esaip La Salle ÉCOLE D'INGÉNIEURS

GRADUATE ENGINEERING SCHOOL

Environment and Risk Management Engineering Program

Cti Commission des titres d'ingénieur

European Accreditation of Engineering Programmes EUR-ACE®

EESPIG ENSEIGNEMENT SUPÉRIEUR PRIVÉ D'INTÉRÊT GÉNÉRAL LOI DU 22.07.2013

FESIC

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ENVIRONMENT AND RISK MANAGEMENT CYCLE

ENGINEER 3

Fundamental ENVIRONMENT AND RISK MANAGEMENT (1 semester)

Abroad mobility in a partner university (1 semester)

Intermediate internship (2 months)

ENGINEER 4

Advanced ENVIRONMENT AND RISK MANAGEMENT (2 semesters)

Specialization – 75 hours
ENVIRONEMENT AND ENERGY TRANSITION

Specialization (Advanced)- 150 hourse
ENVIRONEMENT AND ENERGY TRANSITION

Expert internship (3 months)- Summer

ENGINEER 5

Abroad mobility in a partner university (1 semester)

Engineer internship (6 months)

ENVIRONMENT & RISK MANAGEMENT

The courses allow students to develop broad knowledge and skills in risk management and environment engineering (Environment & circular economy, energy management, overall safety & crisis management, prevention of industrial and natural risks, QHSE, environment and energetics transition) but also, in general engineering culture (communication, foreign languages, project management, management).

Main Topic
during the 4th year
(equivalent of First year of Master)

Engineering program

Year 4

Sept – Dec : Integration program, Intensive French Courses, Courses & Projects on Campus
Jan – June : Courses & Projects, on Campus, French Courses

Technical Internship (3 months)

MAJOR ENVIRONMENT AND ENERGY TRANSITION

ONE SPECIALISATION
during the 4th year

In this specialization, students will learn and develop the knowledge and skills needed to address a wide range of critical issues, including managing transitions to climate-neutral living, fostering sustainable development in the face of global environmental challenges, and navigating European energy regulation and transition. This comprehensive program equips students with the necessary expertise to understand and manage the energy sector, its resources, structures, and institutions, all while actively contributing to Europe's efforts in combating climate change and advancing the circular economy.

Your goals:

- Maximise the energy efficiency of companies and territories
- Reduce the use of unsustainable ressources
- Support companies and territories in transitioning to a sustainable development

WINTER SEMESTER (S7)

*In Year 4, **S7** of ERM will introduce you to fundamenal knowledge on engineering sciences and management of risks and organisations. Here are examples of courses that you will be able to take part in:*

ENGINEERING SCIENCES: *This unit will give you **statistic and analytic tools** to deepen your understanding of specific fields such as **toxicology** and **chemicals kinetics**, **mechanics of applied fluids** and **animal physiology**.*

ORGANISATION MANAGEMENT: *This unit will be useful to get an overview on how organisations operates. It involves the study of **Labor Law** and **finance**, **conflict** and **production**.*

RISK MANAGEMENT: *This unit will have you understand **how risks can be managed** in terms of **Human factor** and **natural hazards** or **dangerous goods**. You will learn about environmental Risk Assessment and **Environmental Law** as well as regulations while studying concepts like water management, the basics of the fire or chemical risks in regard to the ISO standards.*

CORE COURSES – WINTER SEMESTER

GRE4 S7	EDUCATIONNAL UNIT	CONTENT	COEF	ECTS	SESSIONS	HOURS
CORE COURSES	ENGINEERING SCIENCES 7	Statistical tools 7	3	4	10	15
		Mechanics of applied fluids 7	2		5	7,5
		Chemical kinetics and analyzes	4		10	15
		Science and Research Initiation Project	1		1	1,5
	MANAGEMENT OF ORGANIZATIONS 7	Geographic information system	1	4	5	7,5
		Labor law	1		6	9
		SSAT / GRH: Conflict management	1		5	7,5
		Financial management	2		9	13,5
		Production management	2		5	7,5
		Processus approach	2		5	7,5
		ISO Standards	1		8	12
	RISK MANAGEMENT 7A	Ergonomics: TMS and Working atmosphere	3	4	12	18
		Transport Dangerous goods and ADR	2		5	7,5
		Human factor	3		12	18
		Fire prevention	1		5	7,5
	RISK MANAGEMENT 7B	Natural hazards	3	4	9	13,5
		Environmental Risk Assessment	1		5	7,5
		Environmental Law & ICPE Regulation	2		6	9
		Water concept and management, SAGE and SDAGE	1		5	7,5
		Chemical risk & ATEX	2		6	9
	PROJECT 7	Application Project	1	2	3	4,5
	COMMUNICATION & PROFESSIONNAL AND PERSONNAL PROJECT 7	Written communication	3	3	5	7,5
		Oral communication	3		5	7,5
		Professionnal and personnal project	4		5	7,5
	INTERNATIONAL CULTURE 7	English	5	3	18	27
		French	5		20	30
			TOTAL	24	190	285

Specialty: ENVIRONMENT AND ENERGY TRANSITION	6	50	75
TOTAL	30	240	360

Specialty of ENVIRONMENT AND ENERGY TRANSITION

➢ In Winter Semester:

GRE4 S7	UE	Courses	Sub-Categories	Credits	Number of Sessions	Hours
Specialty of ENVIRONMENT AND ENERGY TRANSITION	TERRITORIES IN TRANSITION	Territories and Energy	Climate collage	6	2	3
			Decarbonisation of Economy (ACT)		6	9
			Energy efficieny of building		8	12
			Climate plan		3	4,5
			Emergy/Nexus		5	7,5
		Territories and Environment	Life cycle assesment		10	15
			Bioeconomy/ Circular economy (Concepts and introduction)		4	6
			Corporate Social Responsibility (CSR)		4	6
			Application of GIS		5	7,5
		Project	Initial Project on the topic of specialty		3	4,5
				6	50	75

CORE COURSES – SPRING SEMESTER

GRE4 S8	EDUCATIONNAL UNIT	CONTENT	COEF	ECTS	SESSIONS	HOURS
CORE COURSES	ENGINEERING SCIENCES 8	Statistical tools 8	3	2	10	15
		Mechanics of applied fluids 8	1		5	7,5
		Animal physiology	3		10	15
		Science and Research Initiation Project	1		1	1,5
	MANAGEMENT OF ORGANIZATIONS 8	Labor law	2	2	6	9
		SSAT / GRH: Stress and personality	2		5	7,5
		Risk management in projects	2		5	7,5
		Financial management	3		5	7,5
		ISO 26000 standard	1		4	6
	RISK MANAGEMENT 8	Human factor	3	3	12	18
		Ergonomics	2		8	12
		Plan, Design of structures and site safety	2		8	12
		Audit	1		5	7,5
		ISO 31000 standard	1		4	6
	PROJET 8	Business Application Project	1	3	2	3
	COMMUNICATION & PROFESSIONNAL AND PERSONNAL PROJECT 8	Written communication	3	2	5	7,5
		Oral communication	3		5	7,5
		Professionnal and personnal project	4		4	6
	INTERNATIONAL CULTURE 8	French	1	2	24	36
			TOTAL	**14**	**128**	**192**

MINOR	**2**	**12**	**18**
Specialty: ENVIRONMENT AND ENERGY TRANSITION	**14**	**100**	**150**
TOTAL	**30**	**240**	**360**

SPRING SEMESTER (S8)

*In Year 4, **S8** of GRE/ERM will deepen the knowledge you have acquired on the previous semester. Here are examples of courses that you will be able to take part in:*

ORGANISATION MANAGEMENT: *This unit deepens your understanding of **Labor law** and the management of **finances** or **risks** in projects. You will also have a look at stress and personality in management.*

RISK MANAGEMENT: *This unit adds the study of **plan and design of structures** and **site safety** to the **Human factor**. You will also be using the ISO 31000 standard as a subject of study.*

FRENCH LANGUAGE AND INTERNATIONAL CULTURES: *Oral and written courses on foreign culture will help you **fit in** and enjoy the French lifestyle in Angers. That way, you will be able to bound more easily with various people and experience exceptional outings.*

SPECIALISATION ENVIRONMENT AND ENERGY TRANSITION

➢ In S8: Advanced Level

GRE4 S8	UE	Courses	Sub-Categories	Coef.	Credits	Number of Sessions	Hours
Specialty of ENVIRONMENT AND ENERGY TRANSITION	ENERGIES IN TRANSITION	Alternative Energy	Energy global issues	5	5	4	6
			Heat network			4	6
			Industrial and Territorial Ecology			4	6
			Sustainable mobility			4	6
			Ecodistricts			4	6
			Energy audits			8	12
		Sustainability	Solar power	5		4	6
			Wind power			4	6
			Biomass			4	6
			Heat pump			4	6
			Storage			4	6
			Economic aspects				0
	ENVIRONMENT IN TRANSITION	Circular economy	Life Cycle Assesment (Application)	5	6	8	12
			Decarbonisation of the econmy act			4	6
			Circular Economy Collage			2	3
			Smart Cities- ECOCITIES			10	15
		Sustainability	Sustainable Development	5		10	15
			Bilan carbone - Concepts/intro			4	6
			Responsibile communication/GreenWashing			4	6
			Ecoconception and Environmental labeling			5	7,5
	Application Project			TOTAL	3	5	7,5
				TOTAL	**14**	**100**	**150**

QUESTIONS