



Lab Card

Lab Number
ENP-S-03-B1-022

Laboratory Type	Artificial Intelligence Lab		مختبر الذكاء الاصطناعي																																											
Building	South Building – 3 rd Floor																																													
Capacity	2 PC's - 218.2 Area (m2)																																													
Equipment (Furniture – Appliances)	1	The laboratory is equipped with: <ul style="list-style-type: none"> ▪ Extron Control Touch Panel- for speaker & ceiling camera ▪ Projector & display curtain ▪ Digital ceiling Camera 																																												
	2	The laboratory is equipped with: <ul style="list-style-type: none"> ▪ electricity sockets & network points connected to the internal network of Kuwait University. ▪ <u>One Fujitsu PC</u> equipped with: Windows10 Enterprise, MS Office, Raspberry pi imager v1.8, Arduino IDE 2.3, Fischer Technik RoboPro Terminal, PyCharm Community Edition, Eclipse for JAVA, StarUML. ▪ <u>One All-in-one DELL PC</u> equipped with: Windows11 																																												
	3	<ul style="list-style-type: none"> ▪ Instructor Table & Chair. ▪ Wall Shelving. ▪ 21 Wooden Tables, 24 black tables & 20 Chairs. ▪ 9 Cabinets. ▪ White board. 																																												
			<table border="1"> <thead> <tr> <th>Sensors Description</th> <th>Quantity</th> </tr> </thead> <tbody> <tr><td>• Camera Digital color for soccer game</td><td>3</td></tr> <tr><td>• CMUCAM (C3088 1/4" color camera module with digital output)</td><td>9</td></tr> <tr><td>• Compass Magnetic (CMPS03)</td><td>10</td></tr> <tr><td>• Flame detector package - UVTron sensor</td><td>5</td></tr> <tr><td>• HB-sensor (6 bumper sensor - 4 photocells - 2 IR sensors- 2 sensor connectors)</td><td>10</td></tr> <tr><td>• Image frame grabber (My Vision)</td><td>2</td></tr> <tr><td>• IR ranging module analog - GP2D12</td><td>20</td></tr> <tr><td>• IR Sensors analog (GPD2D12)</td><td>135</td></tr> <tr><td>• IR Sensors digital (GPD2D02)</td><td>50</td></tr> <tr><td>• LDR (light sensitive resistors)</td><td>20</td></tr> <tr><td>• MOTION DETECTOR SENSOR (KC7783)</td><td>3</td></tr> <tr><td>• Optical Interrupter switch (H21A1); Break beam opt sensor</td><td>75; 20</td></tr> <tr><td>• PROXIMITY IR DETECTOR (SHARP IS471F)</td><td>10</td></tr> <tr><td>• motion detector (Pyroelectric sensor package)</td><td>5</td></tr> <tr><td>• Reflexive Sensor</td><td>30</td></tr> <tr><td>• Thermal array sensor - TPA81</td><td>5</td></tr> <tr><td>• Tilt sensor - mercury switch</td><td>5</td></tr> <tr><td>• Touch sensor (Micro Switch)</td><td>100</td></tr> <tr><td>• Ultrasonic Range Sensor (Sensor SRF08)</td><td>48</td></tr> <tr><td>• Fingerprint scanner</td><td>3</td></tr> <tr><td>• Sensor/motor kit for cricket</td><td>1</td></tr> </tbody> </table>	Sensors Description	Quantity	• Camera Digital color for soccer game	3	• CMUCAM (C3088 1/4" color camera module with digital output)	9	• Compass Magnetic (CMPS03)	10	• Flame detector package - UVTron sensor	5	• HB-sensor (6 bumper sensor - 4 photocells - 2 IR sensors- 2 sensor connectors)	10	• Image frame grabber (My Vision)	2	• IR ranging module analog - GP2D12	20	• IR Sensors analog (GPD2D12)	135	• IR Sensors digital (GPD2D02)	50	• LDR (light sensitive resistors)	20	• MOTION DETECTOR SENSOR (KC7783)	3	• Optical Interrupter switch (H21A1); Break beam opt sensor	75; 20	• PROXIMITY IR DETECTOR (SHARP IS471F)	10	• motion detector (Pyroelectric sensor package)	5	• Reflexive Sensor	30	• Thermal array sensor - TPA81	5	• Tilt sensor - mercury switch	5	• Touch sensor (Micro Switch)	100	• Ultrasonic Range Sensor (Sensor SRF08)	48	• Fingerprint scanner	3	• Sensor/motor kit for cricket
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- Scan the QR code to report an issue / malfunction.



4

Processors Description	Quantity
• BIOLOID robot kit	9
• LEGO MINDSTORM EV3	5
• VEX mechatronics kit	11
• FISCHERTECHNIK robot set	15
• FS-I6 Radio control system	5
• Lynx motion Drone	2
• ALPHA UBTECH robot	1
• OPTIC 5 Radio control system	1
• OZOBOT	30
• Fischer Technik 3D printer	2
• Raspberry pi 3	6
• Arduino Uno	30
• Ebot	6
• App-enabled Droid	10
• Dual POB robotic controller	5
• Mindset and accessories and 2 caps	1
• POB-8001 robot	10
• Radio-control servo controller (Microrobot) - RS servo8 and accessories	5
• Robot Lego mindstrom NXT	11
• Robot Soccer player + playground	3
• robot Sumo bot	5
• Soccer game board and microbots	1
• SuperCX super cricket microcontroller + USB cricket beamer	2

5

Motors Description	Quantity
Futaba cog and link kit with 40 treads and pins	5
Futaba cog black link kit with 20 treads and pins	10
H-bridge Amp (Red)	16
H-bridge motor driver I.C. L293D	50
motor FAUL gearhead	10
motor AIWA 26FL-060"	10
motor DC (Mabuchi)	30
motor Mini vibrating length 17.6mm; length 23mm ; length 27mm	10
Motors DC 3-V	50
Motors DC 9-V	8
motors Two gearhead with 130mm pin spike tire set	4
motors Two gearhead with 64mm sponge tire set	4
regulator 12V-voltage I.C. 78T12CT	50
regulator 5V-voltage I.C. 78T05CT	50
relay module Scientific-12c-serial	5
Servo controller module - SD21	5
servo Futaba with wheels (output torque= 3kg)	4
SERVO MOTOR. GENERAL PURPOSE. R-29-MX-400 BRAIN STEM.	15
Servo MOTORS (MPI)	44
servos Extra high torque	5
stepper motor driver Unipolar	4

Printer

Printer: Lexmark W850

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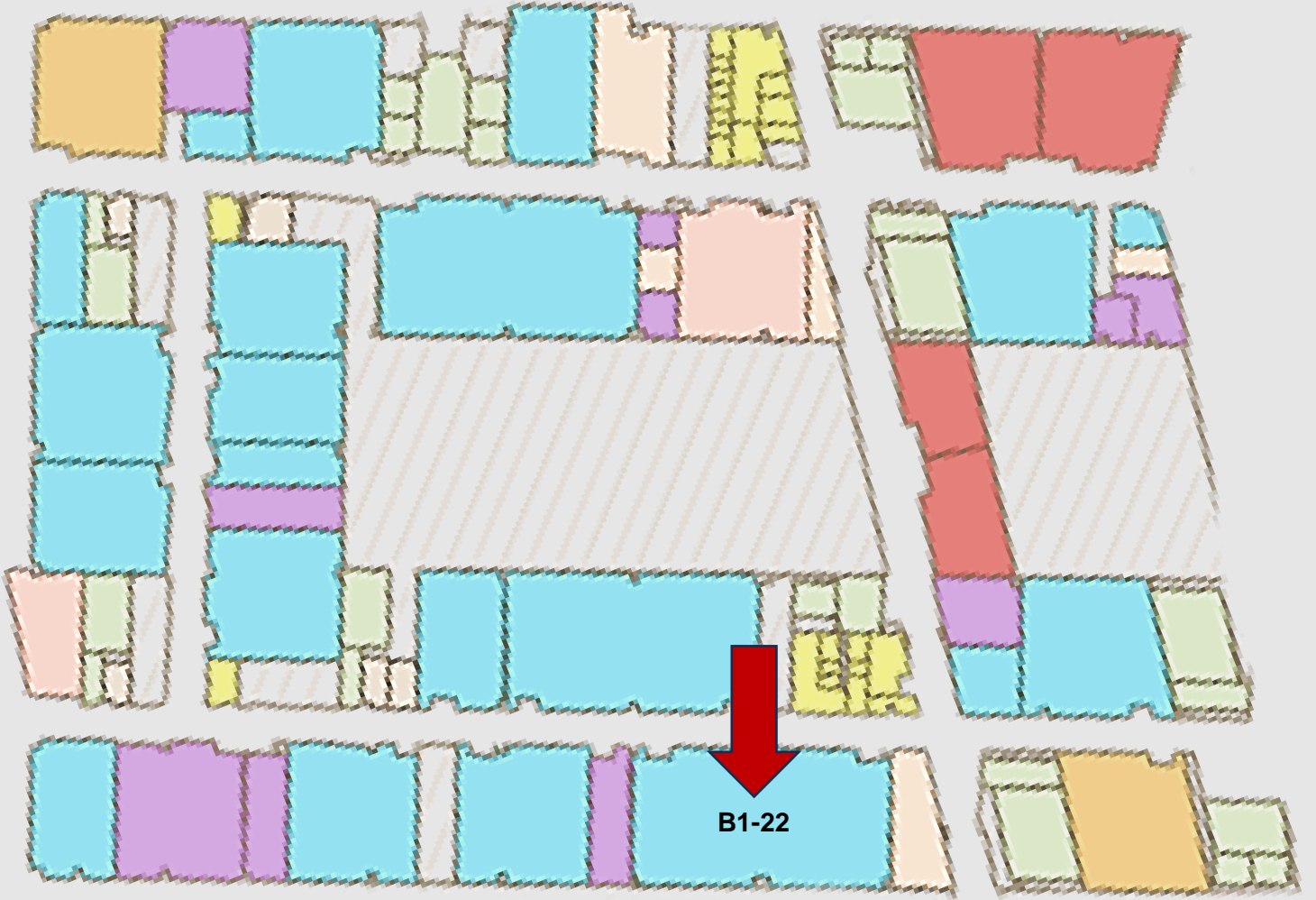
Accommodation for people of determination	<ul style="list-style-type: none"> ▪ Allocating seating places for the disabled on the edges of corridors and rows, on flat places, near services and emergency doors. <ul style="list-style-type: none"> ▪ The availability of the necessary spaces that allow the disabled to move and see clearly. ▪ Doors open outward ▪ The presence of fire-fighting equipment near the laboratory. <ul style="list-style-type: none"> ▪ Evacuation Plan/Evacuation Officer: 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.
Safety & Security	<ul style="list-style-type: none"> ▪ 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.
Laboratory Uses	Robotics Course, CpE-434 Course
Officials	Eng. Tarik Abdul Aziz Al Melhem
Awareness & Guidance	The presence of instructions for correct use & instructions to maintain laboratory equipment,

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Artificial Intelligence Lab is a special computer laboratory that serves CpE-434 (Robotics) and all the students of the CpE department. They can use it to learn assembling and programming different kinds of robots that perform different functionalities. Moreover, this lab contains the equipment related to sensors, processors, and motors.

مختبر الذكاء الصناعي مختبر خاص يخدم طلبة مقرر CpE-434 (الروبوتات) وكذلك يستخدم من قبل طلبة هندسة الكمبيوتر، لتعلم تركيب وبرمجة أنواع مختلفة من الروبوتات التي تؤدي وظائف مختلفة. علاوة على ذلك، يحتوي هذا المختبر على المعدات المتعلقة بأجهزة الاستشعار والمعالجات والمحركات.



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