IMPERIAL

Module Specification

Basic details

UID		Cohorts covered	Earliest cohort: Latest c:
Long title	Laboratory in AML		
New code	ELEC70060	New short title	
Brief description of module *(approx. 600 chars.)*	This lab aims to develop skills essential for carrying out individual research projects in Deep Learning applied to EEE problems. The students will be organized in small groups (4 students) and assigned a project from robotics, computer vision or communications. The Lab will focus on structured programming exercises, data praparation, and evaluation of the developed software model. 388 characters		
Available as a standalone module/ short course?	N		

Statutory details

	ECTS	CATS	Non-credit	HECOS codes
Credit value	10	20	N	
FHEQ level	Level 7			

Allocation of study hours

	Hours	
Lectures	0	
Group teaching	0	*Incl. seminars, tutorials, problem classes.*
Lab/ practical	20	
Other scheduled	0	*Incl. project supervision, fieldwork, external visits.*
Independent study	230	*Incl. wider reading/ practice, follow-up work, completion of assessments*
Placement	0	*Incl. work-based learning and study that occurs overseas.*
Total hours	250	
ECTS ratio	25.00	

Project/placement activity

Is placement activity allowed?	No

Module delivery

Delivery mode	Taught/ Campus	Other	
Start term	Autumn	Other	

Ownership

Primary department	Electrical and Electronic Engineering
Additional teaching departments	
Delivery campus	South Kensington

Collaborative delivery

Collaborative delivery?	N
External institution	N/A
External department	N/A
External campus	N/A

Associated staff

Role	CID	Given name	Surname
Module Leader		Abd Al Rahman	Abu-Ebayyeh
Module Leader		Krystain	Mikolajczyk
Module Leader		Yassir	Jedra
Module Leader		Wenkun	He

Learning and teaching

Module description

Learning outcomes	Upon successful completion of this module, you will be able to: 1) prepare the process of developing a machine learning approach to an EEE problem 2) design an ML approach for hardware with sensors 3) prepare data collection process for typical learning tasks such as classification and regression 4) investigate and propose an ML model from a given data 5) investigate and propose the evaluation metrics for the designed device 6) critically analyse and evaluate the design and draw appropriate conclusions
Module content	The module is concerned with research and development of an embedded device with various sensors but designed such that students can support their learning with self-study. The main goal is to design a smart hardware device with sensors for a new application, which can be used to collect data for online or offline processing. A machine learning model will then be trained to analyse the data and make predictions/decisions. The AML lab activities are in groups of students that design the device and interact for the entire duration of the lab. Each student within the group takes part in group presentations of the progress and answers questions from the lab supervisors. Each group produces one report and presentation
Learning and Teaching Approach	The module is based on practical work in groups supervised by lecturers and GTAs. It is designed so that students can support their learning with self-study and group project work. Supervised laboratory exercises with demonstrators will be followed by individual works between sessions. The work is carried out in groups (for more than 50% of the activities).
Assessment Strategy	The assessment consists of a group interim report (70%), an individual video submission (30%), and a self-reflection. The interim report (produced by groups of 2–4 students) should present project progress, key milestones, a review of existing solutions, the design of the proposed AML device, and a clear plan of upcoming work, while also documenting effective collaboration. The individual assessment requires each student to submit a 2-minute video demonstrating data streaming from multiple sensors and showing clear responses to changes, with attention to circuit neatness, clarity of data variation, and presentation of live data statistics. A self-reflection on both team performance and the student's individual contribution is also included as part of the assessment.
Feedback	-Formative feedback will be provided by the lecturers and teaching assistants during the lab sessions based on students progress and results. -Summative feedback will be provided for the report produced by students' groups. - Summative feedback will be provided for the video produced by each student.
Reading list	

Quality assurance

Date of first approval	
Date of last revision	June 2026
Date of this approval	

Notes/ comments	

Template version #####

Assessment details

Grading method	Pass/Fail	Pass mark	100%

Assessments

Assessment type	Assessment description	Weighting	Pass mark	Must pass?
Coursework	Report	70%	50%	N
Practical	Individual video submission	30%	50%	N
Coursework	Self-reflection on individual performance as part of the team	0%	50%	Y
		100%		