Name:		Grading Quarter:	Week Beginning:	
Robert Lefrandt		2	10/21/2024	
S	chool 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 11/01/2024		

	Nates	Objective	
Tue	<u>Notes:</u> Robotic	Objective:	Academic Standards:
Tuesday	Assemblies	Apply basic engineering principles and technical skills for artificial	Stanuarus:
×	Mechtronic	intelligent managementthe principles of robotics, design, operational 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 Chassis	ANALYZE PROGRAMMABLE LOGIC CONTROLLER (PLC) SYSTEMS	Program
	frame body	PERFORM DRAFTING TASKS-Make dimensional CAD drawings (e.g., 2D	Description/
	Mechanical	and 3D) 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 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 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>
	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,
	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	
	PhysComp	CAD/CAM : 3D Printing	
	Embedded	*Competitions Prep, etc. See FabLab/Engineering* 11/01/2024	
	smart, IIOT		

	Natori	Objective	A apple :::: :
We	<u>Notes:</u> Robotic	Objective:	Academic Standards:
dne	Assemblies	Apply basic engineering principles and technical skills for artificial	Stanuarus
Wednesday	Mechtronic	intelligent managementthe principles of robotics, design, operational 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 ov/cte/ar/
	stack	LABORATORY EQUIPMENT, TOOLS, AND MATERIALS	00/00/01/
	(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 areas of
	Physical Magnetism	Login to VEX Certification Accounts: (Complete Certifications + 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, Python, C++ Sensors	Inkscape > Tinkercad > Ultimaker Cura (Settings) > Ultimaker (Print)*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D Modeling	MachinLearn Collaborate schools,
	touch, Dist Light,	Manual/Traditional - Mill and Drill , CNC –ComputerNumeric Control – G/M Code	Industry Community
	Camera	Raspberry Pi – Pico Kit -Bluetooth/WiFi, Python Precision Machining	
	PhysComp	CAD/CAM : 3D Printing	
	Embedded	*Competitions Prep, etc. See FabLab/Engineering* 11/01/2024	
	smart, IIOT		

Thursday	Notes:	Objective:	Academic Standardar
Jrsc	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/ Industry
	Mechanical	DESCRIBE THE OPERATION AND USE OF VARIOUS FORMS OR	Credentials/
	(Motion) Gear: Box,	ELECTRICAL MOTORS	Coherent
	train,	Explain the operation and use of DC motors in automation controls	Sequence/
	parallel	PERFORM MECHANICAL SYSTEMS LINKAGES TASKS	eequence,
	(linear)	APPLY SENSOR SOLUTIONS	www.azed.g
	stack	DEMONSTRATE SAFE AND PROPER USE OF ELECTRONIC AND OTHER	ov/cte/ar/
		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 1/06/Progra
	speed	VEX V5 ,Block Programming, Python Programming, Workcell	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)	<u>***Customizing Robots and Parts : After Completing 1st Semester Skills</u>	Az CTE Prof.
	Chemical		Skills have 9
	e-chem	Level 2 Plus+ Students:	areas of
	Physical	Login to VEX Certification Accounts: (Complete Certifications +	measuremnt
	Magnetism	Arduino/PCEP)	
	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
	-	(Print)*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D	Collaborate
	Python, C++ Sensors	Modeling	schools,
		Manual/Traditional - Mill and Drill , CNC –ComputerNumeric Control –	Industry
	touch, Dist	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* 11/01/2024	

_	Notes:	Objective:	Academic
Friday	Robotic	Apply basic engineering principles and technical skills for artificial	Standards:
ау	Assemblies	intelligent management the principles of robotics, design, operational	
	Mechtronic	testing, system maintenance, repair procedures, robot computer	Arizona
	Francisco e e e e	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	5
	Chassis	PERFORM DRAFTING TASKS-Make dimensional CAD drawings (e.g., 2D	Program
	frame body	and 3D)	Description/ Industry
	Mechanical (Motion)	DESCRIBE THE OPERATION AND USE OF VARIOUS FORMS OR	Credentials/
	Gear: Box,	ELECTRICAL MOTORS	Coherent
	train,	Explain the operation and use of DC motors in automation controls	Sequence/
	parallel	PERFORM MECHANICAL SYSTEMS LINKAGES TASKS 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
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	Electrical (RemoteCotrol and building VEX V5Robots -Speedbot/Base Bot, Claw	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)		
	Chemical	***Customizing Robots and Parts : After Completing 1 st Semester Skills	Az CTE Prof. Skills have 9
	e-chem	Level 2 Plus+ Students:	areas of
	Physical	Login to VEX Certification Accounts: (Complete Certifications +	measuremnt
	Magnetism	Arduino/PCEP)	
	Batteries	Tinkercade(Autodesk)/PHET(Physics-Engineering-Tech) Univ-Colorado	Notes Conti:
	Software	3D Modeling, Electric circuits, Arduino IDE – C/Python Code	PhysComp Embedded
	Block/PLC	Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing	smart, IIOT
	ladder	Inkscape > Tinkercad > Ultimaker Cura (Settings) > Ultimaker	AI ,Data
	logic, CNC,	(Print)*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D	Collect Data
	Python, C++	Modeling	Analyze Data
	Sensors	Manual/Traditional - Mill and Drill , CNC –ComputerNumeric Control –	MachinLearn
	bump/touc	G/M Code	Collaborate
	h DistLight, Camera	Raspberry Pi – Pico Kit -Bluetooth/WiFi, Python Precision Machining	schools,
	Callierd	CAD/CAM : 3D Printing	Industry
		Competitions Prep, etc. See FabLab/Engineering 11/01/2024	Community
		competitions () cel see (ublub) Lingineering 11/01/2024	