Name:	Grading Quarter:	Week Beginning:
Robert Lefrandt	3	02/10/2025
School Year: 2024-25	Subject: Automation	& Robotics/Engineering

Ζ	Notes:	Objective:	Academic
Monday	Robotic	Apply basic engineering principles and technical skills for artificial	Standards:
lay	Assemblies	intelligent managementthe principles of robotics, design, operational	A
	Mechtronic	testing, system maintenance, repair procedures, robot computer	Arizona
	Engineer:	systems, and control languages.	Department
	ReEngineer Reverse	(AZ CTE Automation & Robotics-Program Description)	of Education
	Engineering	PERFORM ELECTRICAL AND ELECTRONIC TASKS	Website:
	Structural	ANALYZE PROGRAMMABLE LOGIC CONTROLLER (PLC) SYSTEMS	
	Chassis	·	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
	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		1/06/Progra
	Machtronic	RemoteCotrol and building VEX V5Robots -Speedbot/Base Bot, Claw	mDescription
	Mechtronic	Coding-Block/Python/C/C++	_Automation AndRobotics.
	Electrical (Sensors :Bump/touch, Distance, Line Tracker, Camera, , AI, Data Analysis	pdf
	Ohm's Law,	***Customizing Robots and Parts: After Completing 1st Semester Skills	P - 2.7
	Parallel/Seri	Level 2 Plus+ Students:	Az CTE Prof.
	al Circuits)	Login to VEX Certification Accounts: (Complete Certifications +	Skills have 9
	Chemical	Arduino/PCEP)	areas of
	e-chem	*Tinkercade(Autodesk)/PHET(Physics-Engineering-Tech) Univ-Colorado	measuremnt
	Physical		Notes Conti:
	Magnetism Batteries	3D Modeling, Electric circuits, Arduino IDE – C/Python Code	PhysComp
	Software	Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing	Embedded
		Inkscape > Tinkercad > Ultimaker Cura (Settings) > Ultimaker	smart, IIOT
	Block	(Print)*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D	AI ,Data
	PLC ladder	Manual/Traditional - Mill and Drill , CNC -ComputerNumeric Control -	Collect Data
	logic, CNC, Python, C++ Sensors touch, Dist	G/M Code	Analyze Data
		Raspberry Pi – Pico Kit -Bluetooth/WiFi, Python Precision Machining	MachinLearn
		CAD/CAM: 3D Printing	Collaborate
		CAUTOMIN . 30 I THICHIS	schools,
	Light,	Competitions: See FabLab/Engineering: vr.vex.com-coding top6 in AZ	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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	Tue	Notes:	Objective:	Academic
	Tuesday	Robotic Assemblies	Apply basic engineering principles and technical skills for artificial	Standards:
	₹	Mechtronic	intelligent managementthe principles of robotics, design, operational	Arizona
			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 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	ocquerioc,
		(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 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
		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 Physical	Login to VEX Certification Accounts: (Complete Certifications +	Skills have 9
			Arduino/PCEP)	areas of
		Magnetism	*Tinkercade(Autodesk)/PHET(Physics-Engineering-Tech) Univ-Colorado	measuremnt
		Batteries		Notes Conti:
		Software	3D Modeling, Electric circuits, Arduino IDE – C/Python Code	AI ,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: See FabLab/Engineering: vr.vex.com-coding top6 in AZ	
		PhysComp		
		Embedded smart, IIOT	vr.vex.com: virtual Robotics-Coding: Block/Python Text-High Stakes	
			Other: Racing the Sun (RTS) *See FabLab	
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	W _€	Notes:	Objective:	Academic
	Wednesday	Robotic	Apply basic engineering principles and technical skills for artificial	Standards:
	esd	Assemblies Mechtronic	intelligent managementthe principles of robotics, design, operational	Arizona
	ау	Wicerialonic	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	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 (Coding-Block/Python/C/C++	mDescription Automation
		Ohm's Law,		AndRobotics.
		Parallel/Seri	Sensors :Bump/touch, Distance, Line Tracker, Camera, , AI, Data Analysis	pdf
		al Circuits)	***Customizing Robots and Parts: After Completing 1st 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		-
		PhysComp	Competitions: See FabLab/Engineering: vr.vex.com-coding top6 in AZ	
		Embedded	vr.vex.com: virtual Robotics-Coding: Block/Python Text-High Stakes	
		smart, IIOT	Other: Racing the Sun (RTS) *See FabLab	

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	Th	Notes:	Objective:	Academic
	Thursday	Robotic Assemblies Mechtronic	Apply basic engineering principles and technical skills for artificial	Standards:
	day		intelligent managementthe principles of robotics, design, operational	Arizona
			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	Drawra
		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
		(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 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 (Coding-Block/Python/C/C++	mDescription
		Ohm's Law,		_Automation AndRobotics.
		Parallel/Seri	Sensors :Bump/touch, Distance, Line Tracker, Camera, , AI, Data Analysis	pdf
		al Circuits)	***Customizing Robots and Parts: After Completing 1st 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 Software	*Tinkercade(Autodesk)/PHET(Physics-Engineering-Tech) Univ-Colorado	Notes Conti:
			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 (Print)*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D	Analyze Data MachinLearn
		logic, CNC, Python, C++		Collaborate
			Manual/Traditional - Mill and Drill , CNC –ComputerNumeric Control – G/M Code	schools,
		Sensors touch, Dist		Industry
		Light,	Raspberry Pi – Pico Kit -Bluetooth/WiFi, Python Precision Machining CAD/CAM: 3D Printing	Community
		Camera		22iiiiiiiii
		PhysComp Embedded smart, IIOT	Competitions: See FabLab/Engineering: vr.vex.com-coding top6 in AZ	
			vr.vex.com: virtual Robotics-Coding: Block/Python Text-High Stakes	
			Other: Racing the Sun (RTS) *See FabLab	
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Fr.	Notes:	Objective:	Academic
Friday	Robotic	Apply basic engineering principles and technical skills for artificial	Standards:
	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	Dragram
	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
	(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 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 speed Electrical (VEX V5 ,Block Programming, Python Programming, Workcell	ult/files/202
		RemoteCotrol and building VEX V5Robots -Speedbot/Base Bot, Claw	1/06/Progra
			mDescription
	Ohm's Law,	Coding-Block/Python/C/C++	_Automation AndRobotics.
	Parallel/Seri	Sensors :Bump/touch, Distance, Line Tracker, Camera, , AI, Data Analysis	pdf
	al Circuits)	***Customizing Robots and Parts: After Completing 1st Semester Skills	, , , , , , , , , , , , , , , , , , ,
	Chemical	Level 2 Plus+ Students:	Az CTE Prof. Skills have 9
	e-chem	Login to VEX Certification Accounts: (Complete Certifications +	areas of
	Physical	Arduino/PCEP)	measuremnt
	Magnetism Batteries Software	*Tinkercade(Autodesk)/PHET(Physics-Engineering-Tech) Univ-Colorado	Notes Conti:
		3D Modeling, Electric circuits, Arduino IDE – C/Python Code	PhysComp
	Block/PLC ladder logic, CNC, Python, C++ Sensors	Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing	Embedded
		Inkscape > Tinkercad > Ultimaker Cura (Settings) > Ultimaker (Print)*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D	smart, IIOT AI ,Data Collect Data Analyze Data
		Manual/Traditional - Mill and Drill , CNC –ComputerNumeric Control – G/M Code	
	bump/touc	Raspberry Pi – Pico Kit -Bluetooth/WiFi, Python Precision Machining	MachinLearn
	h DistLight,	CAD/CAM: 3D Printing	Collaborate
	Camera		schools,
		Competitions: See FabLab/Engineering: vr.vex.com-coding top6 in AZ	Industry
		vr.vex.com: virtual Robotics-Coding: Block/Python Text-High Stakes	Community
		Other: Racing the Sun (RTS) *See FabLab	