Bordeaux INP “Give Engineering a French Touch”

BORDEAUX INP Enseirb-Matmeca

Graduate School in Electronics, Computer Sciences, Telecommunications, Mathematics and Mechanics

ENSEIRB-MATMECA – Bordeaux INP (Bordeaux Graduate School in Electronics, Computer Science, Telecommunications, Mathematics and Mechanics) is a Bordeaux INP engineering school that trains engineers in five scientific disciplines covering the field of digital technology in broad terms.

A Word from the Director

Our school plays a central role in the major digital transformation of our society, and respond to key challenges facing industry: eco-friendly mobility and transportation, communication, innovative health technologies, smart objects, cybersecurity, functional materials, green energy systems etc. These emerging sectors let our students exploit excellent employment opportunities and career prospects.
As the largest school in Nouvelle-Aquitaine with over 1,200 engineering students, our programmes focus on innovative projects and are supported by world-class research laboratories, which are recognised globally as among the best in their specialisation.

Prof. Eric Kerhervé

6 engineering programmes

Including 2 work-study programmes A

- Electronics
- Computer Sciences
- Telecommunications
- Mathematics and Mechanics
- Network and Information Systems A
- Embedded Electronic Systems A

& 1 Master of Science

- Radio and Telecommunication Systems

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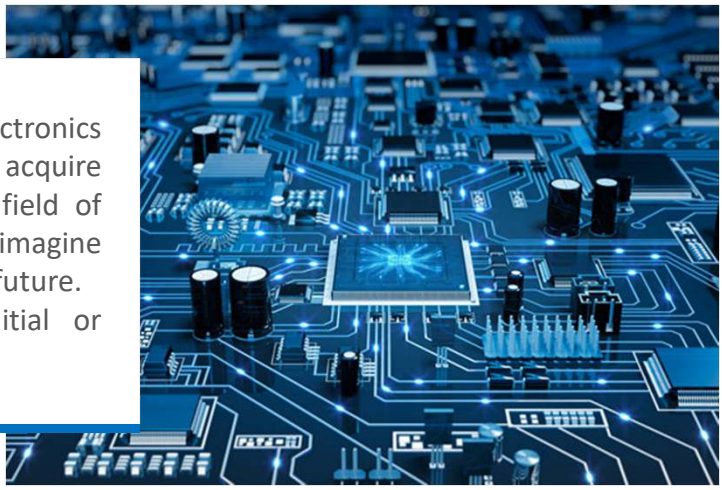
Electronics

The ENSEIRB-MATMECA Electronics programme allows students to acquire technical skills and expertise in the field of Electronics and develop an ability to imagine and design objects and systems of the future.
This programme is available as initial or continuing training.



COURSES

1ST AND 2ND YEAR (UNDERGRADUATE)

- Mathematics
- Physics
- General electronics
- Digital electronics
- Mathematics, signals and automation
- Processors and computer science
- Analog/RF circuits and systems
- Engineering languages and culture
- Signal Processing

Student testimonial

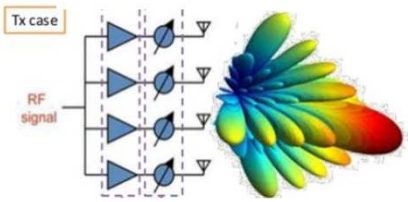
For me, the electronics programme was much more than an academic experience; it was a real introduction to the topics companies are interested in today. The skills I gained were useful during my rewarding internships in South Korea and Japan. I specialised in embedded systems and now plan to pursue a PhD in relation to the advanced technologies I discovered during projects.

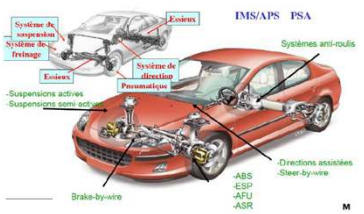
Vincent

8 SPECIALISATIONS

3RD YEAR (8 MASTER PROGRAMS)

- Integrated circuits and systems
- Telecommunications and radio systems
- Image and signal processing
- Embedded systems
- **Automotive, aeronautics and space automation and mechatronics (ENG)**
- Software development
- Robotics and learning
- **Electronic systems for biomedical engineering (ENG)**





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Computer Sciences

The ENSEIRB-MATMECA Computer Sciences programme allows students to master the necessary fundamental, theoretical and practical aspects to develop and implement solutions using computers (computers, telephones, computing clusters, robots, communicating objects, machines, cards etc.)

COURSES

1ST AND 2ND YEAR (UNDERGRADUATE)

- Algorithms and mathematics
- Programming and the IT environment
- Programming and systems
- Internet and networks
- Software design
- Systems and applications
- Projects
- Engineering languages and culture

Student testimonial

The close contacts with employers showed me that the technical skills I acquired were perfectly suited for the professional world of today and tomorrow. Thanks to everything I learned, I had no problem finding a pre-employment internship in a field I'm passionate about and where I feel comfortable. The school made this possible, by caring about its students' well-being, and their personal and professional empowerment.

Rémi

8 SPECIALISATIONS

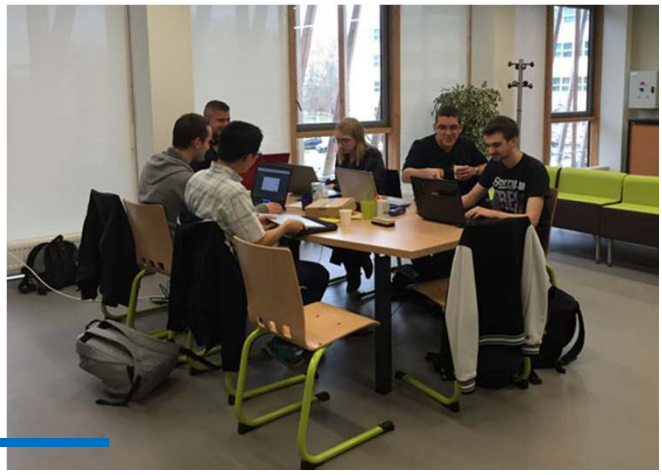
3RD YEAR (8 MASTER PROGRAMS)

- Software engineering
- Parallelism, regulation and grid computing
- Multimedia technology and video games
- Network and systems cybersecurity
- Robotics and learning
- European studies in software verification
- Innovation economy and industry intelligence
- **Artificial Intelligence (ENG on 2025)**

BORDEAUX INP Enseirb-Matmeca

Telecommunications

The department trains students in the fields of information technology, networks and telecommunications.
In line with the digital transformation of our society, the training program focuses on the deployment of connected objects and smart products that federate information processing and communication with their environment (5G/6G, network virtualization, security, mobile systems, data sciences and machine learning).



COURSES

1ST AND 2ND YEARS (UNDERGRADUATE)

- Computer sciences and networks
- Mathematics of engineering and signals
- Data Sciences
- Machine Learning
- Advanced projects
- Engineering languages and culture

Student testimonial

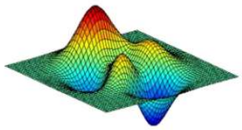
I originally chose to enrol in the Telecommunications programme for the technical training and its excellent reputation among industry professionals. But I discovered far more than just courses: a wide range of practical group projects, relationships with companies and laboratories, oral presentations in French and English that really helped me grow. All this made it easy for me to find internships and a job.

Simon

4 SPECIALISATIONS

3RD YEAR (4 MASTER PROGRAMS)

- Digital communication systems engineering
- Network and telecommunications software engineering
- Networks, security and connected objects
- Multimedia technology and video games



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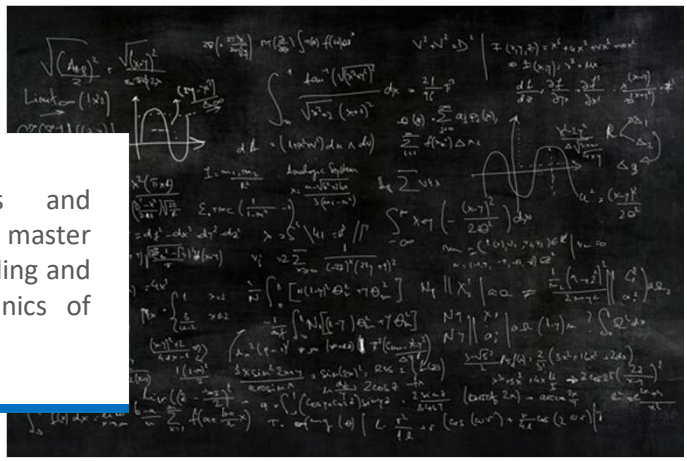
Mathematics and Mechanics



The ENSEIRB-MATMECA Mathematics and Mechanics programme allows students to master advanced theoretical and numerical modelling and simulation techniques for digital mechanics of fluids and solids.

COURSES

1ST AND 2ND YEAR (UNDERGRADUATE)

- Mechanics of solids
- Mechanics of fluids
- Mechanics of materials
- Mathematics and digital methods
- Software tools for scientific computing
- Study and research work
- Programming
- Engineering languages and culture

Student testimonial

The Mathematics and Mechanics programme prepared me for the professional world by providing me with comprehensive theoretical training, supplemented by work on many projects and real-life applications sought after by companies and laboratories. These assets allowed me to work at Renault for my final project and to continue my work with the company to pursue a CIFRE PhD.

Lalaina

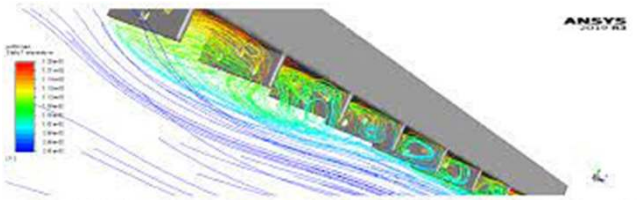
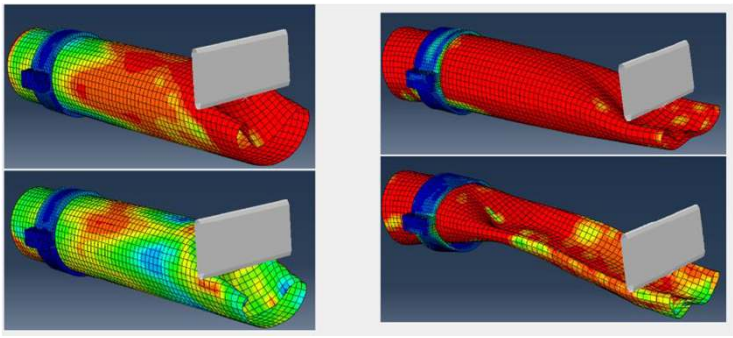


FIGURE 43 – Lignes de courant en température pour le panneau avec ailettes trouées en 3D (vitesse vent : 2.8m/s) (ANSYS Fluent 2019R3)

3 SPECIALISATIONS

3RD YEAR (3 MASTER PROGRAMS)

- **Advanced Modelling of Materials and structures (ENG)**
- Fluids and energetics
- High-performance computing for mechanics



BORDEAUX INP Enseirb-Matmeca

Network and Computer Sciences (work-study)

The ENSEIRB-MATMECA Network and Information Systems (RSI) programme allows students to master communications, digital and computer technologies in order to become information systems architects.

COURSES

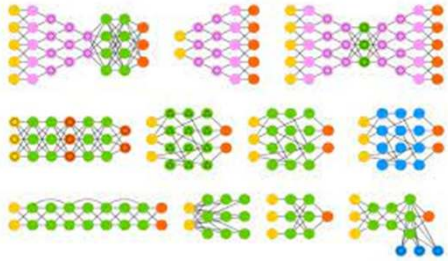
1ST, 2ND AND 3RD YEAR

- Engineering sciences
- Networks
- Computer science
- Signal processing and digital communications
- Web development
- Information systems
- Industrial electronic systems
- New network and telecommunications infrastructures
- Industrial networks
- Network and information system management
- Corporate culture
- English language

Student testimonial

The Information Networks and Systems programme provided me with theoretical training and allowed me to apply what I learned in the professional world. The three-year work-study programme gave me experience and maturity and led to my being offered a position at the company where I did my apprenticeship, even before I had graduated.

Yahya



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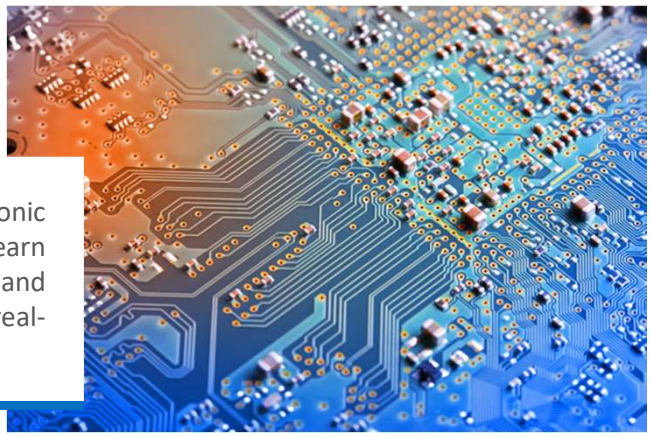
Embedded Electronic Systems (work-study)



The ENSEIRB-MATMECA Embedded Electronic Systems programme (SEE) allows students to learn about the latest electronics, computer science, and communications technologies for intelligent, real-time embedded systems of the future.

COURSES

1ST, 2ND AND 3RD YEAR

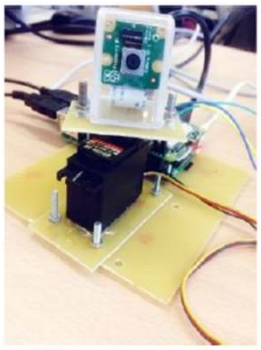
- Mathematics
- Analog electronics
- Digital electronics
- Physics
- Computer science
- Microprocessors
- Manufacturing technologies
- Digital systems
- Digital signal processing
- Operations and network systems
- Manufacturing a product
- Implementing embedded systems
- Monitoring tests and tools
- Embedded systems architecture
- System modelling
- Engineering culture
- Languages

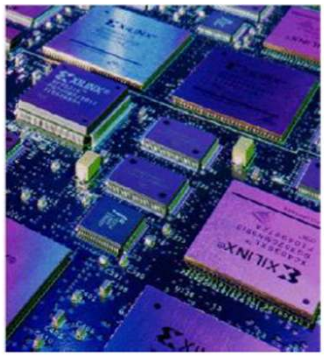
Student testimonial

Work-study is the perfect solution for students who want to be independent and get started in the professional world right away. The Embedded Electronic Systems programme allows students to play an active role in the digital revolution.

We're prepared to take on the challenges of the coming decade, such as the Internet of Things or fifth-generation mobile communication technology. The programme also includes designing systems adapted for aeronautics or space industry, which many students are interested in.

Mathieu





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BORDEAUX INP

9 graduate schools* in France

3500* students (selected through national competitive exam)

12% international students

22 programs* including 8 by apprenticeship

254 faculty members

11 joint research centers

140 partnerships worldwide

** Bordeaux INP and its partner schools*

BORDEAUX-INP.FR

Research and Transfer

4 JOINT RESEARCH CENTERS *in the following fields:* electronics, computer science, telecommunications, mathematics & mechanics.

98 ACADEMICS AND RESEARCHERS

850 m² DEDICATED TO TECHNOLOGY TRANSFER ACTIVITIES

A 400m² "EirLab" FabLab

Employment Prospects:

More than 400 graduates per year

60% of engineering students find a job **before** leaving school

Industrial partnerships

At ENSEIRB-MATMECA, companies play an essential role in learning.

OVER 110 LECTURERS FROM THE INDUSTRIAL WORLD

A NETWORK OF **OVER 2,000** INDUSTRIAL PARTNERS

Clubs and Associations

Over 50 student clubs and associations

Student testimonial

The close contacts with employers showed me that the technical skills I acquired were perfectly suited for the professional world of today and tomorrow. Thanks to everything I learned, I had no problem finding a pre-employment internship in a field I'm passionate about and where I feel comfortable.
The school made this possible, by caring about its students' well-being as well as their personal and professional empowerment.

Rémi

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Égalité
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RÉGION Nouvelle-Aquitaine

GROUPE INP