

Connected Objects and the Internet of Things

Subject area: Computer Science/ICT

University: L'X
Level: BA all years, MA1, MA2
Teaching mode: completely online, not time-specific
Instructor(s): Thomas Heide Clausen

Short description

In the 21st century, a company developing a product either: has a strategy for rendering the product somehow connected; or is as disconnected from reality, as was the guy installing the bike-rack on the picture to the right. If you are, or want to be, in the first category, then this course is for you – regardless of your previous experience.

Full description

<https://synapses.polytechnique.fr/catalogue/2021-2022/ue/313/INF471C-modal-connected-objects-and-the-internet-of-things-iot?from=P1277>

Learning outcomes

Whether you are a novice, or a seasoned programmer, this tutorial-based course will bring you to having developed a complete connected object (system), and in the process taught you things such as: How a micro controller works, and how to build intelligent objects with it?
How to (efficiently) use WiFi, Bluetooth, Bluetooth/LE, IEEE 802.15.4, and other “IoT Interconnect” to connect your intelligent object to the Internet
How to “communicate to the cloud” from your connected object – in passing, understand things such as CoAp, and REST.

General information

Contact hours per week: 6
Total workload: 40 + personal work (in student hours for the whole course)
ECTS credits: 6
Language: English

Course start date:	01 September 2022
Course end date:	03 June 2023
Add. info about start date:	Individualised, can be any date, between Sept. 1, 2022 and April 1, 2023. Please note that the intended start-date must be communicated to Ecole Polytechnique at the time of registration. The course end date should be exactly 10 weeks after the start-date.
Weekly teaching day/time:	Available fully asynchronous
Time zone:	CET (Denmark, Germany, France, Netherlands, Switzerland, Czech Republic)
Further information:	An Arduino kit is required to follow this course. We can provide one kit per student considering that the kit will be sent to one of the EuroTeQ partner universities in Europe only. The student should be able to pick it up at the start of the course and return it at the end of the course.

Prerequisites: Please check: <https://synapses.polytechnique.fr/catalogue/2021-2022/ue/313/INF471C-modal-connected-objects-and-the-internet-of-things-iot>

Activities and methods: The course will be available asynchronously, fully on-line, or on-side, through learning flows with short videos, quizzes, homework, lab exercises / tutorials — as well as office-hours via Webex with professors and instructors. While being asynchronous, each student is expected to check in with an instructor over Webex, weekly, following the chosen start-date.

Presence on campus: no

Final examination

Form: Continuous assessment

Date:

Location/format: online

Re-sit possibility: no

Transcript available: end of the semester and generally 8 weeks after the exam.

Add. info/requirements:

Registration

To register for this course, follow the registration requirements of your **home university** as specified here: www.euroteq.eu/courses-registration.

Administration

Number of places: 6

Minimum participants:

Internal course code: INF471C

Contact: Interested EuroTeQ students are welcome to, at any time, to come discuss their course choices in chat, or in visio, with the instructors from Ecole Polytechnique who will be teaching the classes. To this end, a dedicated WebEx space is permanently available here: <https://eurl.io/#fCk0f6iWF>.

This course is part of the EuroTeQ Engineering University joint course catalogue 2022/2023. This is a collaborative activity of the partner universities DTU, L'X, TU/e, TalTech, CTU, TUM as well as Technion. Students from these universities can participate in the offered courses. It is the responsibility of the student to check if you fulfil the requirements to participate in a specific course. Students are also advised to check with their home institution how to get recognition of the ECTS credits gained in courses of the EuroTeQ course catalogue. For further information about EuroTeQ Engineering University, visit www.euroteq.eu or get in touch with the above-mentioned point of contact.