Name:	Grading Quarter:	Week Beginning:
Robert Lefrandt	3	02/03/2025
School Year: 2024-25	Subject: Automation	& Robotics/Engineering

≤	Notes:	Objective:	Academic		
Monday	Robotic	Apply basic engineering principles and technical skills for artificial	Standards:		
ау	Assemblies	intelligent managementthe principles of robotics, design, operational			
	Mechtronic	testing, system maintenance, repair procedures, robot computer	Arizona		
	Engineer:	systems, and control languages.	Department		
	ReEngineer	(AZ CTE Automation & Robotics-Program Description)	of Education		
	Reverse	(AZ CTE Automation & Robotics-Frogram Description)			
	Engineering	PERFORM ELECTRICAL AND ELECTRONIC TASKS	Website:		
	Structural	ANALYZE PROGRAMMABLE LOGIC CONTROLLER (PLC) SYSTEMS	Drogram		
	Chassis	PERFORM DRAFTING TASKS-Make dimensional CAD drawings (2D/3D)	Program Description/		
	frame body	DESCRIBE THE OPERATION AND USE OF VARIOUS FORMS OR	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			
	(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 ult/files/202		
	torque speed	VEX V5 ,Block Programming, Python Programming, Workcell	1/06/Progra		
	speed	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.		
	Ohm's Law, Parallel/Seri al Circuits)	***Customizing Robots and Parts : After Completing 1st Semester Skills	pui		
		Level 2 Plus+ Students:	Az CTE Prof.		
	Chemical	Login to VEX Certification Accounts: (Complete Certifications +	Skills have 9 areas of		
	e-chem	Arduino/PCEP)	measuremnt		
	Physical	 Tinkercade(Autodesk)/PHET(Physics-Engineering-Tech) Univ-Colorado	measaremine		
	Magnetism		Notes Conti:		
	Batteries	3D Modeling, Electric circuits, Arduino IDE – C/Python Code	PhysComp		
	Software	Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing	Embedded		
	Block	Inkscape > Tinkercad > Ultimaker Cura (Settings) > Ultimaker	smart, IIOT		
	PLC ladder	(Print)*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D	Al ,Data		
	logic, CNC,	Manual/Traditional - Mill and Drill , CNC –ComputerNumeric Control –	Collect Data Analyze Data		
	Python, C++	G/M Code	MachinLearn		
	Sensors	Raspberry Pi – Pico Kit -Bluetooth/WiFi, Python Precision Machining	Collaborate		
	touch, Dist	CAD/CAM: 3D Printing	schools,		
	Light,	Competitions: See FabLab/Engineering: vr.vex.com-coding top6 in AZ	,		
	Camera		Industry		
		vr.vex.com: virtual Robotics-Coding: Block/Python Text-High Stakes	Community		
		Other: Racing the Sun (RTS) *See FabLab			

	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
			testing, system maintenance, repair procedures, robot computer	Department
		Engineer:	systems, and control languages.	of
		ReEngineer	(AZ CTE Automation & Robotics-Program Description)	Education
		Reverse		Website:
		Engineering Structural	PERFORM ELECTRICAL AND ELECTRONIC TASKS	
		Chassis	ANALYZE PROGRAMMABLE LOGIC CONTROLLER (PLC) SYSTEMS	Program
		frame body	PERFORM DRAFTING TASKS-Make dimensional CAD drawings (2D/3D) DESCRIBE THE OPERATION AND USE OF VARIOUS FORMS OR	Description/
		, Mechanical	ELECTRICAL MOTORS	Industry
		(Motion)	Explain the operation and use of DC motors in automation controls	Credentials/
		Gear: Box,	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 ov/cte/ar/
		stack	Lesson Overview: Workflow Process:	ov/ctc/ai/
		(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 (Coding-Block/Python/C/C++	mDescription Automation
		Ohm's Law, Parallel/Seri al Circuits)	Sensors :Bump/touch, Distance, Line Tracker, Camera, , AI, Data Analysis	AndRobotics.
				pdf
			***Customizing Robots and Parts : After Completing 1 st Semester Skills	_
		Chemical	Level 2 Plus+ Students:	Az CTE Prof.
		e-chem Physical	Login to VEX Certification Accounts: (Complete Certifications +	Skills have 9 areas of
			Arduino/PCEP)	measuremnt
		Magnetism	Tinkercade(Autodesk)/PHET(Physics-Engineering-Tech) Univ-Colorado	
		Batteries	3D Modeling, Electric circuits, Arduino IDE – C/Python Code	Notes Conti:
		Software		Al ,Data
		Block	Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing	Collect Data
		PLC ladder	Inkscape > Tinkercad > Ultimaker Cura (Settings) > Ultimaker	Analyze Data MachinLearn
		logic, CNC,	(Print)*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D	
		Python, C++ Sensors	Manual/Traditional - Mill and Drill , CNC –ComputerNumeric Control –	Collaborate schools,
			G/M Code	scrioois,
		touch, Dist	Raspberry Pi – Pico Kit -Bluetooth/WiFi, Python Precision Machining	Industry Community
		Light,	CAD/CAM: 3D Printing	
		Camera	Competitions: See FabLab/Engineering: vr.vex.com-coding top6 in AZ	
		PhysComp		
		Embedded	vr.vex.com: virtual Robotics-Coding: Block/Python Text-High Stakes	
		smart, IIOT	Other: Racing the Sun (RTS) *See FabLab	
			<u> </u>	i e e e e e e e e e e e e e e e e e e e

	We	Notes:	Objective:	Academic
l di	Wednesday	Robotic Assemblies	Apply basic engineering principles and technical skills for artificial	Standards:
	esda	Mechtronic	intelligent managementthe principles of robotics, design, operational	Arizona
	у		testing, system maintenance, repair procedures, robot computer	Department
		Engineer:	systems, and control languages.	of
		ReEngineer Reverse	(AZ CTE Automation & Robotics-Program Description)	Education Website:
		Engineering	PERFORM ELECTRICAL AND ELECTRONIC TASKS	Website.
		Structural Chassis	ANALYZE PROGRAMMABLE LOGIC CONTROLLER (PLC) SYSTEMS	Program
		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 Explain the operation and use of DC motors in automation controls	Credentials/
		Gear: Box,	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 ov/cte/ar/
		stack	Lesson Overview: Workflow Process:	OV/Cle/ai/
		(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
		Ohm's Law,	Sensors :Bump/touch, Distance, Line Tracker, Camera, , AI, Data Analysis	AndRobotics.
		Parallel/Seri	***Customizing Robots and Parts : After Completing 1 st Semester Skills	pdf
		al Circuits)		Az CTE Prof. Skills have 9
		Chemical	Level 2 Plus+ Students:	
		e-chem	Login to VEX Certification Accounts: (Complete Certifications +	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	Competitions Con Enhant/Engineering was some anding top Cin A7	
		PhysComp	Competitions: See FabLab/Engineering: vr.vex.com-coding top6 in AZ vr.vex.com: virtual Robotics-Coding: Block/Python Text-High Stakes	
		Embedded		
		smart, IIOT	Other: Racing the Sun (RTS) *See FabLab	
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	Τh	Notes:	Objective:	Academic
	Thursday	Robotic	Apply basic engineering principles and technical skills for artificial	Standards:
	day	Assemblies Mechtronic	intelligent managementthe principles of robotics, design, operational	Arizona
		Wiechtroffic	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	
		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
		(Motion)	Explain the operation and use of DC motors in automation controls	Credentials/
		Gear: Box,	PERFORM MECHANICAL SYSTEMS LINKAGES TASKS	Coherent Sequence/
		train,	APPLY SENSOR SOLUTIONS	Sequence/
		parallel (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
			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 al Circuits)	***Customizing Robots and Parts: After Completing 1st Semester Skills	pui
		Chemical	Level 2 Plus+ Students:	Az CTE Prof.
		e-chem	Login to VEX Certification Accounts: (Complete Certifications +	Skills have 9
		Physical	Arduino/PCEP)	areas of measuremnt
		Magnetism Batteries Software	Tinkercade(Autodesk)/PHET(Physics-Engineering-Tech) Univ-Colorado	measaremme
			3D Modeling, Electric circuits, Arduino IDE – C/Python Code	Notes Conti: Al ,Data
			Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing	Collect Data
		Block PLC ladder	Inkscape > Tinkercad > Ultimaker Cura (Settings) > Ultimaker	Analyze Data
			(Print)*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D	MachinLearn
		logic, CNC, Python, C++ Sensors	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	Competitions: See Eahlah/Engineering: ur vey som seding tone in A7	
		PhysComp	Competitions: See FabLab/Engineering: vr.vex.com-coding top6 in AZ vr.vex.com: virtual Robotics-Coding: Block/Python Text-High Stakes	
		Embedded		
		smart, IIOT	Other: Racing the Sun (RTS) *See FabLab	

Fr	Notes:	Objective:	Academic
Friday	Robotic	Apply basic engineering principles and technical skills for artificial	Standards:
	Assemblies	intelligent managementthe principles of robotics, design, operational	A =:== = ==
	Mechtronic	testing, system maintenance, repair procedures, robot computer	Arizona
	Engineer:	systems, and control languages.	Department of
	ReEngineer	(AZ CTE Automation & Robotics-Program Description)	Education
	Reverse		Website:
	Engineering Structural	PERFORM ELECTRICAL AND ELECTRONIC TASKS	
	Chassis	ANALYZE PROGRAMMABLE LOGIC CONTROLLER (PLC) SYSTEMS	Program
	frame body	PERFORM DRAFTING TASKS-Make dimensional CAD drawings (2D/3D) DESCRIBE THE OPERATION AND USE OF VARIOUS FORMS OR	Description/
	Mechanical	ELECTRICAL MOTORS	Industry
	(Motion)	Explain the operation and use of DC motors in automation controls	Credentials/
	Gear: Box,	PERFORM MECHANICAL SYSTEMS LINKAGES TASKS	Coherent
	train,	APPLY SENSOR SOLUTIONS	Sequence/
	parallel	DEMONSTRATE SAFE AND PROPER USE OF ELECTRONIC AND OTHER	www.azed.g
	(linear)	LABORATORY EQUIPMENT, TOOLS, AND MATERIALS	ov/cte/ar/
	stack	Lesson Overview: Workflow Process:	21, 232, 21,
	(vertical),	Level 1 Students:	www.azed.g
	ratio, torque	Login to VEX Certification Accounts:	ov/sites/defa
		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
	Ohm's Law,	 Sensors :Bump/touch, Distance, Line Tracker, Camera, , AI, Data Analysis	AndRobotics.
	Parallel/Seri al Circuits)	***Customizing Robots and Parts : After Completing 1st Semester Skills	pdf
			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	
	Batteries Software	3D Modeling, Electric circuits, Arduino IDE – C/Python Code	Notes Conti: PhysComp
	Block/PLC	Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing	Embedded
	ladder	Inkscape > Tinkercad > Ultimaker Cura (Settings) > Ultimaker	smart, IIOT
	logic, CNC,	(Print)*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D	Al ,Data
	Python, C++	Manual/Traditional - Mill and Drill , CNC –ComputerNumeric Control –	Collect Data
	Sensors	G/M Code	Analyze Data MachinLearn
	bump/touc	Raspberry Pi – Pico Kit -Bluetooth/WiFi, Python Precision Machining	
	h DistLight,	CAD/CAM : 3D Printing	Collaborate
	Camera		schools, Industry
		Competitions: See FabLab/Engineering: vr.vex.com-coding top6 in AZ	Community
		vr.vex.com: virtual Robotics-Coding: Block/Python Text-High Stakes	Sommanicy
		Other: Racing the Sun (RTS) *See FabLab	