Name:	Grading Quarter:	Week Beginning:
Robert Lefrandt	2	11/04/2024
School Year: 2024-25	Subject: Automation	& Robotics/Engineering

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

Competitions Prep, etc. See FabLab/Engineering 11/14-16/24 WRiv	

	Notes:	Objective:	Academic
Tue	Robotic	Apply basic engineering principles and technical skills for artificial	Standards:
Tuesday	Assemblies	intelligent management the principles of robotics, design, operational	Stanuarus.
<	Mechtronic	testing, system maintenance, repair procedures, robot computer	Arizona
			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 (e.g., 2D and 3D)	Description/
	Mechanical (Motion)	DESCRIBE THE OPERATION AND USE OF VARIOUS FORMS OR ELECTRICAL MOTORS	Industry 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:	www.azed.g
	ratio,	Level 1 Students:	ov/sites/defa
	torque	Login to VEX Certification Accounts:	ult/files/202
	speed	VEX V5 ,Block Programming, Python Programming, Workcell	1/06/Progra
	Electrical (RemoteCotrol and building VEX V5Robots -Speedbot/Base Bot, Claw	mDescription
	Ohm's Law,	Coding-Block/Python/C/C++	_Automation AndRobotics.
	Parallel/Seri		pdf
	al Circuits)	Sensors :Bump/touch, Distance, Line Tracker, Camera, , AI, Data Analysis	pui
	Chemical	***Customizing Robots and Parts : After Completing 1 st Semester Skills	Az CTE Prof.
	e-chem	Level 2 Plus+ Students:	Skills have 9
	Physical	Login to VEX Certification Accounts: (Complete Certifications +	areas of
	, 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	AI ,Data Collect Data
	Block PLC ladder	Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing	Analyze Data
	logic, CNC,	Inkscape > Tinkercad > Ultimaker Cura (Settings) > Ultimaker	MachinLearn
	Python, C++	(Print)*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D	Collaborate
	Sensors	Modeling	schools,
		Manual/Traditional - Mill and Drill , CNC –ComputerNumeric Control –	Industry
	touch, Dist Light,	G/M Code	Community
	Camera	Raspberry Pi – Pico Kit -Bluetooth/WiFi, Python Precision Machining	community
		CAD/CAM : 3D Printing	
	PhysComp Embedded		
	smart, IIOT	*Competitions Prep, etc. See FabLab/Engineering* <mark>11/14-16/24 WRiv</mark>	
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×e	<u>Notes:</u> Debatio	Objective:	Academic
dn	Robotic Assemblies	Apply basic engineering principles and technical skills for artificial	Standards:
Wednesday	Mechtronic	intelligent management the principles of robotics, design, operational	Arizona
ay	Wiechtroffie	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	Due autoria
	Chassis frame body	PERFORM DRAFTING TASKS-Make dimensional CAD drawings (e.g., 2D and 3D)	Program 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	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 ov/cte/ar/
	stack	LABORATORY EQUIPMENT, TOOLS, AND MATERIALS	
	(vertical),	Lesson Overview: Workflow Process:	www.azed.g
	ratio,	Level 1 Students:	ov/sites/defa
	torque	Login to VEX Certification Accounts:	ult/files/202
	speed	VEX V5 ,Block Programming, Python Programming, Workcell	1/06/Progra
	Electrical (RemoteCotrol and building VEX V5Robots -Speedbot/Base Bot, Claw	mDescription
	Ohm's Law,	Coding-Block/Python/C/C++	_Automation AndRobotics.
	Parallel/Seri		pdf
	al Circuits)	Sensors :Bump/touch, Distance, Line Tracker, Camera, , AI, Data Analysis	P G .
	Chemical	***Customizing Robots and Parts : After Completing 1 st Semester Skills	Az CTE Prof.
	e-chem	Level 2 Plus+ Students:	Skills have 9
	Physical	Login to VEX Certification Accounts: (Complete Certifications +	areas of
	Magnetism	Arduino/PCEP)	measuremnt
	Batteries	Tinkercade(Autodesk)/PHET(Physics-Engineering-Tech) Univ-Colorado	<u>Notes Conti:</u> Al ,Data
	Software	3D Modeling, Electric circuits, Arduino IDE – C/Python Code	Collect Data
	Block PLC ladder	Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing	Analyze Data
	logic, CNC,	Inkscape > Tinkercad > Ultimaker Cura (Settings) > Ultimaker	MachinLearn
	Python, C++	(Print)*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D	Collaborate
	Sensors	Modeling	schools,
	touch, Dist	Manual/Traditional - Mill and Drill , CNC –ComputerNumeric Control –	Industry
		G/M Code	Community
	Light, Camera	Raspberry Pi – Pico Kit -Bluetooth/WiFi, Python Precision Machining	community
	PhysComp	CAD/CAM : 3D Printing	
	Embedded		
	smart, IIOT	*Competitions Prep, etc. See FabLab/Engineering* <mark>11/14-16/24 WRiv</mark>	
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Th	Notes:	Objective:	Academic
Thursday	Robotic Assemblies	Apply basic engineering principles and technical skills for artificial	Standards:
lay	Mechtronic	intelligent management the principles of robotics, design, operational	Arizona
	Mechtionic	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	Due autoria
	Chassis	PERFORM DRAFTING TASKS-Make dimensional CAD drawings (e.g., 2D	Program
	frame body	and 3D)	Description/
	Mechanical	DESCRIBE THE OPERATION AND USE OF VARIOUS FORMS OR	Industry Credentials/
	(Motion)	ELECTRICAL MOTORS	Coherent
	Gear: Box,	Explain the operation and use of DC motors in automation controls	
	train,	PERFORM MECHANICAL SYSTEMS LINKAGES TASKS	Sequence/
	parallel	APPLY SENSOR SOLUTIONS	www.azed.g
	(linear)	DEMONSTRATE SAFE AND PROPER USE OF ELECTRONIC AND OTHER	ov/cte/ar/
	stack	LABORATORY EQUIPMENT, TOOLS, AND MATERIALS	- , , - ,
	(vertical),	Lesson Overview: Workflow Process:	www.azed.g
	ratio,	Level 1 Students:	ov/sites/defa
	torque	Login to VEX Certification Accounts:	ult/files/202
	speed	VEX V5 ,Block Programming, Python Programming, Workcell	1/06/Progra
	Electrical (RemoteCotrol and building VEX V5Robots -Speedbot/Base Bot, Claw	mDescription Automation
	Ohm's Law,	Coding-Block/Python/C/C++	AndRobotics.
	Parallel/Seri	Sensors :Bump/touch, Distance, Line Tracker, Camera, , AI, Data Analysis	pdf
	al Circuits)		
	Chemical	***Customizing Robots and Parts : After Completing 1 st Semester Skills	Az CTE Prof.
	e-chem	Level 2 Plus+ Students:	Skills have 9
	Physical	Login to VEX Certification Accounts: (Complete Certifications +	areas of measuremnt
	Magnetism	Arduino/PCEP)	measuremint
	Batteries	Tinkercade(Autodesk)/PHET(Physics-Engineering-Tech) Univ-Colorado	<u>Notes Conti:</u> AI ,Data
	Software	3D Modeling, Electric circuits, Arduino IDE – C/Python Code	Collect Data
	Block PLC ladder	Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing	Analyze Data
	logic, CNC,	Inkscape > Tinkercad > Ultimaker Cura (Settings) > Ultimaker	MachinLearn
	Python, C++	(Print)*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D	Collaborate
	Sensors	Modeling	schools,
	touch, Dist	Manual/Traditional - Mill and Drill , CNC –ComputerNumeric Control –	Industry
	Light,	G/M Code	Community
	Camera	Raspberry Pi – Pico Kit -Bluetooth/WiFi, Python Precision Machining	Sectionality
	PhysComp	CAD/CAM : 3D Printing	
	Embedded		
	smart, IIOT	*Competitions Prep, etc. See FabLab/Engineering* <mark>11/14-16/24 WRiv</mark>	
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	Notes:	Objective:	Academic
Friday	Notes: Robotic	Objective: Apply basic engineering principles and technical skills for artificial	Academic Standards:
ау	Assemblies	intelligent management the principles of robotics, design, operational	
	Mechtronic	testing, system maintenance, repair procedures, robot computer	Arizona
	Fnaincari	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	Drogram
	Chassis	PERFORM DRAFTING TASKS-Make dimensional CAD drawings (e.g., 2D	Program Description/
	frame body Mechanical	and 3D)	Industry
	(Motion)	DESCRIBE THE OPERATION AND USE OF VARIOUS FORMS OR	Credentials/
	Gear: Box,	ELECTRICAL MOTORS 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:	www.azed.g
	ratio,	Level 1 Students:	ov/sites/defa
	torque	Login to VEX Certification Accounts:	ult/files/202
	speed	VEX V5 ,Block Programming, Python Programming, Workcell	1/06/Progra mDescription
	Electrical (RemoteCotrol and building VEX V5Robots -Speedbot/Base Bot, Claw	Automation
	Ohm's Law,	Coding-Block/Python/C/C++	_ AndRobotics.
	Parallel/Seri	Sensors :Bump/touch, Distance, Line Tracker, Camera, , AI, Data Analysis	pdf
	al Circuits)	***Customizing Robots and Parts : After Completing 1 st Semester Skills	Az CTE Prof.
	Chemical	Level 2 Plus+ Students:	Skills have 9
	e-chem		areas of
	Physical Mognotion	Login to VEX Certification Accounts: (Complete Certifications + Arduino/PCEP)	measuremnt
	Magnetism Batteries		Notes Conti:
	Software	Tinkercade(Autodesk)/PHET(Physics-Engineering-Tech) Univ-Colorado	PhysComp
		3D Modeling, Electric circuits, Arduino IDE – C/Python Code	Embedded
	Block/PLC	Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing	smart, IIOT
	ladder logic, CNC,	Inkscape > Tinkercad > Ultimaker Cura (Settings) > Ultimaker	Al ,Data
	Python, C++	(Print)*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D	Collect Data
	Sensors	Modeling	Analyze Data
	bump/touc	Manual/Traditional - Mill and Drill , CNC –ComputerNumeric Control –	MachinLearn
	h DistLight,	G/M Code	Collaborate schools,
	Camera	Raspberry Pi – Pico Kit -Bluetooth/WiFi, Python Precision Machining	schools,
		CAD/CAM : 3D Printing	Industry
		Competitions Prep, etc. See FabLab/Engineering 11/14-16/24 WRiv	Community