

Study programme

CPII & Engineering Cycle

2021/2022



The Engineering Program offered at ECAM Strasbourg-Europe is a five-year program composed of two main cycles: the CPII (*Cursus Préparatoire avec Immersion à l'International*) and the Engineering Cycle.

The CPII takes 2 years and follows the French national educational program with subjects like Physics, Chemistry and Engineering Sciences. Then, students follow their second year abroad or one semester (4th semester) if they wish.

The Engineering Cycle is oriented Mechanical and Electrical Engineering. Students also have classes in Robotics, Industrial Engineering, Management and Languages.

On top of classes, ECAM Strasbourg-Europe offers laboratory projects in different fields of study, either as a complement or as an isolated assignment. Students can request a laboratory project indicating the number of credits required, the subject of their interest and the foreseen project period by sending an e-mail to: leandro.didomenico@ecam-strasbourg.eu.

International students are likely to integrate the Engineering Cycle, years 3, 4 and 5, from our five-year program. If they want to integrate years 1 or 2, please see page 12.

Semester 5 (English)	ECTS English
Computer sciences: <i>(EC05-Algo)</i> Introduction to algorithm and programming language	(3) 3
Material sciences and engineering: <i>(EC05-Mat)</i> Physics of metallic materials	(3) 3
Mechanical engineering: <i>(EC05-Méca)</i> General Mechanics <i>(EC05-ConMéca)</i> Mechanical design	(5) 2,5 2,5
Industrial engineering: <i>(EC05-Proclndus)</i> Industrial Processes <i>(EC05-LeanQua)</i> Quality in Lean management	(2) 1,25 0,75
Language skills: <i>(EC05-Ang)</i> English language <i>(EC05-All)</i> German language	(3) 1,5 1,5
TOTAL ECTS	16

Semester 5 (French)	ECTS French
Scientific Basis: <i>(EC05-ProbStat)</i> Statistics and Probability <i>(EC05-LogCom)</i> Combinational and Sequential Logics	(4) 2,5 1,5
Electrical engineering and automation: <i>(EC05-Elecana)</i> Analogical Electronics <i>(EC05-elecTri)</i> Automation	(4) 2 2
Industrial engineering: <i>(EC05-Initent)</i> Introduction to industrial processes	(1) 1
Social and Management Skills: <i>(EC05-ProjProf)</i> Professional Project 3* <i>(EC05-Com)</i> Communication* <i>(EC05-Accom)</i> Intercultural Support and Engineer's Ethics	(3) 1 1 1
Student Commitment 5 <i>(EC05-Engagement)</i> Project in commitment 5	(2) 2
TOTAL ECTS	14

*these classes can be followed in English

Semester 6 (English)	ECTS English
Computer sciences: (EC06-Prog) Object-oriented programming (Java) (EC06-ProjInfo) Management of computer projects	(2) 1 1
Materials science and engineering: (EC06-RDM) Theory of material strength	(3) 3
Mechanical engineering: (EC06-MécaSys) Mechanical Assembly and power transmission (EC06-ConMeca) Computer Aided Design (CAD)	(4) 2 2
Industrial engineering: (EC06-SixSigma) Lean Six Sigma	(2) 2
Language skills: (EC06-Ang) English language (EC06-All) German language*	(3) 1,5 1,5
Student Commitment 6 (EC05-Engagement) Project in commitment	(2) 2
Majors (EC06-SemEXP) Expertise week	(2) 2
Engineering Project (from 3 to 12 credits if requested)	(3)
TOTAL ECTS	21

Semester 6 (French)	ECTS French
Social and Management Skills: (EC06-ProjProf) Personal & Professionnel Projets 6 (EC06-Accom) Intercultural Support and Engineer's Ethics 6 (EC06-Com) Communication 6	(2) 0,6 0,8 0,6
Industrial engineering: (EC06-Proplnt) Intellectual property (EC06-StoMet) Stocks & Methods	(2) 0,5 1,5
Electrical engineering and automation: (EC06-Moteur) Electric machines (EC06-ElecCAO) Electronic CAO (EC06-Puissance) Power and transformers	(5) 2 1 2
TOTAL ECTS	9

Fourth Academic Year

ECAM 4

In **bold**: the Units with the total number of ECTS credits in parenthesis.

Semester 7 (English)	ECTS English
Computer Sciences (EC07-BDD) Introduction to Data Base (SQL)	(2) 2
Electrical Engineering and Automation (EC07-SystEmb) Integrated systems (EC07-ElecPuis) Power Electronics	(5) 3 2
Mechanical Engineering (EC07-Vib) Vibrations (EC07-MEF) Finite Element Method (EC07-MecaFlu) Fluid Mechanics	(7) 2,5 2 2,5
Industrial Engineering (EC07-Indus) Industrialisation (EC07-InnoCon) Innovation & Conception (EC07-PrevPlan) Planification (EC07-EcoCon) Eco-design to Innovation	(6) 1 1,2 1,8 2
Project 7 (EC07-ProjTech1) Technical Project 7	(4) 4
Social and Management Skills (EC07-GesProj) Project Management (EC07-ProjProf) Professional Project 3* (EC07-Accom) Intercultural Support and Engineer's Ethics 3*	(3) 1 1 1
Language Skills (EC07-Ang) English language (EC07-All) German language	(3) 1,5 1,5
TOTAL ECTS	30

*these classes are mostly in French but can be followed in English

Semester 8 (English)	ECTS English
Computer Sciences <i>(EC08-Archi)</i> Network architecture and security	(2) 2
Electrical Engineering and Automation <i>(EC08-Asser)</i> Servicing and regulation <i>(EC08-CompoProg)</i> Programmable Components <i>(EC08-Instru)</i> Instrumentation	(4) 2 1 1
Materials Science and Engineering <i>(EC08-Ceram)</i> Polymer and Ceramic <i>(EC08-Trait)</i> Thermal treatment and corrosion	(3) 1 2
Mechanical engineering <i>(EC08-TransTherm)</i> Thermal Transfer <i>(EC08-MachinTherm)</i> Thermodynamics and Thermal Machines	(4) 1,8 1,2
Industrial engineering <i>(EC08-Supply)</i> Supply Chain Management <i>(EC08-MaintQual)</i> Quality and maintenance	(3) 1.5 1.5
Project 8 <i>(EC08-ProjTech2)</i> Technical Project 8	(4) 4
Social and Management Skills <i>(EC08-Accom)</i> Intercultural Dialogue & Engineering Ethics <i>(EC08-ProjProf)</i> Personal and Professional Projects	(2) 1 1
Language skills <i>(EC08-Ang)</i> English language <i>(EC08-All)</i> German language	(3) 1,5 1,5
16-week internship (4 months)	(6) 6
TOTAL ECTS	30

Fifth Academic Year

ECAM 5

Semester 9 – Common classes (English)	ECTS English
R & D project (EC09-PRD) Research and development project	(9) 9
Economy and Law: (EC09-Achat) Technical purchasing & Negotiation (EC09-Mark) Marketing – Market study	(2) 1 1
Social and Management Skills (EC09-ProjProf) Professional project (EC09-Accom) Intercultural Support and Engineer's Ethics (EC09-Manag) Engineering Management	(3) 1 0.5 1.5
Language skills: (EC09-Ang) English language or TOEIC Preparation (EC09-All) German language or WiDaF preparation*	3 1,5 1,5
TOTAL ECTS	17,5

Semester 9 – Common classes (French)	ECTS English
Economy and Law: (EC09-Entrep) Entrepreneurship (EC09-GesComp) Financial management (EC09-Droit) French labor and company law	(4) 1,5 1,5 1
TOTAL ECTS	4

On top of *common classes*, students will take part in one of the following majors:

Semester 9 – Majors (English)	ECTS English
1. Innovation and Intellectual property	9
<i>(EC09-IPI-Strat)</i> Innovation & Strategy	1
<i>(EC09-IPI-Crea)</i> Innovation & Creativity	1,5
<i>(EC09-IPI-Proto)</i> Innovation & Prototypes	4
<i>(EC09-IPI-Réso)</i> Innovation & Solving problems	1,5
<i>(EC09-IPI-Prop)</i> Innovation & Intellectual property	1
2. Management of Industrial Information Systems:	9
<i>(EC09-MSII-Lean IT)</i> Lean IT	1,5
<i>(EC09-ERP)</i> ERP and Business intelligence	2
<i>(EC09-MSII-ProjIoT)</i> Internet of Things Project (IoT)	2
<i>(EC09-Sécu)</i> Security: networks and software	1,5
<i>(EC09-BigData)</i> Big Data for Companies	2
TOTAL ECTS	9

Semester 9 – Majors (French)	ECTS French
3. Lean Manufacturing	9
<i>(EC09-LM-Fondamentaux)</i> the basis of continuous improvement	2
<i>(EC09-LM-Accom)</i> Personnel assistance	1,5
<i>(EC09-LM-Flux)</i> Flux	2
<i>(EC09-LM-Process)</i> Processes	2
<i>(EC09-LM-Performance)</i> Performance in Lean	1,5
4. Materials and Sustainable Development	9
<i>(EC09-DD-Juridique)</i> Law and society	2
<i>(EC09-AspectEner)</i> Energy	2
<i>(EC09-AspectMat)</i> Material (ENG)	1,5
<i>(EC09-PerfEner)</i> Energy performance	2
<i>(EC09-AspectEco)</i> Economy	1,5
TOTAL ECTS	9

Semester 10	ECTS
21-week internship (6 months)	30

The CPII is a unique program in France where students spend the first year at ECAM Strasbourg-Europe and the second year abroad. For some students, they spend only one semester abroad (S4).

This program unifies the technical competences with language skills creating internationally oriented engineers.

Students have the possibility to spend semesters 3 and 4, or only semester 4, abroad in four different linguistic paths:

- German
- English
- Spanish
- French (for non-native speakers of French)

When these students come back from their year abroad, they integrate our third year, the engineering cycle.

First Academic Year

CPII

Semester 1 (English)	ECTS English
Electrical engineering and automation: Electricity	(6) 6
Language skills: English language German language	(4) 2 2

Semester 1 (French)	ECTS French
Scientific basis: Mathematics 1 Physics 1	(12) 7 5
Computer sciences: Web technologies	(2) 2
Mechanical engineering: Mechanical design (conception) 1	(3) 3
Social and Management Skills: Professional project Intercultural Support and Engineer's Ethics Communication	(3) 1 0.5 1.5

Semester 2 (English)	ECTS English
Computer sciences: Industrial Informatics	(2) 2
Electrical engineering and automation: Automatism Electronics 2	(6) 2 4
Language skills: English language 2 German language 2	(4) 2 2

Semester 2 (French)	ECTS French
Scientific basis: Mathematics 2 Physics 2	(12) 7 5
Mechanical engineering: Mechanical design (conception) 2	(3) 3
Social and Management Skills: Professional project 2 Intercultural Support and Engineer's Ethics 2 Communication 2	(3) 1 0.5 1.5

Second Academic Year

CPII

Semester 3 (English)	Hours in English
Computer Sciences: Informatics	(2) 2
Electrical Engineering and Automation: Embedded Systems	(2) 2
Language skills: English language German language Linguistic Project	(6) 2 2 2

Semester 3 (English)	Hours in English
Scientific Basis: Mathematics 2	(5) 5
Mechanical Engineering: Mechanical design (conception) 2 Systems	(5) 2 3
Industrial Engineering: Processes Mechatronics project	(6) 2 4
Material Sciences: Materials	(2) 2
Social and Management Skills: Professional project 2 Intercultural Support and Engineer's Ethics 2	(2) 1 1

Semester 4 is conducted abroad. For the complete program abroad, visit: <http://ecam-strasbourg.eu/wp-content/uploads/2017/11/Syllabus-ECAM-CPI-v4.pdf>

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