Name:	Grading Quarter:	Week Beginning:	
Robert Lefrandt	3	1/27/2025	
School Year: 2024-25	Subject: Automation	& Robotics/Engineering	

	Notes:	Objective:	Academic
Monday	Robotic	Apply basic engineering principles and technical skills for artificial	Standards:
nda	Assemblies	intelligent management the principles of robotics, design, operational	Standards.
<	Mechtronic	testing, system maintenance, repair procedures, robot computer	Arizona
	E	systems, and control languages.	Department
	Engineer: ReEngineer	systems, and control languages.	of
	Reverse	(AZ CTE Automation & Robotics-Program Description)	Education
	Engineering	PERFORM ELECTRICAL AND ELECTRONIC TASKS	Website:
	Structural	ANALYZE PROGRAMMABLE LOGIC CONTROLLER (PLC) SYSTEMS	5
	Chassis	PERFORM DRAFTING TASKS-Make dimensional CAD drawings (2D/3D)	Program
	frame body	DESCRIBE THE OPERATION AND USE OF VARIOUS FORMS OR	Description/
	Mechanical	ELECTRICAL MOTORS	Industry Credentials/
	(Motion) 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	
	(linear)	DEMONSTRATE SAFE AND PROPER USE OF ELECTRONIC AND OTHER	www.azed.g
	stack	LABORATORY EQUIPMENT, TOOLS, AND MATERIALS Lesson Overview: Workflow Process:	ov/cte/ar/
	(vertical),	Level 1 Students:	
	ratio,		www.azed.g ov/sites/defa
	torque	Login to VEX Certification Accounts:	ult/files/202
	speed	VEX V5 ,Block Programming, Python Programming, Workcell	1/06/Progra
		RemoteCotrol and building VEX V5Robots -Speedbot/Base Bot, Claw	mDescription
	Mechtronic	Coding-Block/Python/C/C++	_Automation
	Electrical (Sensors :Bump/touch, Distance, Line Tracker, Camera, , AI, Data Analysis	AndRobotics. pdf
	Ohm's Law,	***Customizing Robots and Parts : After Completing 1 st Semester Skills	pui
	Parallel/Seri	Level 2 Plus+ Students:	Az CTE Prof.
	al Circuits)	Login to VEX Certification Accounts: (Complete Certifications +	Skills have 9
	Chemical e-chem	Arduino/PCEP)	areas of measuremnt
	Physical	Tinkercade(Autodesk)/PHET(Physics-Engineering-Tech) Univ-Colorado	measuremme
	Magnetism	3D Modeling, Electric circuits, Arduino IDE – C/Python Code	<u>Notes Conti:</u> PhysComp
	Batteries	Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing	Embedded
	Software	Inkscape > Tinkercad > Ultimaker Cura (Settings) > Ultimaker	smart, IIOT
	Block	(Print)*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D	Al ,Data
	PLC ladder	Manual/Traditional - Mill and Drill , CNC –ComputerNumeric Control –	Collect Data
	logic, CNC,	G/M Code	Analyze Data
	Python, C++	Raspberry Pi – Pico Kit -Bluetooth/WiFi, Python Precision Machining	MachinLearn
	Sensors	CAD/CAM : 3D Printing	Collaborate
	touch, Dist		schools,
	Light,	Competitions: See FabLab/Engineering:	Industry
	Camera	vr.vex.com: virtual Robotics-Coding: Block/Python Text-High Stakes	Community

	Other: Racing the Sun (RTS) *See FabLab	

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Tuesday	<u>Notes:</u> Debatio	Objective:	Academic
esda	Robotic Assemblies	Apply basic engineering principles and technical skills for artificial	Standards:
ΥĒ	Mechtronic	intelligent management the principles of robotics, design, operational	Arizona
	Wieentronie	testing, system maintenance, repair procedures, robot computer	Department
	Engineer:	systems, and control languages.	of
	ReEngineer Reverse	(AZ CTE Automation & Robotics-Program Description)	Education
	Engineering	PERFORM ELECTRICAL AND ELECTRONIC TASKS	Website:
	Structural	ANALYZE PROGRAMMABLE LOGIC CONTROLLER (PLC) SYSTEMS	Program
	Chassis	PERFORM DRAFTING TASKS-Make dimensional CAD drawings (2D/3D)	Description/
	frame body 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	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
	-	Login to VEX Certification Accounts:	ov/sites/defa
	torque	VEX V5 ,Block Programming, Python Programming, Workcell	ult/files/202 1/06/Progra
	speed	RemoteCotrol and building VEX V5Robots -Speedbot/Base Bot, Claw	mDescription
	Electrical (Coding-Block/Python/C/C++	Automation
	Ohm's Law,	Sensors :Bump/touch, Distance, Line Tracker, Camera, , AI, Data Analysis	AndRobotics.
	Parallel/Seri		pdf
	al Circuits)	***Customizing Robots and Parts : After Completing 1 st Semester Skills	
	Chemical	Level 2 Plus+ Students:	Az CTE Prof.
	e-chem	Login to VEX Certification Accounts: (Complete Certifications +	Skills have 9 areas of
	Physical	Arduino/PCEP)	measuremnt
	Magnetism Batteries	Tinkercade(Autodesk)/PHET(Physics-Engineering-Tech) Univ-Colorado	Notes Conti:
	Software	3D Modeling, Electric circuits, Arduino IDE – C/Python Code	Al ,Data
	Block	Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing	Collect Data
	PLC ladder	Inkscape > Tinkercad > Ultimaker Cura (Settings) > Ultimaker	Analyze Data
	logic, CNC,	(Print)*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D	MachinLearn
	Python, C++	Manual/Traditional - Mill and Drill , CNC –ComputerNumeric Control –	Collaborate
	Sensors	G/M Code	schools,
	touch, Dist	Raspberry Pi – Pico Kit -Bluetooth/WiFi, Python Precision Machining	Industry
	Light,	CAD/CAM : 3D Printing	Community
	Camera		Sectionary
	PhysComp	Competitions: See FabLab/Engineering:	
	Embedded	vr.vex.com: virtual Robotics-Coding: Block/Python Text-High Stakes	
	smart, IIOT		
L			

Other: Racing	the Sun (RTS) *See Fab	Lab	

	Notos	Objective:	Academic
Ve	<u>Notes:</u> Robotic	Apply basic engineering principles and technical skills for artificial	Standards:
dne	Assemblies	intelligent management the principles of robotics, design, operational	Standards.
Wednesday	Mechtronic	testing, system maintenance, repair procedures, robot computer	Arizona
<	F	systems, and control languages.	Department
	Engineer: ReEngineer		of
	Reverse	(AZ CTE Automation & Robotics-Program Description)	Education
	Engineering	PERFORM ELECTRICAL AND ELECTRONIC TASKS	Website:
	Structural	ANALYZE PROGRAMMABLE LOGIC CONTROLLER (PLC) SYSTEMS	5
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	frame body	DESCRIBE THE OPERATION AND USE OF VARIOUS FORMS OR	Description/ Industry
	Mechanical (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 mDescription
	Electrical (Coding-Block/Python/C/C++	Automation
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	Parallel/Seri	***Customizing Robots and Parts : After Completing 1 st Semester Skills	pdf
	al Circuits)		Az CTE Prof.
	Chemical	Level 2 Plus+ Students:	Skills have 9
	e-chem	Login to VEX Certification Accounts: (Complete Certifications +	areas of
	Physical	Arduino/PCEP)	measuremnt
	Magnetism	Tinkercade(Autodesk)/PHET(Physics-Engineering-Tech) Univ-Colorado	Notos Contin
	Batteries Software	3D Modeling, Electric circuits, Arduino IDE – C/Python Code	<u>Notes Conti:</u> AI ,Data
	Block	Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing	Collect Data
	PLC ladder	Inkscape > Tinkercad > Ultimaker Cura (Settings) > Ultimaker	Analyze Data
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	Light,	CAD/CAM : 3D Printing	Community
	Camera	Competitions: See FabLab/Engineering: vr.vex.com: virtual Robotics-	
	PhysComp	Competitions: See Fablab/Engineering: VI.Vex.com: Virtual Robotics- Coding: Block/Python Text-High Stakes	
	Embedded	coung. Divery rython rest-nigh states	
	smart, IIOT		

	Other: Racing the Sun (RTS) *See FabLab	

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ay	Mechtronic	intelligent managementthe principles of robotics, design, operational testing, system maintenance, repair procedures, robot computer	Arizona
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	(linear)	LABORATORY EQUIPMENT, TOOLS, AND MATERIALS	www.azed.g
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Other: Racing the Sun (RTS) *See FabLab	

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	ladder	Inkscape > Tinkercad > Ultimaker Cura (Settings) > Ultimaker	smart, IIOT AI ,Data
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	h DistLight,	CAD/CAM : 3D Printing	schools,
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