



BREST NATIONAL SCHOOL OF ENGINEERING

**COURSE**

**PROGRAM**

**REVEALING ENGINEERS SINCE 60 YEARS**



**ELECTRONICS**

**COMPUTER SCIENCE**

**MECHATRONICS**



**FRENCH GRADUATE SCHOOL OF ENGINEERING · RESEARCH INSTITUTE**

# Engineering degrees at ENIB

Engineer program

**+** MASTER LEVEL (300 ECTS\*)

➤ Year 5

➤ Year 4

**+** BACHELOR LEVEL (180 ECTS\*)

➤ Year 3

Admission with Baccalaureate + 2 years

Integrated preparatory program

➤ Year 2

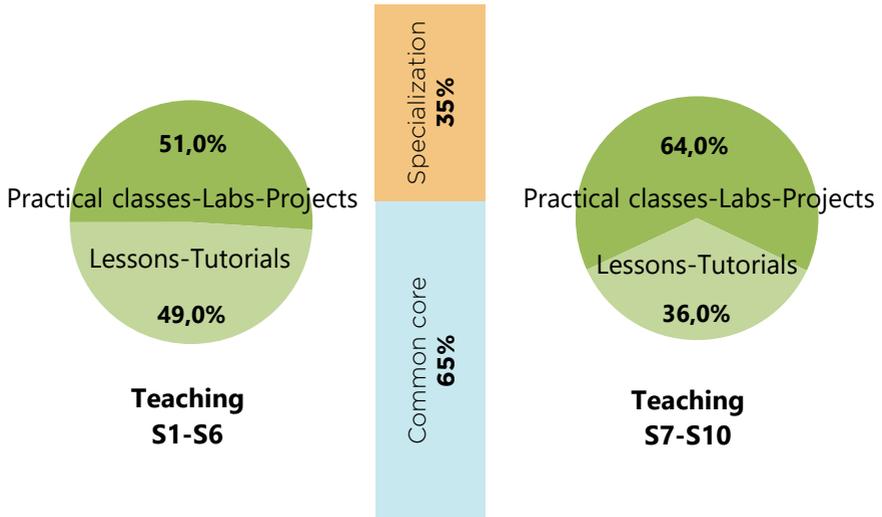
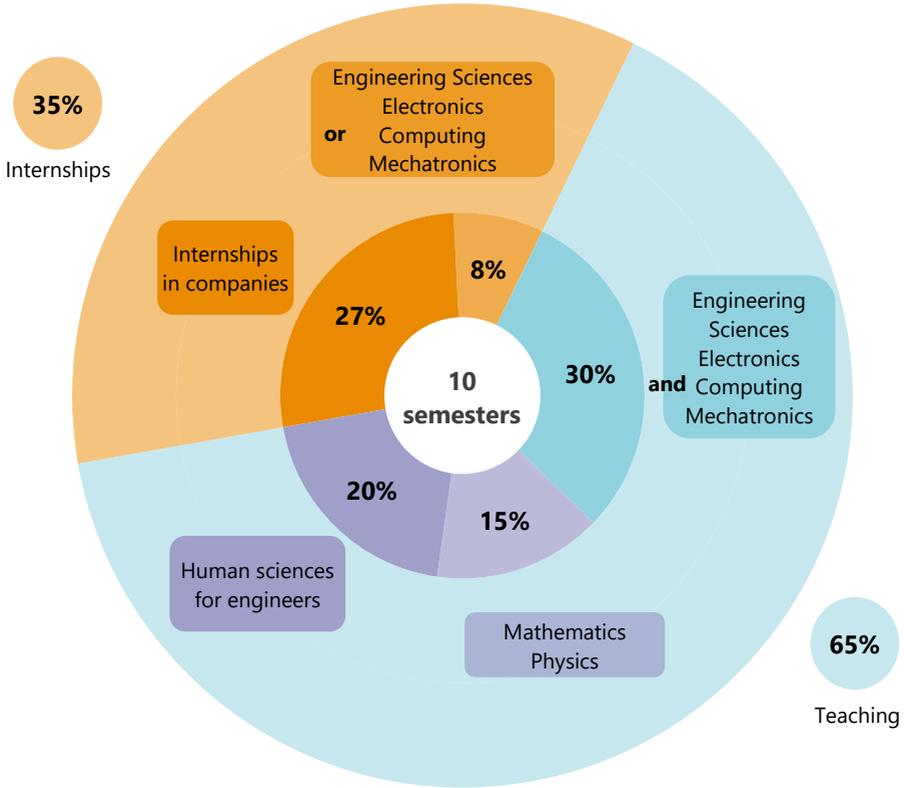
➤ Year 1

Admission with Baccalaureate

\* ECTS: European Credit Transfer System

# ENIB engineering courses

## Generalist systems engineer





# Integrated preparatory program

Courses in the 1<sup>st</sup> & 2<sup>nd</sup> years.

Year 1 (S1 and S2)			
S1		S2	
Subjects	Teaching hours	Subjects	Teaching hours
Human sciences for engineers*	74H	Human sciences for engineers*	74H
Math - physics	136H	Math - physics	126H
Engineering sciences (computing, electronics & mechatronics)	184H	Engineering sciences (computing, electronics & mechatronics)	194H

Year 1 (IS1)	
IS1	
Subjects	Teaching hours
General interest modules (theatre-based public speaking, workplace first aid, etc.)	140H

\* Languages-expression-economics



The preparatory program is composed of the first four semesters (S1 to S4) and the first two inter-semesters (IS1 and IS2).

Year 2 (S3 and S4)

<b>S3</b>		<b>S4</b>	
Subjects	Teaching hours	Subjects	Teaching hours
Human sciences for engineers*	84H	Human sciences for engineers*	84H
Math - physics	105H	Math - physics	147H
Engineering sciences (computing, electronics & mechatronics)	220H	Engineering sciences (computing, electronics & mechatronics)	178H

Year 2 (IS2)

<b>IS2</b>	
Subjects	Teaching hours
Worker internship	4 weeks



# Engineer program

Courses in the 3<sup>rd</sup> & 4<sup>th</sup> years.

Year 3 (S5 and S6)			
S5		S6	
Subjects	Teaching hours	Subjects	Teaching hours
Human sciences for engineers*	74H	Human sciences for engineers*	74H
Math - physics	105H	Math - physics	52H
Engineering sciences (computing, electronics & mechatronics)	231H	Engineering sciences (computing, electronics & mechatronics)	294H

Year 3 (IS3)	
IS3	
Subjects	Teaching hours
General interest modules (science and technology in the media, diversity awareness, etc.)	140H



The engineer program is composed of the last six semesters (S5 to S10) and the last inter-semester (IS3).

Year 4 (S7)	
S7	
Subjects	Teaching hours
Languages	42H
Management	21H
Digital embedded systems	84H
Communication networks & systems	84H
Power interface systems	84H
1 Optional module	84H
Technician internship (8 to 12 weeks)	

Optional modules	
Radio frequency communication systems	Signal & image processing
Interactive application design	Methods for information systems development
Materials & advanced design	Modeling in autonomous robotics



# Engineer program

Courses in the 4<sup>th</sup> & 5<sup>th</sup> years.

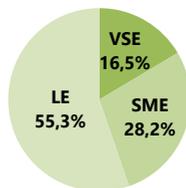
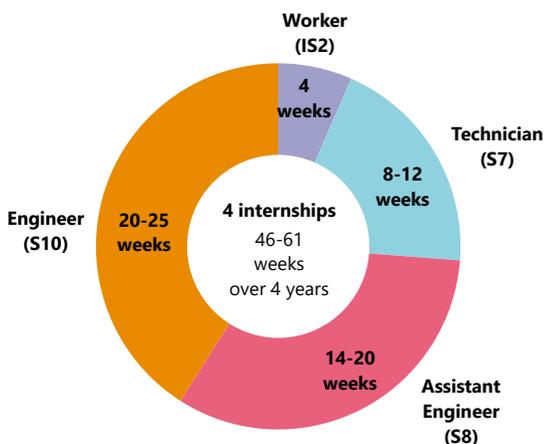
Year 4	
(S8)	
Subjects	Teaching hours
English (Preparation for TOEIC)	15H
Labor law	15H
4 Optional modules	144H
Assistant engineer internship (14 to 20 weeks)	

Optional modules	
Industrial engineering	Corporate purchase management
International management	Team management
Managerial skills development	Introduction to marketing for engineers
Entrepreneurship	Solidarity economy & sustainability
Sociology of work	Industrial design
Quality & environmental quality	Geopolitics
History of technology & philosophy of science	Introduction to research

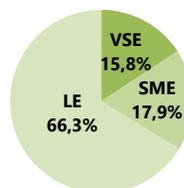
## Year 5 (S9 and S10)

S9	S10	
Subjects	Teaching hours	Engineer/end-of-study internships (20 to 25 weeks)
Languages	42H	
Industrial design	21H	
3 Optional modules	252H	
Project (electronics, computing or mechatronics)	84H	

Optional modules	
Radio frequency communication systems	Digital communications & optical transmissions
Signal & image processing	System-on-Chip design
Methods for information systems development	Virtual reality & environments
Interactive application design	Artificial intelligence & simulation
Materials & advanced design	Vibration mechanics & finite element method
Modeling in robotics & autonomous robotics	Systems control



S8 Internship  
Assistant Engineer



S10 Internship  
Engineer

## Industrial internships Business training by companies



## The **inter-semester**s take the form of breaks between the 2 semesters of the first 3 years

Inter-semester IS1 and IS3 take a “**different approach**” to learning. Alongside technical modules such as documentary research or training in specific software, all students take some non-technical “**social**” modules. Theatre plays an important role at this stage, to facilitate public speaking (1<sup>st</sup> year) or to increase awareness of all kinds of discrimination (improvisational theatre in the 3<sup>rd</sup> year). Citizenship training integrating current issues such as “**living with others**” is combined with introductory courses: make short audio (1<sup>st</sup> year) and video (3<sup>rd</sup> year) recordings. The students also participate in the science popularization project “petits débrouillards” and have a hands on experience, as recommended by Charpak, with the association “la caisse clous”.{9} All students also take a first aid course, which forms part of this approach. In addition to these elements, a conference series is organized around a specific theme: sustainability, science and magic, etc.



# Inter-semesters

## Humanism and critical thinking

	Expression		Enterprise		Engineer and Citizen			
IS1	Writing workshop	12h	Meeting with ENIB engineers	6h	Health and Safety at Work Certificate	12h		
	Radio documentary	12h			Critical thinking skills	12h		
	Theatre	48h						
IS2			“Worker” internship, discovering a company	4 weeks				
IS3	Video documentary	12h	Enterprise day	6h	Diversity awareness	12h		
	Science and technology in the media	48h	Meeting with former workers	12h				
			Team management	12h				
IS4	Mind maps	30h	Marketing	30h	Research initiation	30h		
			Intercultural skills	30h				
			Decision Making	30h	Entrepreneurship	30h	Industrial design	30h
			Team Management	30h				
			Industrial Engineering 1	30h				
Industrial Engineering 2	30h	Philosophy of science	30h					
Quality	30h	Sociology of work	30h					





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MORE INFORMATIONS  
INTERNATIONALE@ENIB.FR



MINISTÈRE  
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ET DE L'INNOVATION



Commission  
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