

# ISoT

Institut Supérieur de l'Automobile et des Transports

The French Institute of Automotive & Transportation Engineering

Engineering the vehicules  
of tomorrow



**uB**  
UNIVERSITÉ DE BOURGOGNE



Institut Supérieur de l'Automobile et des Transports

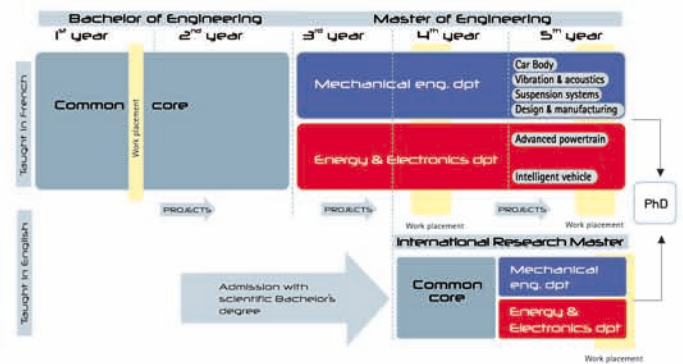


## The French Institute of Automotive & Transportation Engineering

ISAT, located in Nevers ( 2 hours south from Paris & close to the famous Nevers/Magny-Cours circuit) is a unique state-run institution covering a large range of jobs and skills related to the automotive and transport industries, with a strong expertise in mechanical & electrical engineering and energy from design to production ( R&D, design & development, industrialisation, manufacturing, quality, purchasing, embedded electronics...)

- created in 1991, ISAT belongs to the University of Burgundy
- certified & accredited by the French education authority (CTI)
- EUR-ACE<sup>®</sup> accredited programme, European quality label for engineering degree programmes at Bachelor & Master level 
- Bachelor & Master courses (scientific & technical ground subjects followed by specialization courses, social sciences & economics)
- ~900 alumni engineers already trained
- classes of 150 students (working groups of 15 to 30)
- ~45 tenured staff in teaching & research
- over 50 lecturers with an industrial background
- 8 000m<sup>2</sup> site dedicated to teaching, research & student life
- 1 technology transfer centre "Welience"  
Research laboratories "DRIVE & Id-Motion"

## Bachelor & Master Courses



## English-taught master's degree in Automotive Engineering for Sustainable Mobility

This two-year Master's degree is entirely taught in English with a choice of 2 options (Ecodesign & composite or Energy management & control). Our graduates will become experts 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 R&D and receive excellent preparation for PhD studies.

All details available at <http://www.isat.fr/fr/International/english-taught-master>

## French-taught programme

- solid scientific & technical training (mathematics, physics, chemistry, IT, mechanical design & manufacturing, industrial production management...)
- cultural openness supported by economic contents, marketing, law, human resources, communication, sport, 2 compulsory foreign languages
- professional integration via in-situation job interviews, CV techniques, in-school career fairs...
- 3 work-placement periods totalling over 12 months
- hands-on experience in leading automotive technology & work in project groups throughout the Bachelor & Master course
- choice of 2 departments in the last 3 years :
  - "Concept Car" (CC) focusing on mechanical engineering & design
  - EP2E geared towards energy, environment, powertrain & embedded electronics
- 5<sup>th</sup>-year specialisation contents :
  - Concept Car department : car body, vehicle design & manufacturing, suspension systems, vibration & acoustics
  - EP2E Energy department : intelligent vehicle, advanced powertrain

## How to enrol at ISAT ?

Applicants with French diplomas :  
admission after selection by exam or application & interview within 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> or 4<sup>th</sup> year (all details available at <http://www.isat.fr/fr/entrer-a-ISAT>)

Applicants with non-French diplomas :  
■ on an individual basis (outside an exchange programme) : entry into 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> & 4<sup>th</sup> year according to the student's academic level ; all details available at

[http://www.isat.fr/fr/entrer-a-ISAT/Voie internationale](http://www.isat.fr/fr/entrer-a-ISAT/Voie_internationale)

■ within an exchange programme with one of our foreign partner-universities : entry into 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> or 5<sup>th</sup> year according to specific signed agreements. All details available at <http://www.isat.fr/fr/International/what-is-isat>

■ English-taught master's programme in Automotive Engineering for Sustainable Mobility : admission with bachelor's degree in electrical, chemical, materials & mechanical engineering, electronics, computer science, physics, chemistry, applied mathematics... All details available at <http://www.isat.fr/fr/International/english-taught-master>



## Discover the world of automotive competition

Throughout the Bachelor & Master courses, students participate in projects that can take various forms i.e. industrial, innovation, students' challenges such as the Formula Student, Shell Eco Marathon, Mini-Baja, Kart Low-cost, Feet Forward, World Solar Challenge. Check out for details at <http://www.isat.fr/fr/formation/projets-3a>

## Innovation-oriented Tuition **DRIVE**

Following the Master's degree taught in French or English, students can take a PhD degree at the "DRIVE" (research department in vehicle engineering for the environment) research laboratory.

The "DRIVE" research laboratory has 4 themes :

- composite materials
- vibration & acoustics
- energy
- embedded electronics

Among our research partners : Alstom Transport, Dupont de Nemours, EADS-Airbus, RATP, Faurecia, Eurocopter, Renault, CEA, PSA, France Telecom...

## State-of-the-art equipment

6 experimental platforms with advanced technical equipment

- mechanical engineering & composite materials : scanning electron microscope, multi-axis mechanical testing machines and unjection press
- vibration & acoustics : vibration / noise measuring chamber
- energy : engine test beds, vehicle dynamometer
- information technology & electronics : NI acquisition hardware & software, Labview Academy
- manufacturing processes : machining centre, CATIA workstations
- computer labs (CAD, high-speed prototyping)

## Id Motion applied research laboratory



This Scientific Interest Group linking ISAT and the Danielson Engineering company located in the automotive hub of Nevers-Magny Cours aims to develop knowledge and carry out research activities in the field of alternative fuels and high-efficiency energy powertrains.

The scope of action covers downsizing, hybridisation, combustion, fuels, thermal valorisation, road tests.

## Technology transfer centre



In the heart of the Nevers/ Magny-Cours automotive hub Welience is a technological R&D centre aimed at the automotive & transportation sector. Due to its situation on the Nevers/Magny-Cours Formule 1 circuit surrounded by high-tech companies, Welience is an exceptional interface with the vehicle industry. Welience also acts as a professional training pole where students can take courses and carry out industrial work placements.

## Solid & enriching network

- SIA Société des Ingénieurs de l'Automobile
- SEE Société de l'Electricité, de l'Electronique
- MECAFORUM consortium of 36 French circuits & 6 industrial test centres
- MOVEO competitiveness cluster
- Nevers Magny-Cours Performance cluster
- AMAC Association Matériaux Composites
- Elles Bougent association for bridging the gender gap in engineering jobs
- SNCACEIPA Syndicat National des Circuits Automobiles, des Centres d'Essais Industriels et des Professions Associées

## ISAT Students' expertise complies with corporate expectations

- rapid professional integration on the European market
- 75 % in the automotive branch & 15% in other transportation fields
- 78 % in R&D or engineering design-related positions
- 16 % in production-related positions ( manufacturing, industrial methods, quality, logistics)
- 6 % in sales engineering, purchasing, after-sales service

## ISAT goes global

ISAT holds over 30 bilateral agreements with partner-universities hosting our students worldwide : Belgium, Brazil, Canada, China, Czech Republic, Finland, Germany, Great Britain, Hungary, Ireland, Malaysia, Mexico, Morocco, Netherlands, Romania, Russia, Spain, Sweden, USA

## Versatile student life

Student life is enhanced with an activities programme including a dozen associations : students' union, sporting activities, musical practice and concerts, humanitarian actions (4L Trophy, academic support), entertainment (Gala, career fairs), motor-sport challenges ( Bol d'Or Classic, car rallies...)



Thibault Saint-Aubin

# ISAT

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