathers nearly 8% of French public research, opens the teaching to new technologies and gathers a pole of high technology companies.

Built with the will of innovation, answering to the needs to discover and understand, imagine and apprehend our future, Futuroscope relies on the three essential human activities of today: leisure, formation and work.

The Futuroscope, a technological window: symbol of the vitality of the Poitou-Charentes area, Futuroscope is given for mission to make sensitize the large public to the advanced technologies.

Next to its leisure park directed towards the images of tomorrow, the Futuroscope also comprises a surface of formation, including ISAE-ENSMA, and a complex of technological activities of 1200 ha.

---

http://www.poitiers.fr/
http://www.cityvox.fr/guide_poitiers/AccueilVille
http://www.ij-poitou-charentes.org/
http://www.ac-poitiers.fr/

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http://www.cityvox.fr/guide_poitiers/AccueilVille
http://www.ij-poitou-charentes.org/
http://www.ac-poitiers.fr/
2.1. Formation

2.1.1. Introduction

ISAE-ENSMA, created as an ENSI (graduate engineering school) in 1948 and located since 1993 on the site of Futuroscope, closed from Poitiers, has acquired in fifty years a reputation for excellence in the industrial and research work.

ISAE-ENSMA is a leading French Grande Ecole (graduate school in mechanical and aeronautical engineering) in which academic training and research as closely linked. The academic training is recognised by its « research and development » profile and research, clearly identified in the sector « sciences for the engineer », has strong links with the industry and the valorisation.

The school, through its laboratories and engineers, has developed since a long time a strong contractual activity in direction of large companies which in addition hire an important part of our graduate students. The aeronautics and space industries are mainly concerned, and more generally the transport, mechanics and energy industries.

The academic training given at ISAE-ENSMA allows the young graduate engineers to choose jobs in engineering design departments, research and development mainly in the industrial sectors of aeronautical and ground transportation.

The first year is dedicated to a basic scientific training; the second year is centered on the specific disciplines of the engineering profession.

The third year students choose a specification in the ISAE-ENSMA expertise fields.

The curriculum is extensive, covering fields such as: fluid mechanics, aerodynamics, energetics with components in heat transfer, propulsion, combustion and detonation, structure mechanics, materials and industrial computer science.

Our academic training also aims to give to the graduates the autonomy and adaptation abilities necessary to exercise the engineering profession.
The School

2.1.2 Organisation of studies

Extensive fields of competence:
- combining rigorous theoretical training and a thorough technological experience,
- centred on the fields of mechanics and energetics,
- focused on aeronautics and space, ground transportation and energy industries.

A preparation for an engineer’s career to:
- anticipate fast technological developments,
- develop innovation abilities,
- take on the new duties and tasks of the engineer,
- ensure the best integration into the companies.

The development of personal qualities to:
- carry out a professional project,
- learn autonomy and tram work,
- communicate.

Overall teaching scheme

<table>
<thead>
<tr>
<th>COMMON PROGRAM – GENERAL COURSES</th>
<th>1st YEAR</th>
<th>2nd YEAR</th>
<th>3rd YEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientific, technical and liberal studies</td>
<td>Blue-collar internship (1-to-2 months)</td>
<td>Engineering studies formation</td>
<td>Specialized formation</td>
</tr>
<tr>
<td>Junior engineer training (3-to-4 months)</td>
<td></td>
<td></td>
<td>Option Aerodynamics</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Option Energetics</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Option Heat Transfers</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Graduation project (3-to-6 months)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Possibility to study part of the third year abroad</td>
</tr>
<tr>
<td>ISAE-ENSMA ENGINEER DIPLOMA</td>
<td></td>
<td></td>
<td>Ph.D.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Professional life</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Master</td>
</tr>
</tbody>
</table>

ISAE-ENSMA graduates are mainly recruited by large national and international companies (EADS, SNECMA, Airbus, Dassault, Renault, THALES, PSA, FRAMATOME, and so on...) or by associated service providers such as Altran or Teuchos. 60% of graduates work in aeronautics and aerospace, which is in keeping with the wish which most students express when arriving at ISAE-ENSMA. However, thanks to the broad academic training they have received at ISAE-ENSMA, others choose to work in other branches such as mechanical engineering and ground transportation (25%), energy (10%) and industrial engineering.

The school has a clearly identified policy in terms of student exchanges with one third of the ISAE-ENSMA students going abroad for their studies.
### The School

#### First year of academic activities

---

#### SEMESTER 1

<table>
<thead>
<tr>
<th>Course title</th>
<th>Hours</th>
<th>ECTS credits</th>
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<tbody>
<tr>
<td><strong>Module M1-1</strong></td>
<td></td>
<td></td>
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<tr>
<td>Computer science</td>
<td>79h00</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics</td>
<td>36h15</td>
<td>3</td>
</tr>
<tr>
<td>Mechanics of rigid body</td>
<td>27h30</td>
<td>2.5</td>
</tr>
<tr>
<td><strong>Module M1-2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thermal engines thermodynamics</td>
<td>41h30</td>
<td>3</td>
</tr>
<tr>
<td>Solid mechanics</td>
<td>44h00</td>
<td>3.5</td>
</tr>
<tr>
<td><strong>Module M1-3</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Introduction to Embedded Systems</td>
<td>42h00</td>
<td>3</td>
</tr>
<tr>
<td>CAD tools - Study of industrial mechanisms</td>
<td>32h30</td>
<td>1.5</td>
</tr>
<tr>
<td>Physics</td>
<td>41h15</td>
<td>3.5</td>
</tr>
<tr>
<td>Manufacturing and Transport</td>
<td>12h00</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Module M1-4</strong></td>
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<td></td>
</tr>
<tr>
<td>Human economic and social Sciences</td>
<td>12h30</td>
<td>1</td>
</tr>
<tr>
<td>English</td>
<td>35h00</td>
<td>2.5</td>
</tr>
<tr>
<td>Sport (facultative)</td>
<td>35h00</td>
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<td>Second foreign language (facultive)</td>
<td>18h00</td>
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#### SEMESTER 2

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<th>Course title</th>
<th>Hours</th>
<th>ECTS credits</th>
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<tbody>
<tr>
<td><strong>Module M2-1</strong></td>
<td></td>
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</tr>
<tr>
<td>Tensors</td>
<td>17h30</td>
<td>1.5</td>
</tr>
<tr>
<td>Introduction to Fortran and Numerical Methods</td>
<td>19h45</td>
<td>1.5</td>
</tr>
<tr>
<td>Data management and reporting</td>
<td>26h30</td>
<td>2</td>
</tr>
<tr>
<td>Signal processing</td>
<td>30h45</td>
<td>2</td>
</tr>
<tr>
<td><strong>Module M2-2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial Science for the Engineer – Study of industrial systems - CAD</td>
<td>53h15</td>
<td>3</td>
</tr>
<tr>
<td>Stress analysis</td>
<td>36h30</td>
<td>2.5</td>
</tr>
<tr>
<td>Materials science</td>
<td>31h30</td>
<td>2.5</td>
</tr>
<tr>
<td>Manufacturing and Transport</td>
<td>21h00</td>
<td>1</td>
</tr>
<tr>
<td><strong>Module M2-3</strong></td>
<td></td>
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</tr>
<tr>
<td>Fluid mechanics</td>
<td>55h30</td>
<td>3.5</td>
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<td>Flight mechanics</td>
<td>20h00</td>
<td>2</td>
</tr>
<tr>
<td>Project in thermal engines – conduction</td>
<td>18h00</td>
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<tr>
<td>Conduction</td>
<td>20h00</td>
<td>2</td>
</tr>
<tr>
<td><strong>Module M2-4</strong></td>
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</tr>
<tr>
<td>Introduction to corporate organization</td>
<td>12h30</td>
<td>1</td>
</tr>
<tr>
<td>Management</td>
<td>12h00</td>
<td>1</td>
</tr>
<tr>
<td>English</td>
<td>32h30</td>
<td>2.5</td>
</tr>
<tr>
<td>Human economic and social Sciences</td>
<td>12h30</td>
<td>1</td>
</tr>
<tr>
<td>Sport (facultative)</td>
<td>30h00</td>
<td>1.5</td>
</tr>
<tr>
<td>Second foreign language (facultive)</td>
<td>21h00</td>
<td>1.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>470h45</td>
<td>33</td>
</tr>
</tbody>
</table>

---

Blue-collar internship
1- to- 2 months

The descriptions are available at:
2.1 Formation

2.1.1 Introduction

2.1.2 Organisation of studies

2.1.3 The different admission schemes

2.1.4 ECTS (European Credits Transfer System)

2.2 Programs

2.2.1 Main areas of interest

2.2.2 Teaching cycles

---

**Second year of academic activities**

### SEMESTER 3

<table>
<thead>
<tr>
<th>Course title</th>
<th>Hours</th>
<th>ECTS credits</th>
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<tbody>
<tr>
<td>Module M3-1</td>
<td></td>
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<tr>
<td>Scientific Computing</td>
<td>85h30</td>
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<td>Module M3-2</td>
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<tr>
<td>Automatics</td>
<td>40h45</td>
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</tr>
<tr>
<td>Conception of industrial systems – CATIA for Aeronautics</td>
<td>32h30</td>
<td>2</td>
</tr>
<tr>
<td>Module M3-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluid mechanics</td>
<td>40h15</td>
<td>3.5</td>
</tr>
<tr>
<td>Structural mechanics</td>
<td>46h45</td>
<td>4</td>
</tr>
<tr>
<td>Materials science</td>
<td>42h30</td>
<td>3.5</td>
</tr>
<tr>
<td>Radiation</td>
<td>27h45</td>
<td>2</td>
</tr>
<tr>
<td>Module M3-4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional communication</td>
<td>15h00</td>
<td>1</td>
</tr>
<tr>
<td>English</td>
<td>25h00</td>
<td>2</td>
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<tr>
<td>Human economic and social Sciences</td>
<td>12h30</td>
<td>1</td>
</tr>
<tr>
<td>Sport (facultative)</td>
<td>30h00</td>
<td>1.5</td>
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<tr>
<td>Second foreign language (facultative)</td>
<td>16h30</td>
<td>1.5</td>
</tr>
<tr>
<td>Blue-Collar Internship (facultative)</td>
<td>16h30</td>
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<td><strong>Total</strong></td>
<td><strong>415h00</strong></td>
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### SEMESTER 4

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<th>Course title</th>
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<tr>
<td>Module M4-1</td>
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<tr>
<td>Advanced CATIA</td>
<td>9h00</td>
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<tr>
<td>Probabilities</td>
<td>25h00</td>
<td>2.5</td>
</tr>
<tr>
<td>Embedded systems</td>
<td>34h30</td>
<td>3</td>
</tr>
<tr>
<td>Project in Design / Avionics</td>
<td>18h00</td>
<td>1</td>
</tr>
<tr>
<td>Module M4-2</td>
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<td></td>
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<tr>
<td>Gas dynamics*</td>
<td>40h45</td>
<td>4</td>
</tr>
<tr>
<td>Project in aerodynamics / Structures-Materials</td>
<td>18h00</td>
<td>1</td>
</tr>
<tr>
<td>Vibrations – finite elements method**</td>
<td>46h15</td>
<td>4</td>
</tr>
<tr>
<td>Module M4-3</td>
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<td></td>
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<tr>
<td>Applied fluid mechanics</td>
<td>17h30</td>
<td>1.5</td>
</tr>
<tr>
<td>Engines and propulsion systems</td>
<td>35h15</td>
<td>3</td>
</tr>
<tr>
<td>Project in Heat Transfer and Energetics</td>
<td>18h00</td>
<td>1</td>
</tr>
<tr>
<td>Convection</td>
<td>29h00</td>
<td>2.5</td>
</tr>
<tr>
<td>Module M4-4</td>
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<td></td>
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<tr>
<td>Project Management</td>
<td>10h00</td>
<td>1</td>
</tr>
<tr>
<td>English</td>
<td>25h00</td>
<td>2</td>
</tr>
<tr>
<td>Human economic and social Sciences</td>
<td>12h30</td>
<td>1</td>
</tr>
<tr>
<td>Elective course Systems design (2 courses to choose)</td>
<td>25h00</td>
<td>2</td>
</tr>
<tr>
<td>Sport (facultative)</td>
<td>32h30</td>
<td>1.5</td>
</tr>
<tr>
<td>Second foreign language (facultative)</td>
<td>18h00</td>
<td>1.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>414h15</strong></td>
<td><strong>33</strong></td>
</tr>
</tbody>
</table>

* prerequisite: Course of fluid mechanics (module M3-3)

** prerequisite: Course of structures mechanics (module M3-3)

Junior engineer training
3-to-4 months

The descriptions are available at:
## 2.1 Formation

### 2.1.1 Introduction

### 2.1.2 Organisation of studies

### 2.1.3 The different admission schemes

### 2.1.4 ECTS (European Credits Transfer System)

## 2.2 Programs

### 2.2.1 Main areas of interest

### 2.2.2 Teaching cycles

---

### Third year of academic activities

#### SEMESTER 5

<table>
<thead>
<tr>
<th>Course title</th>
<th>Hours</th>
<th>ECTS credits</th>
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<tbody>
<tr>
<td>Blade aerodynamics</td>
<td>30h00</td>
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<tr>
<td>Combustion</td>
<td>30h00</td>
<td>2.5</td>
</tr>
<tr>
<td>Thermal modelling</td>
<td>30h00</td>
<td>2.5</td>
</tr>
<tr>
<td>Turbulence</td>
<td>120h00</td>
<td>5</td>
</tr>
<tr>
<td>Advanced design project—project management</td>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Module M5-1a</th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Aeroacoustics</td>
<td>25h00</td>
<td>2</td>
</tr>
<tr>
<td>Compressible aerodynamics</td>
<td>25h00</td>
<td>2</td>
</tr>
<tr>
<td>Numerical methods for aerodynamics</td>
<td>25h00</td>
<td>2</td>
</tr>
<tr>
<td>Turbomachinery</td>
<td>25h00</td>
<td>2</td>
</tr>
<tr>
<td>Lab works</td>
<td>35h00</td>
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</table>

<table>
<thead>
<tr>
<th>Module M5-2a</th>
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</thead>
<tbody>
<tr>
<td>Elective course # 1</td>
<td>12h30</td>
<td>1</td>
</tr>
<tr>
<td>Elective course # 2</td>
<td>12h30</td>
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</tr>
<tr>
<td>Elective course # 3</td>
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</tr>
<tr>
<td>Elective course # 4</td>
<td>12h30</td>
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</tr>
<tr>
<td>Professional communication</td>
<td>22h30</td>
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</tr>
<tr>
<td>Sport (facultative)</td>
<td>45h00</td>
<td>2</td>
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<tr>
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#### SEMESTER 5

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The descriptions are available at:

### Third year of academic activities

#### SEMESTER 5

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Option Heat Transfer

Option Structures

### Third year of academic activities

#### SEMESTER 5

**Option Advanced Materials**

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<td>Atomic diffusion and applications</td>
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**Module M5-1m**

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**Module M5-3**

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**Option Computer science and Avionics**

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**Graduation project**

3-to-6 months

The descriptions are available at:

### Elective courses for the third year

#### 4 elective course to choose for each option

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<td>Industrial codes for CFD</td>
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<td>Non-destructive testing</td>
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<td>Corrosion of engineering materials</td>
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<td>Creep</td>
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<td>Astrodynamics &amp; orbital propulsion</td>
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#### SEMESTER 6

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<td>Module M6-2</td>
<td>Graduation project (PFE) Report and oral presentation</td>
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2.1.3. The different admission schemes

In 1st year

Through “Concours Communs Polytechniques” (a nationwide highly competitive examination)

Open to all the students in the French « intensive post-secondary 2-year program in Maths » in the following sections: MP (maths and physics), PC (physics and chemistry), PSI (physics and sciences for the engineer), TSI (technology and sciences for the engineer), and PT (physics and technology for the engineer).

For students who have a « DEUG », a 2-year university degree

Through ATS: open to students who have a BTS from ATS preparatory classes.

For more information: Concoux ATS ENSEA – 6 avenue du Ponceau 95014 CERGY-PONTOISE Cedex Tel: (+33) 1 30 73 62 28

Pre-enrolment by Internet ONLY

Admissions according to academic qualifications

⇒ For students who have a university technological diploma (DUT) speciality GMP (Mechanical and Industrial Automation Engineering), GTE (Thermal and Energy Engineering), GIM (Industrial Engineering and Maintenance), GEII (Electrical Engineering and Industrial Computing), SGM (Science and Materials Engineering), MP (Mathematics and Physics).

⇒ For students who have a Bachelor’s degree speciality Mechanics, Mathematics, Applied Mathematics, Physics, Electrotechnics and Automatics.

⇒ For students who have a Bachelor’s degree in “Sciences and Technologies” from the University of Poitiers: more information at: www.supinge.ensma.fr

In 2nd year

Admissions according to academic qualifications

⇒ MS degree or 1st year Master students (specialization: Mechanics, Mechanical Technology, Mechanical Engineering, Materials Engineering and Physics).

Application forms are delivered form May for Bachelors or Ms degrees, and from March for DUT. You have to make a written request, precising your level (DUT, Bachelor or MS degree) at the following address:

⇒ Double degrees

For international students in exchange programs, a special application is required, see the section « Enrolment procedures ».
2.1.4. ECTS
(European Credit Transfer System)

The ECTS, which is part of the European Union educational program Socrates-Erasmus, was developed by the European Community in order to provide common procedures to guarantee academic recognition throughout the European Community.

It provides a way of measuring and comparing learning achievements, and transferring them from one institution to another. The ECTS system is based on the principle of mutual trust and confidence between the participating institutions of higher education.

ECTS is a credit system based on student workload required to complete them. They reflect the quantity of work each course requires in relation to the total quantity of work required to complete a full year of academic study at the institution.

ECTS credits are allocated to courses and are awarded to students who successfully complete those courses by passing the examinations or other assessment.

For more information about ECTS:
http://ec.europa.eu/education/tools/ects_en.htm
2.2. Programs

2.2.1. Main areas of interest

Fluid mechanics and Aerodynamics
The basic concepts are taught as of the first year. The students who wish to deepen their knowledge can follow, in third year, specialized courses: external, internal and numerical aerodynamics and turbulence. The equipment of the school in subsonic and supersonic wind tunnels enable to illustrate the concepts introduced in class.

Materials and Structures
The study of structures and materials, on macroscopic and microscopic scales, starts in first year. More specific subjects are covered (plasticity, damage, laminates, polymers, x-rays...) so that the students familiarize with the modern evaluation methods of the constraints, so much numerical than experimental, used in industry.

Energetics and Heat Transfer
After the thermodynamics of the engines, thermal transfers, combustion and detonics science are covered. All the areas are thus joined together for the entire study of the industrial facilities. The equipment of the school enables to reproduce the phenomena to study them in real size.

Engineering of industrial systems
The technological culture is at the art of the engineer sector and the design-manufacturing process of an industrial product. From practical examples, the offered teaching is based on CAD using 3D modelling software supporting the liaison between different fields (structures calculus, aerodynamics, thermal science...). The aim is to develop synthesis, innovation and open-minded spirit skills towards industry. Technology is taught in 3rd year of studies through engineering design projects.

Management and Liberal Studies
In a spirit of internationalization, the school delivers training in foreign languages necessary for the future engineers. Moreover, sport activities are integrated into the teaching with weekly courses and several university competitions. Finally, the library offer the students the opportunity to work in quiet places, have access to a range of diverse documents and the use of the new communication tools.

Computer Science and Automatics
The study of languages and techniques of scientific and industrial computer science is an important part of the core curriculum. The 3rd year option “Computer Science and Avionics” (software engineering, embedded real-time systems, data engineering, human-machine interaction...) trains engineers specialized in the integration of these new tools in this area of interest.
2.2.2. Teaching cycles

A possibility is offered to the students, in addition to the following formation, to prepare university degrees, together with the University of Poitiers:

- Bachelor degree in Mechanics: in 1st year
- MS degree in Mechanics: in 2nd year
- Master: in 3rd year

Master “Air and Ground Transportation”

Objectives: this postgraduate degree course aims to provide students with advanced knowledge in aerodynamics, energetics, heat transfer, and mechanics of structures and materials and the ability to analyse and resolve complex problems, whether they are experimental, analytical or numerical.

**Head of program:**

**Fabrice Brémand** (LMS-SP2MI)  
fabrice.bremand@lms.univ-poitiers.fr

ISAE-ENSMA supervisors:

- Malick BA (Aérodynamique)  
  malick.ba@ensma.fr
- Djamel Karmed (Combustion)  
  djamel.karmed@ensma.fr
- Matthieu FENOT (Thermal)  
  matthieu.fenot@ensma.fr
- Damien Halm (Structures)  
  damien.halm@ensma.fr

Master “High Performance Materials”

Objectives: this postgraduate degree course aims to train young researchers in the field of Materials Science. Students can choose between two further specialisations: Physics and chemistry of high performance materials Engineering of high performance materials.

- Materials Physics (PM)
- Materials Mechanics (MM)
- Surfaces, Interfaces and Nanostructures (SIN)

**Head of program:** Jean-François Barbot (LMP-SP2MI)  
jean.francois-barbot@univ-poitiers.fr

ISAE-ENSMA supervisor: Gilbert Hénaff (LMPM)  
gilbert.henaff@ensma.fr

Master “Computer Science”

Objectives: the aim is to train students in computer science research, through computer science research, with special emphasis on real time systems, databases, human/machine interface, software engineering.

**Head of program:** Michel Mériaux (SIC-SP2MI)  
michel.meriaux@univ-poitiers.fr

ISAE-ENSMA supervisor: Mickaël Richard (LIAS)  
mickael.richard@ensma.fr
2.1 Formation

2.1.1 Introduction

This training is specialized in transportation (mainly aeronautical) and energy. The aim is to give students, at the end of the two-year program, a strong theoretical, numerical and experimental knowledge on energetics for turbine engines and on materials for high temperatures.

Students will work on industry’s current issues thanks to projects including in the program and thanks to the final project that could be carried out within partner companies or laboratories for their Master Thesis.

2.1.2 Organisation of studies

2.1.3 The different admission schemes

2.1.4 ECTS (European Credits Transfer System)

2.2 Programs

2.2.1 Main areas of interest

2.2.2 Teaching cycles

Master of Science in Aeronautical Mechanics and Energetics (AME)

Introduction

This training is specialized in transportation (mainly aeronautical) and energy. The aim is to give students, at the end of the two-year program, a strong theoretical, numerical and experimental knowledge on energetics for turbine engines and on materials for high temperatures.

Students will work on industry’s current issues thanks to projects including in the program and thanks to the final project that could be carried out within partner companies or laboratories for their Master Thesis.

Admission requirements

The MSc AME degree is open to students with a Bachelor’s degree in aerospace, mechanical or mechatronics engineering.

Program Director: Professor Julien SOTTON  julien.sotton@isae-ensma.fr
Tel: +33 5 49 49 81 61

Master of Science in Turbulence

Presentation

Turbulence presents one of the greatest challenges to the advancement of both science and engineering. Whether the primary interest is the environment, energy, industrial processes, or aero/ hydrodynamics, turbulent processes often dominate. In the absence of a complete theoretical understanding or general turbulence models, the engineering practice of dealing with turbulence is as much an art as it is science or engineering. The programme is designed to introduce students to both the science and the art of turbulence at an early point in their studies. This knowledge can then be applied immediately to the large number of disciplines where turbulence occurs, including (but not limited to) environmental processes, combustion, engine technology, heat transfer, energy production, vehicle design, and most fluid/thermal/chemical systems.

The fundamental concepts of turbulence theory are taught together with advanced, state-of-the-art computational and experimental methodologies, so the student not only gains an understanding of all three, but learns how they can be used together. The goal is to prepare students to directly apply the acquired skills and knowledge to a wide variety of scientific and engineering disciplines wherever turbulence occurs. The elective courses and project offer opportunities to explore areas of applicability and for specialization. The majority of graduates are expected to move to other disciplines for employment or further study.

Course description

The International Master’s Programme in Turbulence is jointly offered in English. It consists of four quarters of courses followed by a thesis project. Upon completion of the programme students are awarded the Master of Science (MSc) degree.

Program Directors : Professor Michel STANISLAS, PhD, Ecole Centrale de Lille
Tél. : (+33) 3 20 33 71 70  Mail : michel.stanislas@ec-lille.fr

Professeur Laurent BRIZZI, PhD, ENSI Poitiers
Tél. : (+33) 5 49 45 38 27  Mail : laurent.brizzi@lea-univ-poitiers.fr

Program Coordinator : Assist. Prof. Patrick DUPONT, PhD, Ecole Centrale de Lille
Mail : imp -turbulence@ec-lille.fr

International Relations Office : Aurélie COTILLON, ISAE-ENSMA
Tél. : (+33) 5 49 49 80 16  Mail : aurelie.cotillon@ensma.fr
3.1. Main research fields

More than 17,000 m² of the ISAE-ENSMA surface is dedicated to research activities. This essential mission is oriented towards the different components of the ISAE-ENSMA engineering training.

PPRIME Institute

Research and Material Engineering, Mechanic and Energetic for Transports, Energy and Environment.

Created on January 1st 2010, the P’ Institute is the result of the merging of six Laboratoires of Physics and Engineering Sciences, all recognized CNRS, University of Poitiers and/or ENSMA.

- Combustion and Detonic Laboratory (LCD, UPR 9028)
- Aerodynamic Studies Laboratory (LEA, UMR 6609)
- Thermal Studies Laboratory (LET, UMR 6608)
- Materials Studies Laboratory (PhyMat, UMR 6630)
- Mechanics and Materials Physic Laboratory (LMPM, UMR 6617)
- Solid Mechanics Laboratory (LMS, UMR 6610)

The institute counts overall 544 persons including 225 researchers, 109 permanent staff, 170 doctoral candidates and 40 post-doctoral candidates and contractual engineers.

The laboratories, in partnership with the CNRS and the University of Poitiers are:

D2—“Combustion” Department
- Research areas: flame phenomena, detonation in gases and condensed mediums, heterogeneous combustion, diphasic flows, shock waves in solids

D2—“Thermal” Department
- Research areas: convection, transfers in heterogeneous mediums, coupled transfers in semi-transparent mediums, thermal metrology and opposite methods, numerical heat transfer and modelling

D1—“Materials” Department
- Research areas: damages, composite materials, metallic fatigue, solid polymers deformation and rupture, mechanical spectrometry

The Applied Computer Science and Automatic Control for Systems Laboratory (LIAS)
- Research areas: data engineering, real time systems, human-machine interaction

Thanks to long standing close industrial relations and strong connections with prestigious schools and universities in France, in Europe and throughout the world, our school is ready to take up the big challenges of the next decades in terms of innovation and technological changes and train the engineers of the future who will be able to take responsibilities and to bring performance to the companies of tomorrow.

For more information about our laboratories:
3.2 Laboratories and research teams

D2—”Fluids” Department

The laboratory specializes in fluid mechanics (gases and liquids) at low and very high velocities (super and hypersonic flows). In addition to numerical and experimental studies, research is also done on new theories. The laboratory tackles issues related to aerodynamics, turbulence, flow control and aeroacoustics, which apply to terrestrial, aeronautical and aerospace transport systems. The laboratory is a key participant in a series of French and Pan-European research programs supported by the industries mentioned above. At this laboratory, wind tunnel tests are conducted and other specific test beds are set up for research.

D2— ”Combustion ” Department

The mission of the laboratory is to conduct basic research on combustion phenomena (flames, reactive turbulent flows, detonations and combustion chemistry), stock and transfers in porous the laboratory develops fields of propulsion, the facilities and industrial environmental laboratory has forged industry and large energy and defence

D2—”Thermal” Department

The purpose of the laboratory is to understand, predict and measure the heat transfers –by convection, conduction or radiation– in solids, fluids, heterogeneous and biphasic media. The main research specialities of the laboratory are natural and mixed convection, aerothermics, and radiation. A novel subject, micro and nano heat transfers, is being researched too. The laboratory also specializes in applied research for sectors such as the aeronautical, aerospace, transport, food-processing, energy and environmental industries. Thermal sciences are increasingly concerned with the physics of coupled transfers and interact with other disciplines such as electromagnetism, mechanics, chemistry, biomechanics and nanotechnologies and the many implications they have in numerous systems.
D1—"Materials” Department

The purpose of the laboratory is to conduct fundamental and applied research into the behaviour and the durability of materials tested at different temperatures, in different environments and under different stresses. The emphasis is particularly placed on studying the interaction between the mechanical behaviour, the microstructures and the fracture mechanics of specific materials as well as on setting up behavioural laws and performing structural analyses. Different types and advanced materials (metal alloys, polymers, laminated, ceramics) are studied in their environment by diversified tests (fatigue, flow, heat ageing, shock absorption) coupled with observation methods at different scales and through analytical and numerical modelling. French and Pan-European research programs are developed on these topics in partnership with the transport industries (aeronautical, ground and maritime transport) and the energy sector.

The Applied Computer Science and Automatic Control for Systems Laboratory (LIAS)

All the activities of the LIAS relate to:

- data engineering: data specification, Express language and metadesccriptions, parametric geometric and feature-based modelling, data/document integration;

- analysis and modelling of real-time applications: off-line and on-line validation of real-time applications with strict constraints in single processor and distributed environment;

- modelling of human-computer interaction and programming by demonstration: specification, HCI validation and control, interactive program design.

The laboratory focuses on two major research domains: the applications of formal methods and the development of interactive graphic tools.
International students can go through different exchange programs to come to ISAE-ENSMA and spend half or full year.

Students can both attend classes (courses are only taught in French) and/or carry out a research project within one of the 5 laboratories (either in French or English).

Enrolment procedures may be different according to the exchange, please follow the instructions.

The different existing programs are: the Erasmus/Socrates program, the CREPUQ program, the ARFITEC program, the BRAFITEC program, the PFIEV program. Besides, ISAE-ENSMA has also bilateral university partnerships.

4.1. Enrolment procedures

4.1.1. For students taking part in an exchange program

In the framework of a student exchange program, the home university selects the students wishing to come for a period of study or a project in a laboratory. The student has to provide all the necessary information:

- Curriculum Vitae,
- An up-to-date academic transcript (document with your results at university to this date),
- Cover letter,
- The student application form (for Erasmus students),
- The learning agreement (for Erasmus students).

There are no tuition fees for students taking part in an exchange program.

Application deadlines:

1\textsuperscript{st} semester: May 1\textsuperscript{st}
2\textsuperscript{nd} semester: October 1\textsuperscript{st}

4.1.2. For other students

Registration fees are 610 €.

For any information, please contact:

Julien Sotton, Professor, Academic Advisor for International Relations
Tel: (+33) 5 49 49 81 61
julien.sotton@ensma.fr

Aurélie Cotillon, Head of International Relations Service
Tel: (+33) 5 49 49 80 16
Fax: (+33) 5 49 49 80 06
aurelie.cotillon@ensma.fr
4.1 Enrolment procedures

4.1.1 For students taking part in an exchange program

4.1.2 For other students

4.2 Before leaving home

For *European* students

- the ISAE-ENSMA application forms for Erasmus students
- a copy of your passport or your identity card
- a copy of your student card from your home university
- 2 passport photographs
- a copy of your highest diploma
- an up-to-date academic transcript (document with your results at university to this date)
- A complete copy of birth certificate (dated less than 3 months) translated into French by an officially-approved translator
- the European Health Insurance Card (CEAM)

For *non-European* students

- the ISAE-ENSMA application forms for non-European students
- a copy of your passport
- a copy of your residence permit (when possible)
- a copy of your student card from your home university
- 2 passport photographs
- a copy of your highest diploma
- an up-to-date academic transcript (document with your results at university to this date)
- A complete copy of birth certificate (dated less than 3 months) translated into French by an officially-approved translator
- your parents’ certification that you have sufficient financial resources
- a proof of social security cover (compulsory)

*If you don’t have any private Health Cover covering you for your whole stay at ISAE-ENSMA, you will have to pay about €200,- to get one the day you will register (mandatory for the registration)*
5.1 Visa

The application for a French visa must be registered with the French Embassy in your country of residence (there is no way of setting things once your are actually in France).

A visa is not required for citizens of the European Union (Austria, Belgium, the Czech Republic, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, the United-Kingdom, Slovakia, Slovenia, Sweden) or European Economic Area Countries. (Iceland, Liechtenstein, Switzerland and Norway).

The delivery deadline of the visa varies between 1 and 3 weeks, depending on the nationality of the applicant. The date of withdrawal of the visa is specified on the passport at the time of the application. Deadlines are to be envisaged for visas of particular type: studies, long stay, DOM-TOM, visa for commercial or industrial activity.

Useful recommendations:

- for the deposit of the file, you have to avoid the busiest periods (synonymous with very long waiting),
- the visa can be required up to 3 months before the date of the departure,
- you have to provide yourself with a photocopy of all originals which must be presented,
- with the withdrawal of the visa, you must envisage a possible cost.

Students who wish to stay more than 3 months in France have to apply for a long-term visa. The application for a long-term visa is composed by a form called “demande d’attestation OFII”. You must fill out the first part of the document and provide it to the Consulate with the whole application “demande de visa”. This form can be downloaded at this link.

When the Consulate issues the long-term visa, you will receive at the same time the form “demande d’attestation OFII” stamped as well as a notice.

For more information:


- consultation of the directory of the Embassies of France abroad,
- consultation of the procedure of request for visa (which depends on countries,
- consultation of costs (which depends of the duration of the stay).
5.2. The validation of the long-term visa (VLS)

It is impossible to request a long stay visa once in France, it can only be obtained from a General French Consulate or the French Embassy in the country of origin.

At your arrival in France, you will have to make your passport stamped by the police.

After your arrival, you have 3 months to send the « demande d’attestation OFII » at the Direction Territoriale de l’OFII in Poitiers (by registered letter with a form for acknowledgment receipt), and provide the copies of your passport (identity, entrance stamp and visa).

The visa « validated » by OFII offers the same rights that the former residence permit.

For this first step, you do not have to go to the Prefecture neither to OFII.

OFII will give you an appointment for the « validation » of your visa. You must provide the following documents:

- your passport,
- a proof of domicile (receipt for rent, rental contract…),
- a full-face photograph,
- a medical certificate issued by the doctor approved by OFII (see « The medical visit » page 24),
- OFII stamps (ANAEM or OMI) corresponding to the amount of the tax due for the issue of a residence permit (55€).

For more information: http://www.ofii.fr/
The medical examination

It is compulsory for the validation of the long-term visa.

After having sent the form to OFII, you will receive a notification for a medical examination and a pulmonary radiography.

This radiography has to be made at Hôpital de la Milétrie.

For more information:

5.3. Le CROUS and le CNOUS

The National Centre of the University and School Œuvres (CNOUS), created by the law of April 16, 1955, is a publicly-owned establishment in administrative matter equipped with the civil personality and financial autonomy. It is placed under the supervision of the Ministry of Youth, National Education and Research. The CNOUS and the CROUS have the role:

- to improve and facilitate the living and working conditions of the 2 million students who attend the higher educational establishments in France,
- to accommodate the international students and to support mobility in Europe.

In France, the system of social assistance to the students uses many actors (State, local communities) among whom the university play a significant role.

The main services areas of the student life are: restoration, housing, scholarships and social assistance, culture, employment and part-time jobs, the international opening, stay abroad.

5.7 The TV license fee

5.8 The tax of dwelling
5.4. Student health cover (Social Security)

Medical care in France is not free, and most consultation fees must be paid at the time of the visit. However, the social security system or insurance carrier will reimburse fees paid according to policy arrangements. Students from states of the European Union and/or the European Economic Area can get a CEAM card form to be completed by his or her social security organisation in order to show proof of having basic health coverage.

Students from Quebec have to provide themselves with the SE 401-Q form (or 102b). Students from other countries must join the French students social security system.

Non-european students:

The LMDE thought out for foreign students a health coverage called « couverture étudiant étrangers » which enables the refund of benefits in France.

Erasmus students:

Are concerned students registered in a University of a Member State and accommodated in a University or French Higher Educational establishment. The CEAM exempts you to adhere to the French students’ mode, and allow you to make you refund many medical or pharmaceutical expenses incurred in France. It is thus recommended to contract a mobility insurance of type « Europ’Assistance ».

University Preventive Medicine

Consulations in the field of gynecology/contraception are without costs. Besides, a student welfare officer comes once a month at ENSMA (during the academic year).

Off campus consultations

In the area of private medicine, students are free to choose their own physician. The MGEN Centre (Mutuelle Générale de l’Education Nationale) provides dentists, general doctors and specialists, x-ray, lab and so on … The fees are subsidized and therefore maximum reimbursement is possible. However, walk-in or urgent appointments are difficult to get.

Centre MGEN
17 rue Jean Richard Bloch
86000 Poitiers
Tel: 3676 (cost of a local call from a landline, excluding the operator cost)
www.mgen.fr
5.5. Insurance

The following insurance coverage are mandatory:

- Renter’s insurance for all students
- Auto insurance for those who drive a privately owned vehicle in France
- Civil liability insurance (third party liability coverage for material and bodily harm)
- Work and accident insurance for voluntary internships with companies, organisations or institutions.

These insurance plans can be obtained from student mutual associations such as MNEF or MEP, as well as from private insurance companies offering international coverage.

5.6. Opening of a bank account

Open a bank account gives you right, for certain banks, with civil responsibility insurance and a housing insurance.

Required documents:

- a passport (copy of the pages with your identity, the date and the visa), or an identity card for students of the U.E.,
- a proof of residence (rent receipt),
- a registration certificate at ISAE-ENSMA (Erasmus-Socrates or other programs)

Some precise details:

Grant–holders or students receiving benefits have to open a French bank account. In general, a minimum deposit is necessary to open an account and the amount varies from a bank to another. There are many automatic teller machines which accept the international credit cards.

**Commission fees exist for the treatment of foreign cheques and there is a 30 days maximum time before the account is credited. Be careful and get information in order to avoid all problems.**

Withdrawal or payment by credit card are subjected to get important commission fees from the banks.
5.7 The TV license fee

If you have a television, you are subjected to the payment of the royalty. You must pay it if you have a television in a permanent way, even if this one is lent or rent.

Where to pay the TV licence fee? With the treasury indicated on your income tax form (at the same time as the tax of dwelling).

5.8. The tax of dwelling

You must pay this tax if you are in a housing of which you have the private use, i.e.:

- a housing, even occupied with several people, located in a building or a residence managed by a private organisation,
- a housing, event occupied by several people, in a private owner, if it is independent from the house of the owner,
- a flat located in a building belonging to an HLM organisation, even if this housing were allotted to you by the CROUS.

You do not pay this tax if you occupy a housing or a room, in a private residence or university residence, upon the condition that the management of the whole residence is completely ensured by the CROUS.

Where to pay the TV licence fee and the tax of dwelling?

<table>
<thead>
<tr>
<th>Tax offices</th>
<th>Tax office of Poitiers (North)</th>
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<tbody>
<tr>
<td></td>
<td>Tax office of Poitiers (South)</td>
</tr>
<tr>
<td></td>
<td>15 rue de Slovénie, BP 565</td>
</tr>
<tr>
<td></td>
<td>86021 Poitiers Cedex</td>
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<tr>
<td></td>
<td>Tel: 05 49 38 24 00</td>
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</tbody>
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<table>
<thead>
<tr>
<th>For the students living in Poitiers</th>
<th>At the treasury of Poitiers</th>
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<tbody>
<tr>
<td></td>
<td>16 place Coïmbra</td>
</tr>
<tr>
<td></td>
<td>86000 Poitiers</td>
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<td>Tel: 05 49 38 13 00</td>
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<tr>
<th>For the students living in Chasseneuil du Poitou and Jaunay Clan</th>
<th>At the treasury of Saint-Georges-Les-Baillargeaux</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>18 rue Fernand Guérin</td>
</tr>
<tr>
<td></td>
<td>86130 Saint-Georges-Les-Baillargeaux</td>
</tr>
<tr>
<td></td>
<td>Tel: 05 49 52 81 01</td>
</tr>
</tbody>
</table>

Useful websites:

6.1 Getting to Futuroscope

ISAE-ENSMA address is the following (see the map in appendix):

Téléport 2
1 avenue Clément Ader - BP 40109
86961 Futuroscope Chasseneuil Cedex
Tel: (+33) 5 49 49 80 00
Fax: (+33) 5 49 49 80 80
http://www.ensma.fr/

ISAE-ENSMA address is the following (see the map in appendix):

Téléport 2
1 avenue Clément Ader - BP 40109
86961 Futuroscope Chasseneuil Cedex
Tel: (+33) 5 49 49 80 00
Fax: (+33) 5 49 49 80 80
http://www.ensma.fr/

You can take a train directly at the Charles de Gaulle (CDG) airport, at the Terminal 2 (a free shuttle is available to go there). You can stop at the Futuroscope train station or at the Poitiers train station.

If there is no train available from the airport, you have to go to the Montparnasse train station (get the RER B up to Châtelet les Halles and get the metro # 4 up to Montparnasse). The ticket price is about 10 € and is valid for RER and metro trips.

The train ticket costs about 40 €. The trip lasts about 1h30. You can have benefit of discounts by buying the 12-25 card (about 50 €).

The Futuroscope station is near the school whereas the Poitiers station is located at 45 minutes by bus. In both cases, the bus # 1 will stop in front of ISAE-ENSMA (bus stop station “Universités”).

The Eurolines company allow you to come to Poitiers at the beginning from several European cities. The bus will stop at the Poitiers station. Then you will have to take the bus # 1 to ISAE-ENSMA (bus stop station «Universités »).

Poitiers is on the axis Paris-Bordeaux (National Road (N10) and Motorway A10, exit 28). If you take to motorway A10: toll 34.60€ approximately.

Access plan if you arrive by car:
6.1 Getting to Futuroscope

6.2 Practical information for finding accommodation

6.3 Restaurants and cafeterias

6.4 Job opportunities

6.5 Where and how find a job

6.6 French language courses for international students

6.7 Multiservice student card

6.8 Culture card

6.9 Useful addresses

How to move in Poitiers:

You can rent a bike « CAP VELO CAMPUS », for 9€/month (rent for a day or a month; renewable contract).
The Poitiers Township Committee make available more than 400 hybrid bikes.

Required documents:
- copy of identity card or passport,
- copy of student card,
- a RIB for the deposit

Allo Vélo
Tel: (+33) 5 49 52 36 36
or (+33) 6 82 66 88 42

It’s the best means of transport.

The bus line # 1 drops you off downtown Poitiers. Time information is indicated at the bus stop, and you can also find them on the Vitalis website.

Bus tickets cost 1.30 € each and can be bought directly into the bus. This ticket can be used twice for a maximum duration of 1h.

It is possible to buy a card for the whole year:

Pass Jeune (for less than twenty-six-years-old students at the time of the purchase of the card).

This Pass costs 211.90 € and is valid during all the academic year. It is a personal card that allows unlimited trips in all the lines of the bus network.

You need an identity card and a photograph to buy the Pass.

For occasional users, books of tickets are available:

Tickets DUO
The book of 5 tickets costs 5.40 € (full-fare ticket).

Each ticket can be used twice for a maximum duration of 1h.

Tickets PLUS 7 days
At the price of 12.80 €, enables unlimited trips on all the bus lines within 7 consecutive days.

For further information: +33 5 49 44 66 88

See on the link to know the sales outlets.

Informations Pass Jeune:
http://www.vitalis-poitiers.fr/poitiers/Tarifs2/Voyageurs-reguliers/PASS-JEUNE

Informations Carnet de 5 tickets:
http://www.vitalis-poitiers.fr/poitiers/Tarifs2/Voyageurs-occasionnels/Le-carnet-de-tickets

Informations Ticket PLUS :
http://www.vitalis-poitiers.fr/poitiers/Tarifs2/Voyageurs-occasionnels/Le-ticket-plus-7-jours
6.2 Practical information for finding accommodation

The majority of the students can be given a financial aid granted by the C.A.F. (Caisse d’Allocations Familiales), called APL, intended to cover their rent partially (around 130€ /month). In order to obtain this assistance, it is necessary to be titular of a leasing agreement (it has to be your main residence). The assistance for housing is calculated according to the resources of the student.

A housing insurance is required for all types of accommodation (see § 5.5 for more details).

**Necessary documents for application:**

- a copy of your identity card (valid) or passport,
- a copy of the residence permit (for non-European students),
- a bank account number (it is recommended to open a bank account to deal with administrative affairs).

You are grant-holder of the French government or your government managed by the CROUS: your housing is ensured by the CROUS at your arrival.

**CROUS**

Contact Magalie FOUREL
15, rue Guillaume VII le Troubadour
86 000 POITIERS
(+33) 5 49 60 88 15
Magali.fourel@ac-poitiers.fr
crous-logement@ac-poitiers.fr

CROUS:
www.crous-poitiers.fr
**Practical tips**

6.1 Getting to Futuroscope

6.2 Practical information for finding accommodation

6.3 Restaurants and cafeterias

6.4 Job opportunities

6.5 Where and how find a job

6.6 French language courses for international students

6.7 Multiservice student card

6.8 Culture card

6.9 Useful addresses

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**Residence Gémini**
8 avenue Blaise Pascal
BP 90176 - Téléport 2
86960 Futuroscope/Chasseneuil
Tel : (+33) 5 49 49 85 02
Fax : (+33) 5 49 49 85 10
residence.gemini@crous-poitiers.fr

This residence is very close to ISAE-ENSMA (2 minutes by foot).

The offered accommodation is:
- T1 (one person): 25m², from 320€/month
- Duplex (one person): 45m², from 523€/month
- T2 (2 persons) 45m², from 478€/mois
- T3 (3 persons) 75m², from 691€/mois

The price includes water, electricity and heating costs.

Deposit for a T1: 228€ / for a T2: 201€.

Equipment: fridge, kitchenette, hot plates, shower, basin, WC, a bed, a desk, a chair, TV cable.

Additional services: underground car park (16€/month), laundry on 2nd floor.

The number of available accommodation is limited, you have to book your room as soon as possible.

The rooms are not provided with kitchen utensils, (plates, dishes, cutlery, glasses…), microwave oven, household and bathroom linen (sheet, blanket, duvet, pillow, towels…) … and no free WiFi access.
6.1 Getting to Futuroscope

6.2 Practical information for finding accommodation

6.3 Restaurants and cafeterias

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6.8 Culture card

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Centre de vie
20 Rue du Belvédère
86 130 Jaunay Clan
Tel : (+33) 5 49 49 85 02
Fax : (+33) 5 49 49 85 10
residence.centredevie@crous-poitiers.fr

It is located 20 minutes by foot from the school or 5 minutes by car.

The offered accommodation is:
- T1 (for one person): 35m², from 356€ /month
- T2 (for two persons): 64m², from 563€ /month

The price includes water, electricity and heating costs.

Equipment: fully equipped kitchenette, WC, room with table and chairs, a bedroom, a bathroom (basin, shower).

Additional services: laundry, car park, WIFI.

The number of available accommodation is limited, you have to book your room as soon as possible.

The rooms are not provided with kitchen utensils, (plates, dishes, cutlery, glasses...), microwave oven, household and bathroom linen (sheet, blanket, duvet, pillow, towels...).
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Les Estudios
16, avenue du Parc du Futur
86130 Jaunay-Clan
Tel: (+33) 5 49 88 07 01
actual-immobilier@wanadoo.fr

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It is located 20 minutes by foot from the school or 5 minutes by car.

The offered accommodation is:
- studios: from 18m² to 27m², 300€ /month

The price includes water and maintenance of common areas costs.

Equipment: kitchenette with hot plates, fridge, sink, microwave over, WC, bed, desk, bedside table, chairs, some cutlery, plates, glasses… The rent of sheets, blankets… might be possible for short duration stays (from 1 week to 6 months).

Additional services: mechanical ventilation, entry phone, telephone jack, aerial, laundry

1 month deposit or co-surety.

The number of available accommodation is limited, you have to book your room as soon as possible.

The rooms are not provided with kitchen utensils, (plates, dishes, cutlery, glasses…), household and bathroom linen (sheet, blanket, duvet, pillow, towels…)...
6.2 Practical information for finding accommodation

Residences Altaïr, Pégase, Morphée
Contact Habitat 86
14, boulevard des frères Lumière
Résidence Altaïr, Entrée A
Tél. (0) 5 49 18 55 65
Fax: (+33) 5 49 49 89 47
Téléport 2
86360 Chasseneuil du Poitou
www.habitat86.fr futuroscope@habitat86.fr

These residences are very close to ISAE-ENSMA (2 minutes by foot).

The offered accommodation is:
- T1 (one person): from 20m² to 40m², from 225€ to 350€/month (advance for water consumption and common charges included. Electricity and heating costs extra.)
- T2 (two persons): from 40m² to 60m², from 336€ to 463€/month (advance for water consumption and common charges included. Electricity and heating costs extra.)
- T3 (three persons): from 70m² to 91m², from 430€ to 575€/month (advance for water consumption and common charges included. Electricity and heating costs extra.)

Equipment: sink, bath, basin, WC
The rooms are not equipped, the studios and some of the T2 and T3 have a kitchenette with 2 hot plates. Only the studios in the residence Pégase are equipped with Top Refrigerators.

Additional services: underground car park (21.60€ to 23€ /month), elevator. Unlimited high-speed Internet access marketed by the OPTLINE company from 15€/month.

The application is made by specific file. Non-European students have to provide a residence permit valid for at least 3 months.

3 months notice / 1 month deposit / the rent is paid the following month

The rooms are not provided with kitchen utensils, (plates, dishes, cutlery, glasses…), microwave oven, household and bathroom linen (sheet, blanket, duvet, pillow, towels…)...
6.1 Venir au Futuroscope

6.2 Trouver un logement

6.3 Restaurants et cafétérias

6.4 Jobs étudiants

6.5 Où et comment trouver du travail

6.6 Cours de français pour étudiants internationaux

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**Residence Eolia (Futuroscope area)**

Rue René Descartes – Téléport 3

86961 Futuroscope

Tel: (+33) 5 49 88 07 01

Fax (+33) 5 49 88 07 06

actuel-immobilier@wanadoo.fr

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The rooms are not provided with kitchen utensils, (plates, dishes, cutlery, glasses…), microwave oven, household and bathroom linen (sheet, blanket, duvet, pillow, towels…).

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*Equipped or non-equipped T2 from 366€/ month CI*

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It is located 10 minutes by foot from the school or 2 minutes by car.

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The offered accommodation is:

- Studios, T1 or T1 bis equipped or non-equipped: from 19 m² to 21 m², from 290 €/month (charges included)

- T2 equipped or non-equipped: from 35m² to 38 m², from 366 €/month (charges included)

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Equipment: equipped kitchenette (sink, fridge, 2 hot plates), bathroom (shower, basin, mirror, locker), WC, cupboard (wardrobe, rack), desk, table, chairs, bed, TV, lockers; some cutlery, plates and glasses… The rent of sheets, blankets… might be possible for short duration stays (from 1 week to 6 months).

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Additional services: car park, laundry, elevator, bicycle storage, WIFI.

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The contracts are firmed for a year (except for some flats that can be rented for a month). The rent for a short duration (from 1 week to 3 months) might be possible.

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1 month deposit (at arrival) and a co-surety is required for people who rent a studio between 6 months and a year.

1 month notice for equipped studios, 3 months notice for non-equipped studios.

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The rooms are not provided with kitchen utensils, (plates, dishes, cutlery, glasses…), microwave oven, household and bathroom linen (sheet, blanket, duvet, pillow, towels…)...
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**Balladins**

Site de Chalembert  
Rue Marie Curie  
86130 Jaunay Clan  
Tel : (+33) 5 49 52 18 18  
Fax : (+33) 5 49 52 39 72  
poitiers@balladins.eu  
https://www.balladins.com/

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It is located 30 minutes by foot from the school or 2 minutes by car.

One type of accommodation is offered:

- studio with kitchenette: 25m², 400€/month, charges included (water, electricity and heating costs).

Equipment of the studios: sink, hot plates, fridge, 2 bathrooms (WC, shower, basin), a double bed (with blanket, duvet and pillow), a table and two chairs, a desk, a TV, sofa-bed, lockers.

Outdoor equipment: swimming pool, drink dispenser.

Additional services: room cleaning: 20€; household linen pack (2 sheets, 1 pillowcase, 50 € deposit): 7€; laundry (self-service), toilet tissue: 4€

All the rooms have been renovated in 2011.

The contracts can be firmed for 1 to 6 months renewable the contracts are adapted functions of the demand and the duration of stay.

For a rented-accommodation, a deposit of 400€ is sought and encashed.

There is no notice (but it is advised to inform the residence as soon as possible of your departure).

Possibility to book a room for one night with breakfast service included.

The rooms are not provided with kitchen utensils, (plates, dishes, cutlery, glasses...), microwave oven, household and bathroom linen (sheet, towels...).
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**Les Amandiers**

6 rue du Grand Tillet  
86130 Jaunay Clan

Tel: (+33) 5 49 62 80 40  
Fax: (+33) 5 49 62 86 68  
les-amandiers@wanadoo.fr  
http://www.residencelesamandiers.com/

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It is located 40 minutes by foot from the school or 5 minutes by car.

The offered accommodation is:

- studio: from 25m² to 30m², from 354€ to 370€ /month (charges included)

Equipment: bed (1 person or 2 persons when available), wardrobe, kitchen (lockers, microwave oven, hot plates, hood, fridge, table, chairs), bathroom (basin, bath, WC)

Additional services: swimming pool, laundry, car park, bar, TV (when available)

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The rooms are not provided with kitchen utensils, (plates, dishes, cutlery, glasses...), household and bathroom linen (sheet, blanket, duvet, pillow, towels...)...
The Residence Les Estudines Poitiers Lamartine is located at 50m from the Railway Station, at 10 minutes by foot from the City Center, and local stores.

The offered accommodations are:

- With annual location contract, 1 month deposit, guarantor and home insurance required:
  - Equipped studios 18m² (private bathroom and kitchen): 389€ to 422€/month, with additional costs: TV, electricity.

  **Equipment and services:** convertible sofa, kitchen with fridge, microwave, electric heaters, closets and cupboards, Bathroom with toilets, individual electric meter, bed, table, chairs, desk and lamps. New bathroom linen every 15 days (sheets, towel and bath rug), Wifi, free access to the fitness room, access to the breakfast buffet for 40€/month, laundry (washing and drying machines -3€ chips)

- Without location contract and deposit; no guarantor or home insurance required:
  - City pack (for a stay of 1 month minimum to 7 months maximum): equipped studios for 1/2 persons 18m² (private bathroom and kitchen): 654€/month inclusive rental charges (TV, Wifi, water and electricity).

  **Equipment and services:** convertible sofa, kitchen with fridge, microwave, electric heaters, closets and cupboards, Bathroom with toilets, individual electric meter, bed, table, chairs, desk and lamps. Cleaning every 15 days (no dishwashing), new sheets and towels every 15 days, new bath rug every week, Wifi, free access to the fitness room, access to the breakfast buffet for 40€/month, laundry (washing and drying machines -3€ chips), parking option for 70€/month

If you are interested in a private appartment rental, these links will help you in your search:

- [www.lokaviz.fr](http://www.lokaviz.fr)
- [www.logements.pourlesjeunes.com](http://www.logements.pourlesjeunes.com)
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**Espace Kennedy (temporary accommodation)**

1 avenue J.-F. Kennedy  
86 036 POITIERS  
Tel: (+33) 5 49 47 52 00  
Fax: (+33) 5 49 45 23 15  
http://www.residencekennedy.com/

The rooms are not provided with kitchen utensils, (plates, dishes, cutlery, glasses…), microwave oven, household and bathroom linen (sheet, blanket, duvet, pillow, towels…)

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**Guest Rooms on half-board (lodging with local residents)**

Contact : Mrs. BRILLANT  
Tel : (+33) 6.81.04.60.40  
86 180 BUXEROLLES  
bbrillant@orange.fr

Close to the lodging, you will find shops, a shopping center, a cinema, a swimming-pool, a sports center, a bus stop. It is located 10 minutes by bus from the railway station and the City Center. It is entitled to the APL grant.

- 1 equipped room of 35m² (Under the rafters – Luminous – Bathroom – Toilet – King size bed – Desktop – Dresser– Private TV space) : 480€/month (dinner included from Monday to Friday)

- 1 equipped room of 12m² – (Ground floor– Shared Bath and Toilet – Twin-bedded room – Desktop – Dresser – Wardrobe – TV) : 450€/month(dinner included from Monday to Friday)

At your disposal : Bed sheets– Duvet – Internet WIFI – Fridge – Washing machine

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**Auberge de Jeunesse (temporary accommodation)**

1 allée Roger Tagault  
86000 POITIERS  
Tel: (+33) 5 49 30 09 70  
Fax: (+33) 5 49 30 09 79

It is a temporary accommodation, useful for the students who wish to look for an accommodation one at Poitiers. 
Price of a room : 14.70€/night

The rooms are not provided with kitchen utensils, (plates, dishes, cutlery, glasses…), microwave oven, household and bathroom linen (sheet, blanket, duvet, pillow, towels…)...
6.3 Restaurants and cafeterias

Meals at university restaurants are at the price of **3.15€**. If you want to use this service, you have to present your multiservice student card at each checkout.

You can check the balance of your card by inserting it in the self-service loading terminals and the telephone booths.

You can use your card in every university restaurants. They are open on Saturdays and during school holidays.

A counter service for the multiservices student card is open on Tuesday from 12.00 to 1.30 p.m. at the entrance of the Gémini university restaurant. You can reload your card (using your credit card) at the entrance of the Gémini university restaurant, as well as at the Brasserie du Lac.

### FUTUROSCOPE RESTAURANTS

#### UNIVERSITY RESTAURANTS

**Brasserie du Lac** (Téléport 2, Bld des Frères Lumière)
Open from 8 a.m. to 5.30 p.m. (3.00 p.m. on Friday).
Offers sandwiches, mixed salads, grills and pizzas.

**RU Gémini** (av Blaise Pascal)
Open from 11.30 a.m. to 1.30 p.m. and from 6.30 p.m. to 8 p.m. Offers full meals, pastas and grills.

#### OTHERS

**Les Alizés** (Téléport 2 – Boulevard des Frères Lumière)
Open from 7.30 a.m. to 10.00 p.m. Bar, pub, pizzas, grills, salads, today’s special.

**Bleu Sel** (Téléport 2, Avenue Blaise Pascal)
Fast food: sandwiches, toasted ham and cheese sandwich (croque-monsieur), salads, fruits, desserts.

**Le Snack du Futuroscope** (Téléport 2 – 4bd des Frères Lumière)
Kebab
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POITIERS RESTAURANTS

UNIVERSITY RESTAURANTS (ON CAMPUS)

RU Champlain
(117 avenue du Recteur Pineau, near LMDE)
Open from 11.30 a.m. to 1.30 p.m.
Traditional food, fast food: pizzas, pies, kebab, pastas.
TEL : +33 5 49 38 00 02

RU Rabelais
(38 avenue du Recteur Pineau, near UFR de Droit,)
Open from Monday to Friday from 11.30am to 2.00pm and from 6.45pm to 9.15pm (5.00pm on Friday) for the ground floor.
Open from Monday to Saturday from 11.30am to 1.30pm and from Monday to Friday from 6.45pm to 8.30pm for the first floor.
Bar open from 7.30am and sandwiches from 10.00am.
TEL : +33 5 49 44 53 82

RU Marie Curie (21 rue Jean Richard Bloch)
TEL : +33 5 49 30 08 34

RU Roche d’Argent (1 rue Roche d’Argent, downtown)
Open from 11.30am to 1.30pm (2.00pm for Pizza and Indiana) and from 7.00pm to 8.45pm (except on Friday night)
Traditional food, pastas, salads, hamburgers, grill, French fries.
TEL : +33 5 49 11 97 78

Cafétéria La Cave
(43 Place Notre Dame, next to the Médiathèque)
Open from Monday to Thursday from 7.30am to 6.00pm (4.00pm on Friday).
Bar, breakfasts, grill, French fries, sandwiches, salads, pizzas.
TEL : +33 5 49 11 97 78

For more information:
http://www.crous-poitiers.fr/
6.4 Job opportunities

The access of international students to work is subjected to authorization. The delivery of a student status takes place on condition that the student has incomes.

To get this status, the application has to be registered at the « Direction Départementale du Travail » at the place of residence.

Necessary documents:
- temporary student residence permit (valid),
- student card,
- Promise of recruiting or work contract, whatever the nature (short-term contract or permanent-term contract) or recruitment in a temporary work company.

**Erasmus students:** for the students regularly registered at ISAE-ENSMA, no work permit is necessary.

### DIRECCTE 86 - Direction Régionale des Entreprises, de la concurrence, de la consommation, du Travail et de l'Emploi de la Vienne

47 rue de la Cathédrale
86000 POITIERS

Tel : (+33) 5 49 50 34 94

6.5 Where and how find a job

**Students Information Centre**

CRIJ Poitou- Charentes
64 rue Gambetta – BP 176
86004 Poitiers Cedex

Tel: (+33) 5 49 60 68 68
Fax: (+33) 5 49 60 68 70
http://www.ij-poitou-charentes.org

**Newspapers**

PRESSE SERVICE 86
5 rue Victor Hugo
BP 299
86000 Poitiers

Tel : (+33) 5 49 55 55 55
Fax : (+33) 5 49 55 68 00
http://www.presseservice86.fr

PARU VENDU
28 rue Carnot – BP 46
86000 Poitiers

Tel : (+33) 5 49 41 09 09
Fax: (+33) 5 49 55 32 40
http://www.paruvendu.fr

Information is also available at “La Maison des Etudiants” from the CROUS: crous.jobs@ac-poitiers.fr

For more information:
http://www.crous-poitiers.fr/page_34-jobs.html
6.6. French language courses for international students

ISAE-ENSMA courses are currently taught in French. A very good level in French is required to attend courses at ISAE-ENSMA (for application, a certificate is required).

International students can attend free French courses in ENSMA. Duration of courses: 1h30 per week. Students have to apply each beginning of semester.

For those wishing to improve their level in French and coming only for carrying out a laboratory research project, French language courses are organised in Poitiers.

Information at: Centre de Français Langue Etrangère
95 avenue du Recteur Pineau
86022 Poitiers Cedex
Tel: (+33) 5 49 45 32 94 / (+33) 5 49 45 32 95
E-mail: centre.fle@univ-poitiers.fr
Web site: http://cfle.univ-poitiers.fr/

A pre-reenrolment is compulsory before July 3rd for the whole year or the 1st semester and before November 27th for the 2nd semester.

Programs for the year 2015/2016:

- **Full-time courses:**
  - 1st session: from September to December: 900 €
  - 2nd session: from January to May: 900 €
  - A full year: from September to May: 1800 €

- **Remedial courses (part-time courses):**

  Only open for students with an advanced level in French (from B1+ to C2) registered at the University of Poitiers off CFLE:

  - 2h/ week: 105 €
  - 4h/ week: 190 €
  - 6h/ week: 235 €
  - 8h/ week: 280 €
  - 10h/ week: 310 €

6.7 Multiservice student card (part 1)

The electronic multiservice student card is delivered for free to the students upon their registration by their school’s education department and is valid during their schooling (three years maximum).

- A lot of services are grouped in one card

Delivered for free, she identifies you as a student and give you the access to the various services of ISAE-ENSMA.
6.7 Multiservice student card  (part 2)

- The card enables:
  - To borrow documents at the libraries of the PRES institutions.
  - To pay meals and drinks in the restaurants, university cafeterias and vending machines of the CROUS (Izly Card: http://izly.fr/) so as furnishing in some university residence.
  - To enjoy reduced prices linked to the student status.
  - To pay the purchases with Moneo at associated stores and also at some vending machines (drinks, postmarks, TER tickets…) and ticket machine, recognizable by the logo.
  - To check the balance at the Moneo self-service loading terminals so as on the displays at the moment of payment.
  - To pay copies and prints, depending on the institutions.

6.8 Culture card

This card is delivered for free and allows you to participate to the « poitevine » cultural life. Indeed, it gives you the right to get several reductions on entries and subscriptions for shows, concerts, films or exhibitions.

Some ‘Carte Culture’ Events are regularly planned and are gratis for its owners.

You can buy it all year long at the Theatre, at Confort Moderne, at the Espace Mendès France, in museums or at the TAP Scène Nationale.

For further information, please call: (+33) 5 49 39 29 29 http://www.carteculture.org/

6.9 Useful addresses

<table>
<thead>
<tr>
<th>Office de Tourisme de Poitiers</th>
<th>Tel : (+33) 5 49 41 21 24</th>
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<tbody>
<tr>
<td>45 Place Charles de Gaulle</td>
<td></td>
</tr>
<tr>
<td>BP 377</td>
<td>Fax : (+33) 5 49 88 65 84</td>
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<tr>
<th>Caisse d’Allocations Familiales (CAF)</th>
<th>Tel: 0 820 25 86 10</th>
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<tbody>
<tr>
<td>41 rue Touffenet</td>
<td></td>
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<tr>
<td>86044 Poitiers Cedex</td>
<td><a href="http://www.caf.fr">http://www.caf.fr</a></td>
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<tr>
<th>Mairie de Poitiers</th>
<th>Tel : (+33) 5 49 52 35 35</th>
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<tbody>
<tr>
<td>Hôtel de Ville – 15 Place du Maréchal Leelere</td>
<td>Fax : (+33) 5 49 52 38 80</td>
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<tr>
<td>BP 569</td>
<td></td>
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<tr>
<td>86021 Poitiers Cedex</td>
<td><a href="http://www.poitiers.fr/">http://www.poitiers.fr/</a></td>
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<tr>
<th>La Communauté d’Agglomération de Poitiers - Vie étudiante</th>
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<tbody>
<tr>
<td>Service Jeunesse</td>
</tr>
<tr>
<td>7 rue du Puygareau</td>
</tr>
<tr>
<td>BP 569</td>
</tr>
<tr>
<td>86021 Poitiers Cedex</td>
</tr>
<tr>
<td><a href="mailto:jmq@agglo-poitiers.fr">jmq@agglo-poitiers.fr</a></td>
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<tr>
<td><a href="http://www.grandpoitiers.fr">http://www.grandpoitiers.fr</a></td>
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<tr>
<th>Centre Régional d’Information Jeunesse (CRIJ)</th>
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<tr>
<td>64 rue Gambetta</td>
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<tr>
<td>BP 176</td>
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<tr>
<td>86004 Poitiers Cedex</td>
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<tr>
<td><a href="http://www.ji-poitou-charentes.org/">http://www.ji-poitou-charentes.org/</a></td>
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7.1 Sport activities

Sports and physical activities have always been part of the school’s curriculum. It gathers students from the three years. Among the many possible activities, let us quote:

- collective sports: tennis, soccer, handball, rugby, volleyball...
- individual sports: climbing, body building, tennis, swimming, badminton, cross-country race, athletics...

For all these activities, supervised by three teachers, the school has exceptional facilities at its disposal:

- a gymnasium with 3 tennis courts, 9 badminton grounds, wall and artificial structure climbing. A modern body building room can also be found there;
- 4 outside tennis grounds;
- 1 soccer ground and 1 rugby ground;
- 1 cross-country race trail and an athletics area.

Tournaments are organized every year:

- within the framework of the FNSU (National Federation of University Sports),
- for more than 30 years with the 2 aeronautics schools of Toulouse (ISAE-SUPAERO, ENAC),
- with the other ENSIs (Ecoles Nationales Supérieures d’Ingénieurs).
7.2 Clubs and associations

Student life at ISAE-ENSMA is livened up by about fifty-six associations and clubs managed by the Student Fraternity. Students can thus take part in the activity of their choice.

The different clubs (some examples):

⇒ with cultural vocation: CINENSMASCOPE each year projects great successes of the box-office, but also movies of the cycle Art and Tests, with at the end of certain meetings a debate/conference.

⇒ with sporting vocation: ENSMAIR offers to its members (conquered by the first flight offered to all new promotion) to initiate to the joys of piloting at reasonable prices.

ENSMAREGATE takes part in the EHDEC race and the Armorica Cup, and also proposes weekends at sea for the beginners as for the initiates.

⇒ ENSMA-Kart proposes to its members to take part in races.

⇒ with humanitarian vocation: CSF (Club Without Border) takes part through actions on the ground, in the improvement of the living conditions in certain Third World countries and contribute to better making known this part of the world thanks to the organisation of many events.

⇒ ENSMA-Contact :

The association of Engineers and former students from ISAE-ENSMA, ENSMA-Contact, is the link between the former students of the school, friends and Engineering students. The association supports the students extracurricular activities, drives the diffusion of job offers and the network of its members.

For further information : http://www.ensmacontac.org or on demand to: contact@ensma.fr
7.1 Sport activities

7.2 Clubs and associations

ENSMA Conseil: by putting their competencies at the service of industrialists, the students of ENSMA Conseil contribute to bring together the school and companies. The variety of the services suggested goes hand in hand with quality.

- Technical and scientific studies realised with the support of researchers and teachers.

For example: study of the insulation of piles to lithium embarked on satellites, for the SAFT.

- Council with computerization and the design of software.

For example: modelling of Ariane 5, for the CNES; optimisation of tables visa macros, on the Lotus spreadsheet, for Schlumberger.

This list is however far from being exhaustive (Complete associations and clubs list available on this link). Life at ISAE-ENSMMA is also the KAARF. Accessible 24h/24, within the School, it offers to all the possibility of using video material and computers. The club is also the place for parties which, when beautiful days arrive, are organized around the lake.

Credits for photographs: Club Photos ENSMA, A. Gouillardon, O. Geay, F. Lagatta, D. Proux, M.J. Pichon, M. Vimenet, Snecma-Groupe Safran, Airbus, Dassault-Aviation, ESA/CNES/ArianeSpace/CEF - Futuroscope
ÉCOLE NATIONALE SUPERIEURE DE MECANIQUE ET D'AEROTECHNIQUE

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