

# English-taught offer: Computer Science

ENSSAT  
LANNION



ENSSAT, University of Rennes, Lannion campus · engineering degree, years 2 and 3 (EQF level 7) · updated 25 September 2026

## Spring semester year 2 · available now · 24 ECTS of technical courses, 288 studying hours · 30 ECTS in all

The semester is made of **three majors** of 6 ECTS and **three minors** of 2 ECTS. In English, one set of majors is open, and it is a consistent one: **artificial intelligence, embedded systems and connected objects**. Two of the three minors come with it; the third one is a choice, and it is where a student leans towards artificial intelligence or towards embedded systems. The last 6 ECTS of the semester are the three modules at the bottom, to be confirmed with the international office.

|         |                                                                                                                                                                                                              |                                                                                                                                                                                                        |                                                 |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| Major 1 | <div>Artificial Intelligence<br/><i>Intelligence artificielle</i><br/>· Artificial intelligence (72 h)<br/>6 ECTS · 72 h</div>                                                                               | <div>Cybersecurity<br/><i>Cybersécurité</i><br/>· Cybersecurity (36 h)<br/>· Hardware security (8 h)<br/>· Cryptography (28 h)<br/>6 ECTS · 72 h</div>                                                 |                                                 |
| Major 2 | <div>Embedded Systems<br/><i>Systèmes embarqués</i><br/>· Embedded operating systems (26 h)<br/>· Real-time scheduling (22 h)<br/>· Approximate computing (24 h)<br/>6 ECTS · 72 h</div>                     | <div>Databases<br/><i>Bases de données</i><br/>· Relational databases (48 h)<br/>· Logic &amp; KRR (24 h)<br/>6 ECTS · 72 h</div>                                                                      |                                                 |
| Major 3 | <div>Digital and Wireless Communications<br/><i>Objets connectés (IoT)</i><br/>· Digital communications (32 h)<br/>· x-G wireless communications (22 h)<br/>· Sensor networks (18 h)<br/>6 ECTS · 72 h</div> | <div>Theoretical Computer Science<br/><i>Informatique théorique</i><br/>· Formal languages and compilation (34 h)<br/>· Recurrence equations (20 h)<br/>· Computability (20 h)<br/>6 ECTS · 74 h</div> |                                                 |
| Minor 1 | <div>Introduction to Cybersecurity<br/><i>Cybersecurity minor</i><br/>2 ECTS · 24 h</div>                                                                                                                    |                                                                                                                                                                                                        |                                                 |
| Minor 2 | <div>Introduction to Databases<br/><i>Introduction to Data bases minor</i><br/>2 ECTS · 24 h</div>                                                                                                           |                                                                                                                                                                                                        |                                                 |
| Minor 3 | <div>SoC Design<br/><i>System-on-chip copception minor</i><br/>2 ECTS · 24 h</div>                                                                                                                           | <div>AI-Assisted Programming<br/><i>AI assisted programming minor</i><br/>2 ECTS · 24 h</div>                                                                                                          |                                                 |
| Plus    | <div>French as a Foreign Language<br/>2 ECTS · 30 h</div>                                                                                                                                                    | <div>English<br/>2 ECTS · 30 h</div>                                                                                                                                                                   | <div>Physical Education<br/>2 ECTS · 30 h</div> |

☐ artificial intelligence ☐ embedded systems ☐ comes with the package ☐ languages and sports ☐ project ☐ stays in French

Everything in colour is taught in English.

Those last three modules were already in the spring catalogue and make exactly the 6 ECTS that complete the semester, to be confirmed with the international office.

Every student takes the **common major**, then **two majors of a single track** and **one minor**. Tracks are not mixed. The artificial intelligence track reproduces the offer that international students already follow today; the embedded systems track is new and still being designed; the cybersecurity track stays in French, since part of it deals with French regulations and is taught by practitioners. The technical project brings the semester to 30 ECTS; French as a foreign language and physical education come on top, as they do today. The two minors are not taught in English.

|        |                                                                                                                                                                                                                              |                                                                                                                                                                                                               |                                                                                                                                                                                                          |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Common | <b>Advanced Machine Learning</b> 6 ECTS · 72 h<br><i>Majeure commune</i> <ul style="list-style-type: none"> <li>· Advanced neural networks (28 h)</li> <li>· Embedded vision (24 h)</li> <li>· Embedded AI (20 h)</li> </ul> |                                                                                                                                                                                                               |                                                                                                                                                                                                          |
|        | <b>Artificial Intelligence track</b>                                                                                                                                                                                         | <b>Embedded Systems track</b>                                                                                                                                                                                 | <b>Cybersecurity track</b>                                                                                                                                                                               |
|        | <b>AI &amp; Data Science</b> 6 ECTS · 72 h <ul style="list-style-type: none"> <li>· Big data management (24 h)</li> <li>· AI for data management (24 h)</li> <li>· AI for database querying (24 h)</li> </ul>                | <b>High-Performance Computing</b> 6 ECTS · 72 h <ul style="list-style-type: none"> <li>· HPC processors (24 h)</li> <li>· Compilation for HPC (24 h)</li> <li>· Coprocessor software design (24 h)</li> </ul> | <b>Data Security</b> 6 ECTS · 72 h <ul style="list-style-type: none"> <li>· Forensics and pentesting (34 h)</li> <li>· Cyber data (18 h)</li> <li>· Secure software (20 h)</li> </ul>                    |
|        | <b>Generative AI</b> 6 ECTS · 72 h <ul style="list-style-type: none"> <li>· Reinforcement learning (24 h)</li> <li>· Natural language processing (24 h)</li> <li>· Image processing (24 h)</li> </ul>                        | <b>Embedded Design</b> 6 ECTS · 72 h <ul style="list-style-type: none"> <li>· Embedded systems control (24 h)</li> <li>· Power management (24 h)</li> <li>· Hardware architectures for AI (24 h)</li> </ul>   | <b>Network Security</b> 6 ECTS · 72 h <ul style="list-style-type: none"> <li>· Advanced network security (24 h)</li> <li>· Cybersecurity governance (28 h)</li> <li>· Windows security (20 h)</li> </ul> |
| Minor  | <b>Android</b> 2 ECTS · 24 h                                                                                                                                                                                                 |                                                                                                                                                                                                               | <b>Cloud Acceleration</b> 2 ECTS · 24 h                                                                                                                                                                  |
| Plus   | <b>Technical Project</b> 12 ECTS · 2 days a week                                                                                                                                                                             | <b>French as a Foreign Language</b> 2 ECTS · 30 h                                                                                                                                                             | <b>Physical Education</b> 2 ECTS · 30 h                                                                                                                                                                  |

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Until the end of 2026-2027, the autumn semester keeps its current organisation: *AI and Interaction* (7 ECTS), *AI for Data* (7), *Software Engineering* (6) and a technological project (12).

**Coming next.** Detailed syllabi, with the exact prerequisites of every course, will follow. They matter here: several courses assume a first exposure to machine learning, to relational databases or to embedded C, and incoming students should be able to check that before choosing. Contact: Jonathan Chevelu, head of the computer science department, [jonathan.chevelu@univ-rennes.fr](mailto:jonathan.chevelu@univ-rennes.fr)