Name:	Grading Quarter:	Week Beginning:
Robert Lefrandt	2	11/25/2024
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
		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	
	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
	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:	
	(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
	Mechtronic	Coding-Block/Python/C/C++	Automation
	Electrical (Sensors :Bump/touch, Distance, Line Tracker, Camera, , AI, Data Analysis	_ AndRobotics.
	Ohm's Law,		pdf
	Parallel/Seri	***Customizing Robots and Parts : After Completing 1 st Semester Skills	
	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	
	Magnetism	3D Modeling, Electric circuits, Arduino IDE – C/Python Code	Notes Conti:
	Batteries	Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing	PhysComp Embedded
	Software		smart, IIOT
	Block	Inkscape > Tinkercad > Ultimaker Cura (Settings) > Ultimaker	Al ,Data
	PLC ladder	(Print)*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D	Collect Data
	logic, CNC,	Manual/Traditional - Mill and Drill , CNC –ComputerNumeric Control –	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 Prep, etc. See FabLab/Engineering:	,
	Camera		Industry
		11/19/24: RTS Visit, 11/26/24: RTS Review, 01/11/25_Robotics	Community

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<u> </u>	Netoo	Objective	Academic
Tue	<u>Notes:</u> Robotic	Objective: Apply basic engineering principles and technical skills for artificial	Standards:
Tuesday	Assemblies	intelligent management the principles of robotics, design, operational	Stanuarus.
~	Mechtronic		Arizona
		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/
	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:	
	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
	Electrical (Coding-Block/Python/C/C++	_Automation
	Ohm's Law,	Sensors : Bump/touch, Distance, Line Tracker, Camera, , AI, Data Analysis	AndRobotics.
	Parallel/Seri	<u>***Customizing Robots and Parts : After Completing 1st Semester Skills</u>	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
	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 Prep, etc. See FabLab/Engineering:	
	Embedded	11/19/24: RTS Visit, 11/26/24: RTS Review, 01/11/25_Robotics	
	smart, IIOT		
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Robotic Apply basic Assemblies intelligent r Assemblies Engineer: Systems, ar	ng Break - Objective: engineering principles and technical skills for artificial managementthe principles of robotics, design, operational tem maintenance, repair procedures, robot computer nd control languages. tomation & Robotics-Program Description) ELECTRICAL AND ELECTRONIC TASKS ROGRAMMABLE LOGIC CONTROLLER (PLC) SYSTEMS	Academic Standards: Arizona Department of Education Website:
Engineer: systems, ar ReEngineer (A7 CTF Aut	managementthe principles of robotics, design, operational tem maintenance, repair procedures, robot computer nd control languages. tomation & Robotics-Program Description)	Arizona Department of Education
Engineer: systems, ar ReEngineer (A7 CTF Aut	tem maintenance, repair procedures, robot computer nd control languages. tomation & Robotics-Program Description) ELECTRICAL AND ELECTRONIC TASKS	Department of Education
Engineer: systems, ar ReEngineer (A7 CTF Aut	nd control languages. tomation & Robotics-Program Description) ELECTRICAL AND ELECTRONIC TASKS	Department of Education
ReEngineer (AZ CTF Aut	tomation & Robotics-Program Description)	of Education
	ELECTRICAL AND ELECTRONIC TASKS	Education
		website.
	ROGRAMMABLE LOGIC CONTROLLER (PLC) SYSTEMS	
		Program
	DRAFTING TASKS-Make dimensional CAD drawings (2D/3D)	Description/
frame body DESCRIBE T	HE OPERATION AND USE OF VARIOUS FORMS OR	Industry
Mechanical ELECTRICAL	_ MOTORS	Credentials/
(Motion) Gear: Box,	operation and use of DC motors in automation controls	Coherent
PERFORM I	MECHANICAL SYSTEMS LINKAGES TASKS	Sequence/
APPLY SENS	SOR SOLUTIONS	
	RATE SAFE AND PROPER USE OF ELECTRONIC AND OTHER	www.azed.g
	RY EQUIPMENT, TOOLS, AND MATERIALS	ov/cte/ar/
	erview: Workflow Process:	
ratio		www.azed.g
	X Certification Accounts:	ov/sites/defa
torque VEX V5 ,Blo speed	ck Programming, Python Programming, Workcell	ult/files/202 1/06/Progra
RemoteCot	rol and building VEX V5Robots -Speedbot/Base Bot, Claw	mDescription
Electrical (Coding-Bloo	ck/Python/C/C++	_Automation
Ohm's Law, Sensors :Bu	imp/touch, Distance, Line Tracker, Camera, , AI, Data Analysis	AndRobotics.
Parallel/Seri	izing Robots and Parts : After Completing 1 st Semester Skills	pdf
al Circuits)		Az CTE Prof.
Chernieur	s+ Students:	Skills have 9
	X Certification Accounts: (Complete Certifications +	areas of
Physical Arduino/PC	CEP)	measuremnt
Batteries	(Autodesk)/PHET(Physics-Engineering-Tech) Univ-Colorado	Notes Conti:
Software 3D Modelin	ng, Electric circuits, Arduino IDE – C/Python Code	Al ,Data
	2D Sketch > 3D Modeling > 3D Settings > 3D Printing	Collect Data
	Tinkercad > Ultimaker Cura (Settings) > Ultimaker	Analyze Data
logic, CNC, (Print)*Aut	odesk Fusion 360/Solidworks: Combine 2d Sketch/3D	MachinLearn
_	aditional - Mill and Drill, CNC –ComputerNumeric Control –	Collaborate
Sensors G/M Code		schools,
touch, Dist Raspberry F	Pi – Pico Kit -Bluetooth/WiFi, Python Precision Machining	Industry
	3D Printing	Community
Camera	5	
PhysComp	ns Prep, etc. See FabLab/Engineering:	
	/19/24: RTS Visit, 11/26/24: RTS Review, 01/11/25_Robotics	
smart, IIOT		

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<u> </u>	Notoci	Thenkegining Breek Objectives	Academic
Thursday	Notes: Robotic	Thanksgiving Break - Objective: Apply basic engineering principles and technical skills for artificial	Standards:
rsd	Assemblies	intelligent management the principles of robotics, design, operational	Standards.
ay	Mechtronic	testing, system maintenance, repair procedures, robot computer	Arizona
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	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	Laboratori 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
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	logic, CNC,		Collaborate
	Python, C++	Manual/Traditional - Mill and Drill , CNC –ComputerNumeric Control –	schools,
	Sensors	G/M Code	56110015,
	touch, Dist	Raspberry Pi – Pico Kit -Bluetooth/WiFi, Python Precision Machining	Industry
	Light,	CAD/CAM : 3D Printing	Community
	Camera	Competitions Prep, etc. See FabLab/Engineering:	
	PhysComp		
	Embedded	11/19/24: RTS Visit, 11/26/24: RTS Review, 01/11/25_Robotics	
	smart, IIOT		

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т	Notes:	Thanksgiving Break - Objective:	Academic
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	Gear: Box,	Explain the operation and use of DC motors in automation controls	Coherent
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	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/
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	Batteries Software	3D Modeling, Electric circuits, Arduino IDE – C/Python Code	<u>Notes Conti:</u> PhysComp
		Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing	Embedded
	Block/PLC	Inkscape > Tinkercad > Ultimaker Cura (Settings) > Ultimaker	smart, IIOT
	ladder	(Print)*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D	AI ,Data
	logic, CNC,	Manual/Traditional - Mill and Drill , CNC –ComputerNumeric Control –	Collect Data
	Python, C++	G/M Code	Analyze Data
	Sensors		MachinLearn
	bump/touc h DistLight,	Raspberry Pi – Pico Kit -Bluetooth/WiFi, Python Precision Machining	Collaborate
	Camera	CAD/CAM : 3D Printing	schools,
	Camera	Competitions Prep, etc. See FabLab/Engineering:	Industry
		11/19/24: RTS Visit, 11/26/24: RTS Review, 01/11/25_Robotics	Community
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