Lab Card

Laboratory Type	Embedded Systems Lab (2)	مختبر النظم المتضمنة (2)
Building	South Building – 3rd Floor	
Capacity	14 HP PCs - 70.3 Area (m2)	

Equipment (Furniture – Appliances)	1	14 MicroTRAK/STM32F7-KU Training Kits with: ・ MINIMAX/STM32F745-KU microcontroller board ・ Universal I/O module: that has 32 switches to control the microcontroller inputs and 32 LEDs to indicate port status. ・ TB-1 peripheral board: that includes many features such as 3 Traffic light LED's (red, yellow, green), a programmable buzzer, 2 switch inputs, and many other features. ・ Expansions pins for extra peripherals: EEPROMS, RTC, motors. ・ Keypad ・ LCD ・ Bluetooth module ・ Adapter for the power supply ・ USB connections ・ Serial Connection
	2	The laboratory is equipped with: ・ Extron Control Touch Panel- for speaker ・ Projector & display curtain ・ Wall white board + portable white board ・ Small black Network Cabinet ・ Digital ceiling Camera
	3	14 PCs are equipped with: Windows10 Enterprise, OS, MS Office 365 software
	4	・ Instructor Table & Chair ・ Island Pinch Shelving + Wall Shelving ・ 13 Long Table & 13 Chairs ・ Wall White boards + Portable white board
	5	・ Good ventilation & proper lighting in the laboratory. ・ Suitable temperature for summer and winter climates. ・ The presence of curtains to prevent sunlight from entering the laboratory to maintain the devices. ・ The presence of the display screen in a suitable place for the teacher and students.

Section 3 software table:

Vision	7-Zip
Adobe	PyCharm Community Edition
Python	SQL Developer
VLC Media Player	Eclipse for JAVA
Cisco Packet Tracer	MATLAB
IMB Rational Software	Visual Studio
Safe Exam Browser	Voice Recorder
IBM Rational Software Architect Designer	Mixed Reality Portal
Quartus II 13.1(64-bit) Web Edition)	Paint 3d, StarUML
Micro-IDE, Arduino	Netop Vision Pro
Edsim 51	NetSupport, Snip & Sketch
Keil uVision5.	

The laboratory is equipped with: Electricity sockets & network points connected to the internal network of Kuwait University.

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Computers Status	Model: Intel(R) Core (TM) 17-8700 CPU @ 3.20GHz 3.19 GHz Memory: 16.0 GB RAM
	Printer: KYOCERA
Accommodation for people of determination	・ Allocating seating place for the disabled on the edges of corridors and rows, on flat places, near services and emergency doors. ・ The availability of the necessary spaces that allow the disabled to move and see clearly. ・ The laboratory has computers equipped with talking and screen enlargement programs.
Safety & Security	・ Doors open outward with electronic card system. ・ Fire-fighting equipment inside the laboratory: Fire Extinguisher, Fire Blanket & First Aid Kit. ・ Evacuation Plan: Presence of safety guidelines to evacuate the plant in the event of a fire. ・ Wiring extensions are safe and do not pose a risk to students. ・ Easy access to the primary electrical control switch to shut down all devices. ・ Smoke Alarm
Laboratory Uses	Teaching courses ・ Introduction to Embedded Systems Laboratory, CpE-364L ・Introduction to Embedded Systems CpE-363
Officials	Eng. Basma Alfahad
Awareness & Guidance	The presence of instructions for correct use & instructions to maintain laboratory equipment,

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This laboratory covers experimental activities for the "Embedded Systems" course and its lab (CpE-363 and CpE-364). It supports both software & hardware-oriented projects in embedded system course. Students get to program the ARM Cortex-M microcontroller in assembly and C languages using the MINIMAX/STM32F745-KU microcontroller board, a highly expandable micro-controller system with a Windows-based Integrated Development Environment and a built-in simulator/debugger. Students conduct experiments and mini projects that provide them with hands-on experience on interfacing microcontrollers with various input/output devices.
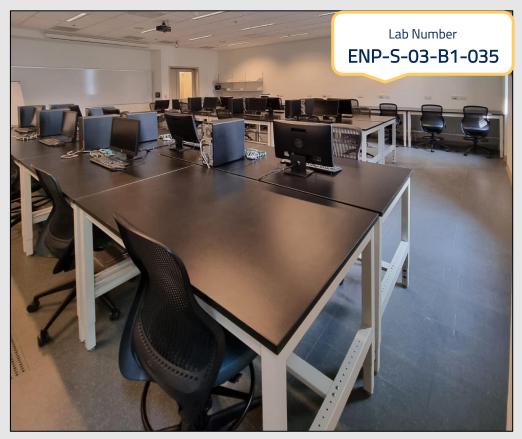
يغطي هذا المختبر الأنشطة التجريبية لمقرر "النظم المتضمنه" ومختبرها (CpE-363 و CpE-364) وهو يدعم كلا من المشاريع الموجهة نحو البرامج والأجهزة في مقرر النظم المتضمنه. يقوم الطلاب ببرمجة متحكم ARM Cortex-M بلغات Assembly و C باستخدام لوحة متحكم STM32F745-KU / MINIMAX , وهو نظام تحكم دقيق قابل للتوسيع بدرجة كبيرة مع بيئة تطوير متكاملة قائمة على Windows ومحاكي / مصحح أخطاء مدمج. يقوم الطلاب بإجراء تجارب ومشاريع صغيرة توفر لهم خبرة عملية في ربط المتحكمات الدقيقة بمختلف أجهزة الإدخال / الإخراج.
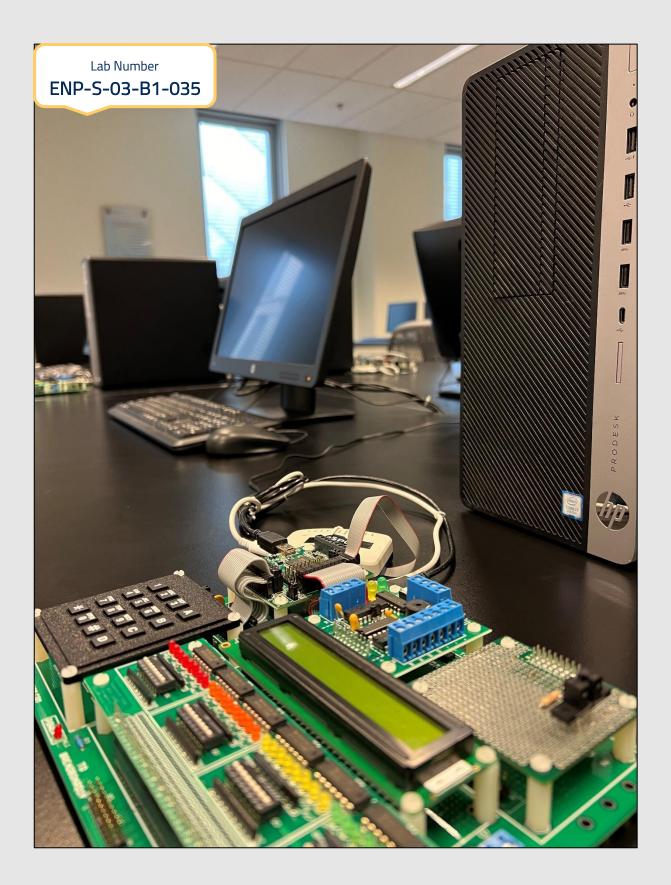
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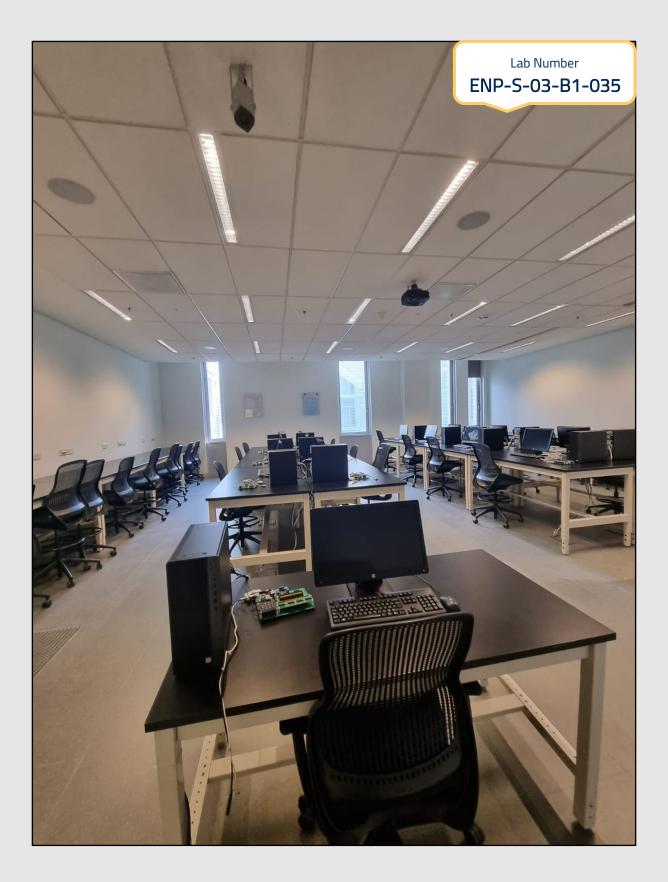

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