Name:	Grading Quarter:	Week Beginning:
Robert Lefrandt	2	11/18/2024
School Year: 2024-25	Subject: Automation	& Robotics/Engineering

M	Notes:	Objective:	Academic
Monday	Robotic	Apply basic engineering principles and technical skills for artificial	Standards:
ау	Assemblies Mechtronic	intelligent managementthe principles of robotics, design, operational	Arizona
		testing, system maintenance, repair procedures, robot computer	Department
	Engineer: ReEngineer Reverse Engineering	systems, and control languages.	of
		(AZ CTE Automation & Robotics-Program Description)	Education
		PERFORM ELECTRICAL AND ELECTRONIC TASKS	Website:
	Structural	ANALYZE PROGRAMMABLE LOGIC CONTROLLER (PLC) SYSTEMS	Drogram
	Chassis frame body Mechanical	PERFORM DRAFTING TASKS-Make dimensional CAD drawings (2D/3D)	Program Description/ Industry
		DESCRIBE THE OPERATION AND USE OF VARIOUS FORMS OR	
	(Motion)	ELECTRICAL MOTORS	Credentials/
	Gear: Box,	Explain the operation and use of DC motors in automation controls	Coherent
	train,	PERFORM MECHANICAL SYSTEMS LINKAGES TASKS	Sequence/
	parallel	APPLY SENSOR SOLUTIONS  DEMONSTRATE SAFE AND PROPER USE OF ELECTRONIC AND OTHER	
	(linear)	LABORATORY EQUIPMENT, TOOLS, AND MATERIALS	www.azed.g
	stack	Lesson Overview: Workflow Process:	ov/cte/ar/
	(vertical),	Level 1 Students:	www.azed.g
	ratio,	Login to VEX Certification Accounts:	ov/sites/defa
	torque	VEX V5 ,Block Programming, Python Programming, Workcell	ult/files/202
	speed	RemoteCotrol and building VEX V5Robots -Speedbot/Base Bot, Claw	1/06/Progra
	Mechtronic	Coding-Block/Python/C/C++	mDescription Automation
		Sensors: Bump/touch, Distance, Line Tracker, Camera, , AI, Data Analysis	AndRobotics.
	Electrical ( Ohm's Law, Parallel/Seri al Circuits)		pdf
		***Customizing Robots and Parts : After Completing 1st Semester Skills	
		Level 2 Plus+ Students:	Az CTE Prof. Skills have 9
	Chemical	Login to VEX Certification Accounts: (Complete Certifications +	areas of
	e-chem Physical	Arduino/PCEP)	measuremnt
		Tinkercade(Autodesk)/PHET(Physics-Engineering-Tech) Univ-Colorado	Notes Contin
	Magnetism	3D Modeling, Electric circuits, Arduino IDE – C/Python Code	Notes Conti: PhysComp
	Batteries Software	Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing	Embedded
		Inkscape > Tinkercad > Ultimaker Cura (Settings) > Ultimaker	smart, IIOT
	Block PLC ladder logic, CNC,	(Print)*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D	AI ,Data
		Manual/Traditional - Mill and Drill , CNC –ComputerNumeric Control –	Collect Data
		G/M Code	Analyze Data
	Python, C++	Raspberry Pi – Pico Kit -Bluetooth/WiFi, Python Precision Machining	MachinLearn
	Sensors touch, Dist Light, Camera	CAD/CAM: 3D Printing	Collaborate
			schools,
		Competitions Prep, etc. See FabLab/Engineering:	Industry
		11/19/24: RTS Visit, <mark>01/11/25_AlchesayHS</mark>	Community
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Tu	Notes:	Objective:	Academic
Tuesday	Robotic	Apply basic engineering principles and technical skills for artificial	Standards:
ау	Assemblies Mechtronic	intelligent managementthe principles of robotics, design, operational	Arizona
	Mechtronic	testing, system maintenance, repair procedures, robot computer	
	Engineer: ReEngineer Reverse Engineering Structural	systems, and control languages.	Department of
		(AZ CTE Automation & Robotics-Program Description)	Education
		PERFORM ELECTRICAL AND ELECTRONIC TASKS	Website:
		ANALYZE PROGRAMMABLE LOGIC CONTROLLER (PLC) SYSTEMS	Drogram
	Chassis	PERFORM DRAFTING TASKS-Make dimensional CAD drawings (2D/3D)	Program  Description/
	frame body Mechanical (Motion) Gear: Box,	DESCRIBE THE OPERATION AND USE OF VARIOUS FORMS OR	Industry
		ELECTRICAL MOTORS	Credentials/
		Explain the operation and use of DC motors in automation controls	Coherent
	train,	PERFORM MECHANICAL SYSTEMS LINKAGES TASKS	Sequence/
	parallel	APPLY SENSOR SOLUTIONS	
	(linear)	DEMONSTRATE SAFE AND PROPER USE OF ELECTRONIC AND OTHER	www.azed.g
	stack	LABORATORY EQUIPMENT, TOOLS, AND MATERIALS	ov/cte/ar/
	(vertical),	Lesson Overview: Workflow Process:	_
	ratio,	Level 1 Students:	www.azed.g
	torque	Login to VEX Certification Accounts:	ov/sites/defa ult/files/202
	speed	VEX V5 ,Block Programming, Python Programming, Workcell	1/06/Progra
	speed	RemoteCotrol and building VEX V5Robots -Speedbot/Base Bot, Claw	mDescription
	Electrical ( Ohm's Law, Parallel/Seri	Coding-Block/Python/C/C++	_Automation AndRobotics. pdf
		Sensors :Bump/touch, Distance, Line Tracker, Camera, , AI, Data Analysis	
		***Customizing Robots and Parts : After Completing 1 <sup>st</sup> Semester Skills	
	al Circuits)		
	Chemical	Level 2 Plus+ Students:	Az CTE Prof. Skills have 9
	e-chem Physical Magnetism Batteries Software	Login to VEX Certification Accounts: (Complete Certifications +	areas of
		Arduino/PCEP)	measuremnt
		Tinkercade(Autodesk)/PHET(Physics-Engineering-Tech) Univ-Colorado	Notes Conti:
		3D Modeling, Electric circuits, Arduino IDE – C/Python Code	AI ,Data
	Block	Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing	Collect Data Analyze Data MachinLearn
	PLC ladder logic, CNC, Python, C++ Sensors	Inkscape > Tinkercad > Ultimaker Cura (Settings) > Ultimaker (Print)*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D	
		Manual/Traditional - Mill and Drill , CNC –ComputerNumeric Control –	Collaborate
		G/M Code	schools,
	touch, Dist	Raspberry Pi – Pico Kit -Bluetooth/WiFi, Python Precision Machining	Industry Community
	Light,	CAD/CAM: 3D Printing	
	Camera	CAU/ CAIVI . 30 FIIIIIIIIII	, , , , , , , , , , , , , , , , , , ,
	PhysComp	Competitions Prep, etc. See FabLab/Engineering:	
	Embedded	11/19/24: RTS Visit, 01/11/25_AlchesayHS	
	smart, IIOT	,,,	
	311101 (, 1101		

We	Notes:	Objective:	Academic	
Wednesday	Robotic Assemblies	Apply basic engineering principles and technical skills for artificial	Standards:	
esda	Mechtronic	intelligent managementthe principles of robotics, design, operational	Arizona	
ау		testing, system maintenance, repair procedures, robot computer	Department	
	Engineer:	systems, and control languages.	of	
	ReEngineer Reverse Engineering	(AZ CTE Automation & Robotics-Program Description)	Education Website:	
		PERFORM ELECTRICAL AND ELECTRONIC TASKS	Website.	
	Structural	ANALYZE PROGRAMMABLE LOGIC CONTROLLER (PLC) SYSTEMS	Program	
	Chassis frame body	PERFORM DRAFTING TASKS-Make dimensional CAD drawings (2D/3D)	Description/	
	Mechanical	DESCRIBE THE OPERATION AND USE OF VARIOUS FORMS OR	Industry	
	(Motion)	ELECTRICAL MOTORS	Credentials/	
	Gear: Box,	Explain the operation and use of DC motors in automation controls PERFORM MECHANICAL SYSTEMS LINKAGES TASKS	Coherent	
	train,	APPLY SENSOR SOLUTIONS	Sequence/	
	parallel	DEMONSTRATE SAFE AND PROPER USE OF ELECTRONIC AND OTHER		
	(linear)	LABORATORY EQUIPMENT, TOOLS, AND MATERIALS	www.azed.g	
	stack	Lesson Overview: Workflow Process:	ov/cte/ar/	
	(vertical),	Level 1 Students:	www.azed.g	
	ratio,	Login to VEX Certification Accounts:	ov/sites/defa	
	torque	VEX V5 ,Block Programming, Python Programming, Workcell	ult/files/202	
	speed	RemoteCotrol and building VEX V5Robots -Speedbot/Base Bot, Claw	1/06/Progra	
	Electrical ( Ohm's Law, Parallel/Seri al Circuits)	Coding-Block/Python/C/C++	mDescription Automation	
		Sensors :Bump/touch, Distance, Line Tracker, Camera, , AI, Data Analysis	AndRobotics.	
			pdf	
		***Customizing Robots and Parts: After Completing 1st Semester Skills		
	Chemical	Level 2 Plus+ Students:	Az CTE Prof. Skills have 9	
	e-chem Physical	Login to VEX Certification Accounts: (Complete Certifications +	areas of	
		Arduino/PCEP)	measuremnt	
	Magnetism Batteries Software Block	Tinkercade(Autodesk)/PHET(Physics-Engineering-Tech) Univ-Colorado	Notes Conti:	
		3D Modeling, Electric circuits, Arduino IDE – C/Python Code	Al ,Data	
		Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing	Collect Data	
	PLC ladder logic, CNC, Python, C++ Sensors	Inkscape > Tinkercad > Ultimaker Cura (Settings) > Ultimaker	Analyze Data MachinLearn	
		(Print)*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D	Collaborate	
		Manual/Traditional - Mill and Drill , CNC –ComputerNumeric Control –	schools,	
		G/M Code	3010013,	
	touch, Dist	Raspberry Pi – Pico Kit -Bluetooth/WiFi, Python Precision Machining	Industry Community	
	Light,	CAD/CAM: 3D Printing		
	Camera	Competitions Prep, etc. See FabLab/Engineering:		
	PhysComp			
	Embedded	11/19/24: RTS Visit, 01/11/25_AlchesayHS		
	smart, IIOT			

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	Structural	ANALYZE PROGRAMMABLE LOGIC CONTROLLER (PLC) SYSTEMS	Drogram
	Chassis	PERFORM DRAFTING TASKS-Make dimensional CAD drawings (2D/3D)	Program Description/
	frame body Mechanical	DESCRIBE THE OPERATION AND USE OF VARIOUS FORMS OR	Industry
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	Gear: Box,	Explain the operation and use of DC motors in automation controls	Coherent
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	torque speed	Login to VEX Certification Accounts:	ult/files/202
		VEX V5 ,Block Programming, Python Programming, Workcell	1/06/Progra
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	Parallel/Seri	***Customizing Robots and Parts: After Completing 1st Semester Skills	pdf
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	Batteries Software	3D Modeling, Electric circuits, Arduino IDE – C/Python Code	Notes Conti: Al ,Data
	Block	Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing	Collect Data
	Block PLC ladder	Inkscape > Tinkercad > Ultimaker Cura (Settings) > Ultimaker	Analyze Data
	logic, CNC,	(Print)*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D	MachinLearn
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	Light,	CAD/CAM : 3D Printing	
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		ReEngineer Reverse	(AZ CTE Automation & Robotics-Program Description)	Education Website:
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		Structural	ANALYZE PROGRAMMABLE LOGIC CONTROLLER (PLC) SYSTEMS	Program
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		Software	3D Modeling, Electric circuits, Arduino IDE – C/Python Code	PhysComp
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		bump/touc	Raspberry Pi – Pico Kit -Bluetooth/WiFi, Python Precision Machining	Collaborate
		h DistLight,	CAD/CAM: 3D Printing	schools,
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