

Entrance requirements

Students with outstanding achievement equivalent to UK First Class in the following fields can apply to this programme:

- > electronics
- > computer science
- > physics or chemical engineering
- > material engineering

How to apply

Required documents:

- > Application form: <http://www.isat.fr/fr/International/english-taught-master>
- > Letter of application outlining motivation to participate in the programme
- > Curriculum Vitae
- > Official copy of a Bachelor's degree or equivalent with transcript of records (English translation)
- > Two referees and their addresses, preferably from the university or institute that awarded the first degree, who will be contacted
- > A copy of valid ID documentation and passport

to be sent to:

- > master_aesm.polytech@univ-orleans.fr
- > master_aesm.isat@u-bourgogne.fr

For further information

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Prof. Sidi Mohammed SENOUCI
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ISAT Research Centre

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Overview

Duration: Two years

Credit Transfer: Each course is equal to 5 European Credit Transfer and Accumulation System (ECTS) credits. ECTS credits are validated and transferable.

Number of places: 24

Tuition fees: 9500€

Grants from funding: The Conseil Régional de Bourgogne and the Conseil Régional de la Région Centre are offered depending on merit. Please contact us.

AUTOMOTIVE ENGINEERING for SUSTAINABLE MOBILITY

NEW Master Programme taught in English

- Energy Management & Control for Sustainable Mobility
- Eco-Conception & Composites for Sustainable Mobility



Conception graphique: BFL Polytech'Orléans

ISAT
Institut Supérieur de l'Automobile et des Transports

UB
UNIVERSITÉ DE BOURGOGNE

POLYTECH
ORLÉANS

UNIVERSITÉ D'ORLÉANS

Automotive Engineering for Sustainable Mobility

A new idea

Keeping the planet turning in the right direction will take a lot of brand new technical and creative know-how from engineers today. To respond to this imperative, Polytech'Orléans and ISAT have combined their expertise and their facilities in the automotive field to offer a very specialized programme.

The new Master in Automotive Engineering and Sustainable Mobility, taught entirely in English, is tailored to address this need and encompasses the entire dimension of today's and tomorrow's complex automotive systems in a **real-life context**.

The revolution in research tools in mechanics, materials, energy and electronics allows our students to study total product performance — that means **real-world experience** closely aligned with industrial concerns.

This Master programme integrates creativity, technology and labs with three semesters of study followed by one semester of individual research thesis.

Takes you on to

Our graduates will be expert in the latest and most promising new technologies like alternative fuels, ecodesign, biocomposites and sustainable manufacturing as well as all aspects of mechanics, energy and embedded electronics. They will also benefit from a sharp focus on research and be able to:

- > prepare a career as an engineer for industrial projects and services,
- > qualify to be a research and development engineer for leading companies and organizations, and
- > acquire a valuable background for PhD studies.

YEAR 1

YEAR 2

Course description

Fall semester in Orléans: Core Modules (30 ECTS)

- Trends in Automotive and Transportation: Past and present
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- Scientific prerequisites
- Electrical engineering
- IT: Programming
- Advanced physics
- Project
- French culture and language

Option EMC: Energy Management & Control for Sustainable Mobility

Spring semester in Orléans (30 ECTS)

- Acquisition systems and signal processing
- Internal combustion engines
- Electric engines
- Control and on-board diagnostics (OBD)
- Real-time programming
- Alternative fuels and pollutant reduction
- French culture and language

Fall semester in Nevers (30 ECTS)

- Critical systems
- Interaction human/vehicle: driver behaviour, adaptive IHM, augmented reality
- Energy hybridizing/storage
- Engine components (injection, turbo machinery)
- Electrical power train
- Control and simulation of power trains
- French culture and language

Spring semester (30 ECTS)

- Internship in a research center or laboratory



Institut Supérieur de l'Automobile et des Transports

ISAT, located in Nevers (2 hours south of Paris and close to the famous Nevers/Magny Cours F1 circuit) is the only French state-run institution covering the whole range of jobs and skills related to the automotive and transport industries, with a strong expertise in mechanical and electrical engineering and energetics from design to production:

- > research design and development,
- > industrialization,
- > manufacturing,
- > quality, purchasing, embedded electronics...

ISAT includes:

- > 150 students
- > approximately 45 tenured staff in teaching and research
- > over 50 lecturers with an industrial background
- > a site dedicated to teaching and research
- > transfer of technology centre 'Magnytude'
- > 1 research laboratory 'DRIVE'
- > 1 public-private research centre 'Id Motion'

ISAT is part of the Polytechnicum de Bourgogne/Franche Comté network together with 13 other engineering and business-oriented Grandes Ecoles.

With the Formula 1 circuit "Magny-Cours" nearby, our students are able to experience leading automotive technology first-hand, which serves an educational purpose as well as a recreational one.



Ecole Polytechnique de l'Université d'Orléans

The public Engineering School of the University of Orléans offers four specialities:

- > mechanics and energetics
- > ecotechnology engineering in electronics and optics
- > civil engineering
- > production

Polytech'Orléans has acknowledged expertise in driving control and embedded systems.

A member of the Polytech network of 12 engineering schools in France, Polytech'Orléans includes:

- > 1000 engineering students,
- > 60 PhD students and 100 senior lecturers,
- > and is associated with six well-known research laboratories.

The University of Orléans is a multidisciplinary institution which was created in 1306 and reopened in 1961, celebrating its 700th anniversary in 2006.

Orléans, capital of the "Region Centre", is located one hour from Paris in the Loire Valley, which is featured on the UNESCO heritage list.

