Name:	Grading Quarter:	Week Beginning:
Robert Lefrandt	3	1/06/2025
School Year: 2024-25	Subject: Automation	& Robotics/Engineering

Z	Notes:	*Prof. Dev. No school - <b>Objective:</b>	Academic
Monday	Robotic	Apply basic engineering principles and technical skills for artificial	Standards:
ay	Assemblies Mechtronic	intelligent managementthe principles of robotics, design, operational	Arizona
	Mechinomic	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	Dragge
	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  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 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	
	Parallel/Seri al Circuits)	Level 2 Plus+ Students:	Az CTE Prof. Skills have 9
	Chemical	Login to VEX Certification Accounts: (Complete Certifications +	areas of
	e-chem	Arduino/PCEP)	measuremnt
	Physical	Tinkercade(Autodesk)/PHET(Physics-Engineering-Tech) Univ-Colorado	Notes Conti:
	Magnetism	3D Modeling, Electric circuits, Arduino IDE – C/Python Code	PhysComp
	Batteries 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	Al ,Data
	PLC ladder	Manual/Traditional - Mill and Drill , CNC –ComputerNumeric Control –	Collect Data
	logic, CNC,	G/M Code	Analyze Data MachinLearn
	Python, C++	Raspberry Pi – Pico Kit -Bluetooth/WiFi, Python Precision Machining	
	Sensors touch Dist	CAD/CAM: 3D Printing	Collaborate
	touch, Dist Light,	Competitions: See Eahlah /Engineering: Begistered Toams: VEV	schools,
	Camera	Competitions: See FabLab/Engineering: Registered Teams: VEX  V5 AlchesayHS. 1/11–5 teams, Bus Transportation	Industry
	Carriera	Vo_Alchesuyris. 1/11 5 teams, bus Transportation	Community

	Other: Racing the Sun (RTS) *See FabLab	

Tue	Notes:	Objective:	Academic
Tuesday	Robotic Assemblies	Apply basic engineering principles and technical skills for artificial	Standards:
γE	Mechtronic	intelligent managementthe principles of robotics, design, operational	Arizona
	Wiceritionic	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	Drogram
	Chassis frame body Mechanical	PERFORM DRAFTING TASKS-Make dimensional CAD drawings (2D/3D) DESCRIBE THE OPERATION AND USE OF VARIOUS FORMS OR	Program Description/ 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,		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
	Ohm's Law,	Sensors :Bump/touch, Distance, Line Tracker, Camera, , AI, Data Analysis	AndRobotics.
	Parallel/Seri	***Customizing Robots and Parts : After Completing 1 <sup>st</sup> Semester Skills	pdf
	al Circuits)	Level 2 Plus+ Students:	Az CTE Prof.
	Chemical		Skills have 9
	e-chem	Login to VEX Certification Accounts: (Complete Certifications +	areas of
	Physical Magnetism	Arduino/PCEP)	measuremnt
	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 logic, CNC,	Inkscape > Tinkercad > Ultimaker Cura (Settings) > Ultimaker (Print)*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D	Analyze Data 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	Compositions, Soc Eablah / Francisco vince   Basistand Towns   150	
	PhysComp	Competitions: See FabLab/Engineering: Registered Teams: VEX	
	Embedded	V5_AlchesayHS. 1/11–5 teams, Bus Transportation	
	smart, IIOT		

	Other: Racing the Sun (RTS) *See FabLab	

_	Notes:	Objective:	Academic
Vec	Robotic	Apply basic engineering principles and technical skills for artificial	Standards:
dne	Assemblies	intelligent managementthe principles of robotics, design, operational	
Wednesday	Mechtronic	testing, system maintenance, repair procedures, robot computer	Arizona
<b>Y</b>	Engineer	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	
	Chassis	PERFORM DRAFTING TASKS-Make dimensional CAD drawings (2D/3D)	Program
	frame body	DESCRIBE THE OPERATION AND USE OF VARIOUS FORMS OR	Description/ Industry
	Mechanical	ELECTRICAL MOTORS	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	1
	(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),		
	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	***Customizing Robots and Parts: After Completing 1st Semester Skills	pdf
	al Circuits)	Level 2 Plus+ Students:	Az CTE Prof.
	Chemical		Skills have 9
	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
		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++	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		<b>,</b>
	PhysComp	Competitions: See FabLab/Engineering: Registered Teams: VEX	
	Embedded	V5_AlchesayHS. 1/11–5 teams, Bus Transportation	
	smart, IIOT		
	, -		

Other: Racing the Sun (RTS) *See FabLab	

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Τ	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
	Mechinonic	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	Duaguaga
	Chassis	PERFORM DRAFTING TASKS-Make dimensional CAD drawings (2D/3D)	Program
	frame body	DESCRIBE THE OPERATION AND USE OF VARIOUS FORMS OR	Description/ Industry
	Mechanical	ELECTRICAL MOTORS	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/
		Lesson Overview: Workflow Process:	
	(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 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 1st Semester Skills	A CTE D (
	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	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 (Print)*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D	Analyze Data MachinLearn
	logic, CNC,	Manual/Traditional - Mill and Drill , CNC –ComputerNumeric Control –	Collaborate
	Python, C++	G/M Code	schools,
	Sensors		Industry
	touch, Dist	Raspberry Pi – Pico Kit -Bluetooth/WiFi, Python Precision Machining	Industry
	Light,	CAD/CAM: 3D Printing	Community
	Camera	Competitions: See FabLab/Engineering: Registered Teams: VEX	
	PhysComp	V5_AlchesayHS. 1/11-5 teams, Bus Transportation	
	Embedded		
	smart, IIOT		

	Other: Racing the Sun (RTS) *See FabLab	

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Fri	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
		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 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
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	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. Skills have 9
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	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	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	AI ,Data Collect Data
	Python, C++	Manual/Traditional - Mill and Drill , CNC –ComputerNumeric Control –	
	Sensors	G/M Code	Analyze Data MachinLearn
	bump/touc	Raspberry Pi – Pico Kit -Bluetooth/WiFi, Python Precision Machining	Collaborate
	h DistLight,	CAD/CAM : 3D Printing	schools,
	Camera	Competitions: See FabLab/Engineering: Registered Teams: VEX	Industry
		V5_AlchesayHS. 1/11–5 teams, Bus Transportation	Community
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	Other: Racing the Sun (RTS) *See FabLab	