A multidisciplinary research centre

21 laboratories  1,600 people

- Biology
- Chemistry
- Computer Science
- Mathematics
- Applied Mathematics
- Mechanics
  \((\text{Solid Mechanics, Fluid Dynamics, Meteorology})\)
- Economics
- Physics and Applied Physics
  \((\text{Theoretical, Condensed Matter, Solid-State, Particle, Nuclear, Plasma, Materials, Electronics, Lasers, Optics})\)

Humanities and Social Sciences
• Fundamental Interactions (High-energy physics, particle physics, astrophysics)
• Lasers, Optics, Plasmas, Energy (High-performance short-time lasers, quantum optics, nuclear fusion)
• Condensed Matter, Soft Matter, Bio- and Nanostructures
• Electrical Engineering (micro- and nanoelectronics)
An outstanding campus

◆ 15 km away from Paris, 200 hectares

◆ 9,000 m² of sports facilities: rugby, soccer, riding, swimming, climbing, golf, fencing, athletics…

◆ 59 lecture halls and classrooms
◆ 1,500 individual dorm rooms
## Education

<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>Postgraduate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>« INGENIEUR POLYTECHNICIEN »</strong></td>
<td></td>
</tr>
<tr>
<td>Two to three years of undergraduate studies</td>
<td></td>
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<tr>
<td>Year 1</td>
<td>Year 2</td>
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</tbody>
</table>

- **« Ingénieur Polytechnicien »**: 2,000 students, 20% international
- **Master Program**: 200 students, 50% international
- **PhD Program**: 460 students, 40% international
The « Ingénieur Polytechnicien » curriculum, an Advanced Master in Science & Technology

<table>
<thead>
<tr>
<th>GENERAL EDUCATION</th>
<th>SPECIALIZED EDUCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>YEAR 1</strong></td>
<td><strong>YEAR 2</strong></td>
</tr>
<tr>
<td>Leadership training or Intensive linguistic &amp; scientific classes</td>
<td>Multidisciplinary Scientific Education</td>
</tr>
<tr>
<td>6 scientific fields out of 8: Mathematics, Applied Mathematics, Computer Science, Physics, Mechanics, Chemistry, Biology, Economy</td>
<td></td>
</tr>
<tr>
<td>+ Seminars in Humanities &amp; Social Sciences, Foreign Languages, ...</td>
<td></td>
</tr>
<tr>
<td><strong>YEAR 3</strong></td>
<td><strong>YEAR 4</strong></td>
</tr>
<tr>
<td>Physics - From Particles to Stars - Laser, Optics, Plasma and Energy - From Atoms to Materials - From Materials to Applications</td>
<td>Advanced Specialization in Science or in Technology</td>
</tr>
<tr>
<td>From Semiconductors to Computer Systems</td>
<td>Doctoral coursework</td>
</tr>
<tr>
<td>Computer Science</td>
<td>Master of Science</td>
</tr>
<tr>
<td>Complex Industrial System Engineering: - Embedded Systems - Information Systems</td>
<td>Graduate Institute of Technology</td>
</tr>
<tr>
<td>Optimization, Communication and Signal</td>
<td>Mathematics</td>
</tr>
<tr>
<td>Mathematical Engineering in Finance and Ecological Systems</td>
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</tr>
</tbody>
</table>

- One class = 500 students
- 400 French
- 100 International
Master of Science

**Prerequisite:** Bachelor's degree

**Duration:** 2 years - Possibility to be admitted directly to the 2nd year

**Tuition fees:** from €440 to €11,000 depending on the duration of the program and the type of scholarship awarded

**Financial support:**
- Research Assistantships, Teaching Assistantships,
- Excellence Fellowships
- Corporate Fellowships (Alcatel, Thales…)

**Generic structure of a Master’s program**
Master of Science

Mathematics
“Analysis, Arithmetic and Geometry”

Applied Mathematics
“Mathematics and Modelling”
“PDE and Numerical Analysis”
“Optimization, Game Theory & Modelling in Economics”
“Mathematics, Vision, Learning”

“Probability Theory and Applications”
“Probability Theory & Finance”
“Applied Probability Theory”

Mechanics
“Materials for Structures and Energy”
“Fluid Mechanics and Energetics”
(in English)
“Oceans, Atmosphere, Climate and Teledetection”

Economy and Business Management
“Quantitative Economics & Finance” (M1)
(in English)
“Project, Innovation, Conception”
“Economic Analysis and Policy”
(in English)
“Economy of Energy, Environment and Sustainable Development”

Computer Science
“Fundamental Computer Science”

System Engineering
“Engineering of Complex Industrial Systems”
Master of Science

Physics and Applications

“Fundamental Concepts in Physics”
  “Theoretical Physics”
  “Quantum Physics”
  “Solid State Physics”
  “Liquid & Soft Matter Physics”

“Optics, Matter and Plasmas”
  “Laser / Matter”
  “Optics & Photonics”
  “Plasma Physics”
  “Optoelectronics”
  “Physics & Technology for Large Instruments”

“Materials Science and Nano-Objects”
  “Nanostructures & Interfaces”
  “Materials: Experimentation & Modelling”

“Fusion Sciences”
  “Inertial Confinement Fusion”
  “Magnetic Confinement Fusion”

Environmental Engineering

“Transportation and Sustainable Development”

Chemistry

“Molecular Chemistry” (in English)

Molecular and Cellular Biology

“Structural and Functional Engineering of Biomolecules”
PhD Program

◆ Internationally recognized degree
◆ Duration: 3 years
◆ Admission after a Master of Science by Research
◆ 460 PhD students: 40% international
◆ 100% of PhD students have financial support
◆ 120 PhD defences in 2006
◆ PhD Awards: 8 prizes per year
“Ingénieur Polytechnicien” (3-4 years)

- The deadline for on-line application for 2011: 01/10/2010
  Exams: end of November – beginning of December 2010
  Final decision: January 2011
  Education starts: October 2011 (exceptionally April 2011)

- Requirements (http://www.polytechnique.fr/concours/voie2_et/etranger/english/angl_requiere.php)
  Candidates cannot apply more than once

- Application: CV, official records, diplomas, recommendation letters, etc.

- Exams: Mathematics (50%), Physics (33%), General Scientific Knowledge (17%)
  in French or in English

- French Language: 4 months intensive courses (October – January) + courses

- Scholarships: ~750 e/month for 3/4 years

- Further Information: international-v2@polytechnique.fr

www.polytechnique.edu in English & French
Master Programs (2 years)

- The deadline for on-line application for 2010-2011: 15/03/2010 or 15/05/2010 or 15/08/2010
  - Exams: no exams, academic records
  - Final decision: variable, typically June
  - Education starts: September 2010

- Requirements: Bachelor of Science
  - Good knowledge in French, expect for Masters taught in English
  - Candidates can apply for several Master programs

- Application: CV, records, diplomas, recommendation letters, etc.

- Subject: more than 20 master programs (8 in English), see on the web

- French Language: obligatory courses, qualification exam at the end

- Scholarships: ~800 e/month

- Further Information: masters@polytechnique.fr

www.polytechnique.edu in English & French
PhD Program (3 years)

- The deadline for subscription for 2010-2011: 30/11/2010 (BUT: Scholarships!)

- Application: Candidate must first identify a laboratory and a research subject
  List of laboratories: http://www.polytechnique.edu/page.php?MID=44
  List of proposed topics: http://www.adum.fr/as/ed/proposition.pl?site=polytech

- Requirements: Master of Science

- Scholarships: Candidate and his future supervisor should find a scholarship
  EDX Research Scholarship: 3 years (~ 1650 e/month), ~20 scholarships per year
  deadline for application: end of May 2010
  DRE Scholarship: 3 years (~ 1650 e/month), ~4 scholarships per year
  deadline for application: end of May 2010

- French Language: recommended but not necessary (courses offered)

- Further Information: directeur.edx@polytechnique.edu

www.polytechnique.edu in English & French
International Exchange Program (1 year or less)

- The deadline for on-line application for 2009-2010: 01/04/2010 or 31/10/2010 still possible!
- Final decision: end of May 2010
- Education starts: Mid-September 2010 or January 2011
- Admission: Academic qualification (no exams)
- Requirements: 3-4 years of education, good records (especially in Mathematics)
- Duration: from 3 to 9 months (academic year)
- Modality: Y2 or Y3 (level of M1): trimester + trimester + research internship in one of laboratories in Ecole Polytechnique
- French Language: good knowledge; courses offered
- Scholarships: ~600 e/month
- Further Information: cecile.vigouroux@polytechnique.edu

www.polytechnique.edu in English & French
Internship Program for International Students (3-6 months)

- This is a very flexible program for research exchanges.
  - Release of internship topics: December 2010
  - Deadline for application: January 2011
  - Arrival: March-May 2010

- Admission: Jury decision on academic qualification (no exams)
- Dedicated to: 3rd and 4th years of Bachelor, 1st and 2nd years of Master, PhD
- Duration: from 3 to 6 months
- French Language: not necessary
- Scholarships: ~600 or 800 €/month (according to the diploma)
- Further Information: cecile.vigouroux@polytechnique.edu

www.polytechnique.edu in English & French