



## ISEN YNCREA MEDITERRANEE

# Course Offering Language of Instruction: English and French

*(course details are subject to change)*

***Please note: All courses are taught in English during Master 1 Fall semester. These courses are available to Master level students and Bachelor level students with adequate prerequisites.***

***During Master 1 Spring semester, the specializations of Embedded Systems and Software Development are taught in English, and the remaining options are taught in French.***



## FALL SEMESTER

*Please note: All courses are taught in English during Master 1 Fall semester. These courses are available to Master level students and Bachelor level students with adequate prerequisites*

### Specialization: Software Development / Big Data (Master 1, Fall Semester)

Module	Courses	ECTS
<b>Artificial Intelligence</b>	Generative Artificial Intelligence Dev Platform ( <i>syllabus pending</i> ) Tools AI level 1	3
<b>System Development</b>	System Architecture Linux Shell Language security programming	4
<b>Cloud Deployment (Cyber &amp; Dev)</b>	Microservice Application Programming Interfaces Cloud Computing	4
<b>Software Development</b>	Advanced Java C++ Software Engineering	5
<b>Technical Project</b>	Technical project	11
<b>Social and Human Sciences</b>	Social and Human Sciences	2
<b>Language</b>	English or French	1
<b>Total</b>		<b>30</b>

### Specialization: Embedded Systems / Robotics (Master 1, Fall Semester)

Module	Courses	ECTS
<b>Artificial Intelligence</b>	Generative AI Dev Platform ( <i>syllabus pending</i> ) Tools AI level 1	3
<b>Microcontroler &amp; Interfaces</b>	Sensors STM 32 Edge AI STM 32 level 1 + AI	4
<b>System development</b>	Linux Shell Labview Labview FPGA	4
<b>IoT Engineering Systems</b>	RTOS Power- Consumption management <i>Course pending</i>	5
<b>Technical Project</b>	Technical project	11
<b>Social and Human Sciences</b>	Social and Human Sciences	2
<b>Language</b>	English or French	1
<b>Total</b>		<b>30</b>

## Specialization: E-Health (Master 1, Fall Semester)

Module	Courses	ECTS
<b>Artificial Intelligence</b>	Generative AI Dev Platform ( <i>syllabus pending</i> ) Tools AI level 1	3
<b>Microcontroller and Interfaces</b>	Sensors STM 32 Edge AI STM 32 level 1 + AI	4
<b>System development</b>	Linux shell Network Labview Labview Embedded	4
<b>E-Health</b>	Introduction to E-Health Molecular biology DNA and microfluidic practical work (processing of bioelectric signals for E-Health) Anatomy	5
<b>Technical Project</b>	Technical project	11
<b>Social and Human Sciences</b>	Social and Human Sciences	2
<b>Language</b>	English or French	1
<b>Total</b>		<b>30</b>

## Specialization: Smart Energy (Master 1, Fall Semester)

Module	Courses	ECTS
<b>Artificial Intelligence</b>	Generative AI Dev Platform ( <i>syllabus pending</i> ) Tools AI level 1	3
<b>Microcontroller &amp; Interfaces</b>	Sensors STM 32 Edge AI STM 32 level 1 + AI	4
<b>System development</b>	Linux Shell Labview Labview Embedded	4
<b>IoT Engineering Systems</b>	RTOS Power- Consumption management <i>Course pending</i>	5
<b>Technical Project</b>	Technical project	11
<b>Social and Human Sciences</b>	Social and Human Sciences	2
<b>Language</b>	English or French	1
<b>Total</b>		<b>30</b>



## Specialization: Cyber Security (Master 1, Fall Semester)

Module	Courses	ECTS
<b>Artificial Intelligence</b>	Generative AI Dev Platform ( <i>syllabus pending</i> ) Tools AI level 1	3
<b>System development</b>	System Architecture Linux Shell Security programming languages	4
<b>Cloud Deployment (Cyber &amp; Dev)</b>	Microservice Application Programming Interfaces Cloud Computing	4
<b>Introduction Cyber</b>	Fundamentals of Cyber Crypto Level 1	5
<b>Technical Project</b>	Technical project	11
<b>Social and Human Sciences</b>	Social and Human Sciences	2
<b>Language</b>	English or French	1
<b>Total</b>		<b>30</b>

## Specialization: IoT (Master 1, Fall Semester)

Module	Courses	ECTS
<b>Artificial Intelligence</b>	Generative AI Dev Platform ( <i>syllabus pending</i> ) Tools AI level 1	3
<b>Microcontroler &amp; Interfaces</b>	Sensors STM 32 Edge AI STM 32 level 1 + AI	4
<b>System development</b>	Linux Shell System Architecture UML Microservice	4
<b>IoT Engineering Systems</b>	RTOS Consumption Study and management Architecture UML IoT	5
<b>Technical Project</b>	Technical project	11
<b>Social and Human Sciences</b>	Social and Human Sciences	2
<b>Language</b>	English or French	1
<b>Total</b>		<b>30</b>



## SPRING SEMESTER

Please note: During Master 1 Spring semester, the specializations of Embedded Systems and Software Development are taught in English, and **the remaining options are taught in French.**

### Specialization: Software Development / Big Data (Master 1, Spring Semester)

Module	Courses	ECTS
<b>Mobile Development</b>	Natif Mobile Development BDD noSQL	4
<b>Dev Security</b>	Deliverable Security Security Introduction	4
<b>Dev Web</b>	Web Dev JEE	4
<b>Technical Project</b>	Technical project	15
<b>Social and Human Sciences</b>	Social and Human Sciences	2
<b>Language</b>	English or French	1
<b>Total</b>		<b>30</b>

### Specialization: Embedded Systems (Master 1, Spring Semester)

Module	Courses	ECTS
<b>Physics &amp; Security</b>	Physics of Components Security Architecture	4
<b>Digital Electronics &amp; Advanced Analog</b>	STM32 level 2 Electronic analog level 2 BLE Embedded ( <i>syllabus pending</i> )	4
<b>Microelectronic Design Analog</b>	Basic Design Conception and tools Analog IC	4
<b>Technical Project</b>	Technical project	15
<b>Social and Human Sciences</b>	Social and Human Sciences	2
<b>Language</b>	English or French	1
<b>Total</b>		<b>30</b>

**Specialization: Robotics (Master 1, Spring Semester, taught in French)**

Module	Courses	ECTS
<b>Physics &amp; Security</b>	Security Architecture RISE	3
<b>Robotics</b>	STM32 level 2 Robotic Control Robotic CAPTORS	5
<b>Analog Design</b>	Basic Design Conception & Tools Analog IC	4
<b>Technical Project</b>	Technical project	15
<b>Social and Human Sciences</b>	Social and Human Sciences	2
<b>Language</b>	English or French	1
<b>Total</b>		<b>30</b>

**Specialization: E-Health (Master 1, Spring Semester, taught in French)**

Module	Courses	ECTS
<b>E-health Mobile development</b>	E-health Mobile Development	3
<b>Bio Electricity</b>	Analog Electronics and instrumentational Electrical Characterization of tissues Practical work bio electricity	4
<b>Imagery</b>	Image Processing Medical and cellular imaging AI cancer diagnosis with biopsy image	5
<b>Technical Project</b>	Technical project	15
<b>Social and Human Sciences</b>	Social and Human Sciences	2
<b>Language</b>	English or French	1
<b>Total</b>		<b>30</b>

**Specialization: Smart Energy (Master 1, Spring Semester, taught in French)**

Module	Courses	ECTS
<b>Mobile Platform development</b>	Mobile Development level 1 and 2 DEV BLE	4
<b>Security and Solar in P2</b>	Security Architecture Security Hardware IOT SE	4
<b>Energy</b>	Solar Energy and Organic PV Energy Network S3ENR	4
<b>Technical Project</b>	Technical project	15
<b>Social and Human Sciences</b>	Social and Human Sciences	2
<b>Language</b>	English or French	1
<b>Total</b>		<b>30</b>

**Specialization: Cyber Security (Master 1, Spring Semester, taught in French)**

Module	Courses	ECTS
<b>Security Networks</b>	Network Security Crypto Level 2	4
<b>Embedded Security</b>	Hardware Security IoT Security	4
<b>Security Systems</b>	Linux Security Web Application Security	4
<b>Technical Project</b>	Technical project	15
<b>Social and Human Sciences</b>	Social and Human Sciences	2
<b>Language</b>	English or French	1
<b>Total</b>		<b>30</b>

**Specialization: IoT (Master 1, Spring Semester, taught in French)**

Module	Courses	ECTS
<b>Security</b>	Security Architecture Security Hardware	4
<b>Conception and communication of IoT Systems</b>	Architecture UML IoT IoT Data Communication	4
<b>Mobile Platform Development</b>	Mobile Development Level 1 & 2 Development BLE	4
<b>Technical Project</b>	Technical project	15
<b>Social and Human Sciences</b>	Social and Human Sciences	2
<b>Language</b>	English or French	1
<b>Total</b>		<b>30</b>

