Name:	Grading Quarter:	Week Beginning:
Robert Lefrandt	2	09/11/2023
School Year: 2023-24	Subject: Robotics	

	Notes:	Objective:	Academic
	09/11/2023	Apply basic engineering principles and technical skills for artificial	Standards:
		intelligent management the principles of robotics, design, operational	Standards.
	Robotic	testing, system maintenance, repair procedures, robot computer systems,	
	Assemblies Mechtronics	and control languages.	
	Mechtronics	(AZ CTE Automation & Robotics-Program Description)	
	Engineering:		
	Structural	PERFORM ELECTRICAL AND ELECTRONIC TASKS	
	Chassis frame	 ANALYZE PROGRAMMABLE LOGIC CONTROLLER (PLC) SYSTEMS PERFORM DRAFTING TASKS-Make dimensional CAD drawings (e.g., 2D and 3D) 	
	body	 DESCRIBE THE OPERATION AND USE OF VARIOUS FORMS OR ELECTRICAL 	
	Mechanical	MOTORS	
	(Motion)	Explain the operation and use of DC motors in automation controls	
	Gear: Box,	PERFORM MECHANICAL SYSTEMS LINKAGES TASKS	
	train, parallel	APPLY SENSOR SOLUTIONS	
	(linear) stack	DEMONSTRATE SAFE AND PROPER USE OF ELECTRONIC AND OTHER	
	(vertical), ratio,	LABORATORY EQUIPMENT, TOOLS, AND MATERIALS	
	torque speed	Lesson Overview:	
		11st Semester Students:	
	Fleetwisel	Login to VEX Certification Accounts:	
	Electrical Chemical	• VEX V5	
	electrochemical	Block Programming	
		 Python Programming 	
	Physical		
\leq	Magnetism		
Monday	Batteries	Continue building VEX V5 Robots	
da	Software	Speedbot/Base Bot	
<	Block	Coding-Block/Python/C/C++	
	PLC ladder	Sensors	
	logic, CNC,	Bump/touch, Distance, Line Tracker, Camera	
	Python, C++,	• Al	
	Sensors	Data Analysis	
	Bump/touchDis	2nD Semester Plus+ Students:	
	tance	Login to VEX Certification Accounts:	
	Light	• VEX V5	
	Camera	Block,Python Programming	
	Physical	Workcell	
	Computing	Customizing Robots and Parts	
		Tinkercade	
	AI	 3D Modeling, Electric circuits, Arduino IDE – C/Python Code 	
	Data Collect	Workflow Process:	
	DataAnalyze	 Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing 	
		 Inkscape > Tinkercad > Ultimaker Cura > Ultimaker 	
		*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D Modeling	
		Raspberry Pi – Pico Bluetooth/WiFi	
		Python	
		Precision Machining	
		Manual/Traditional - Mill and Drill	
		<u>CNC –ComputerNumeric Control –G/M Code</u>	

	Notoci	Objective	Academic Standards:
	Notes: 09/12/2023	Objective:	Academic Standards.
	09/12/2023	Apply basic engineering principles and technical skills for artificial	AZ_CTE
	Robotic	intelligent management the principles of robotics, design, operational	
	Assemblies	testing, system maintenance, repair procedures, robot computer systems,	Automation & Robotics
	Mechtronics	and control languages. (AZ CTE Automation & Robotics-Program Description)	Tech-Standards
		Az ere Automation & Robotics-Frogram Description	
	Engineering:	PERFORM ELECTRICAL AND ELECTRONIC TASKS	STANDARD 2.0
	Structural Chassis frame	ANALYZE PROGRAMMABLE LOGIC CONTROLLER (PLC) SYSTEMS	PERFORM ELECTRICAL AND ELECTRONIC
	body	 PERFORM DRAFTING TASKS-Make dimensional CAD drawings (e.g., 2D and 3D) 	TASKS
	2007	DESCRIBE THE OPERATION AND USE OF VARIOUS FORMS OR ELECTRICAL	
	Mechanical	MOTORS	STANDARD 4.0
	(Motion)	Explain the operation and use of DC motors in automation controls	ANALYZE
	Gear: Box,	PERFORM MECHANICAL SYSTEMS LINKAGES TASKS	PROGRAMMABLE
	train, parallel	APPLY SENSOR SOLUTIONS	
	(linear) stack	DEMONSTRATE SAFE AND PROPER USE OF ELECTRONIC AND OTHER	(PLC) SYSTEMS
	(vertical), ratio,	LABORATORY EQUIPMENT, TOOLS, AND MATERIALS	STANDARD 7.0
	torque speed	Lesson Overview:	PERFORM DRAFTING
		1st Semester Students:	TASKS
		Login to VEX Certification Accounts:	7.5 Make dimensional
	Electrical		CAD drawings (e.g., 2D
	Chemical	VEX V5	and 3D)
	electrochemical	Block Programming	
	Physical	Python Programming	STANDARD 5.0 DESCRIBE THE
Ę	Magnetism	Workcell	OPERATION AND USE
les	Batteries	Continue building VEX V5 Robots	OF VARIOUS FORMS
Tuesday		Speedbot/Base Bot	OR ELECTRICAL
<	Software	Coding-Block/Python/C/C++	MOTORS
	Block	Sensors	
	PLC ladder logic, CNC,	 Bump/touch, Distance, Line Tracker, Camera 	5.2 Explain the
	Python, C++,	 Al 	operation and use of DC motors in
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		automation controls
	Sensors	Data Analysis	
	Bump/touchDis	2nD Semester Plus+ Students:	STANDARD 6.0
	tance	Login to VEX Certification Accounts:	PERFORM
	Light	• VEX V5	MECHANICAL
	Camera	Block,Python Programming	SYSTEMS LINKAGES
	Physical	Workcell	TASKS
	Computing	Customizing Robots and Parts	STANDARD 10.0 APPLY SENSOR SOLUTIONS
		Tinkercade	SENSOR SOLUTIONS
	AI	 3D Modeling, Electric circuits, Arduino IDE – C/Python Code 	STANDARD 13.0
	Data Collect	Workflow Process:	DEMONSTRATE SAFE
	DataAnalyze		AND PROPER USE OF
		 Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing 	ELECTRONIC AND
		 Inkscape > Tinkercad > Ultimaker Cura > Ultimaker 	
		*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D Modeling	EQUIPMENT, TOOLS, AND MATERIALS
		Raspberry Pi – Pico Bluetooth/WiFi	
		Python	
		Precision Machining	
		Manual/Traditional - Mill and Drill	
			·

	CNC –ComputerNumeric Control –G/M Code	

	Notes:	Objective:	Academic Standards:
	09/13/2023	Apply basic engineering principles and technical skills for artificial	
	, -,	intelligent management the principles of robotics, design, operational	AZ_CTE
	obotic	testing, system maintenance, repair procedures, robot computer systems,	Automation &
	Assemblies	and control languages.	Robotics
	Mechtronics	(AZ CTE Automation & Robotics-Program Description)	Tech-Standards
	Engineering:		STANDARD 2.0
	Structural	PERFORM ELECTRICAL AND ELECTRONIC TASKS	PERFORM ELECTRICAL
	Chassis frame	ANALYZE PROGRAMMABLE LOGIC CONTROLLER (PLC) SYSTEMS SERECTION DESCRIPTION TASKS MALE discussional CAD devices (a.e., 2D, and 2D)	AND ELECTRONIC
	body	 PERFORM DRAFTING TASKS-Make dimensional CAD drawings (e.g., 2D and 3D) DESCRIBE THE OPERATION AND USE OF VARIOUS FORMS OR ELECTRICAL 	TASKS
		MOTORS	STANDARD 4.0
	Mechanical (Motion)	• Explain the operation and use of DC motors in automation controls	ANALYZE
	Gear: Box,	PERFORM MECHANICAL SYSTEMS LINKAGES TASKS	PROGRAMMABLE
	train, parallel	APPLY SENSOR SOLUTIONS	LOGIC CONTROLLER
	(linear) stack	DEMONSTRATE SAFE AND PROPER USE OF ELECTRONIC AND OTHER	(PLC) SYSTEMS
	(vertical), ratio,	LABORATORY EQUIPMENT, TOOLS, AND MATERIALS	
	torque speed		STANDARD 7.0 PERFORM DRAFTING
		Lesson Overview:	TASKS
		<u>11st Semester Students:</u>	7.5 Make dimensional
	Electrical	Login to VEX Certification Accounts:	CAD drawings (e.g., 2D
	Chemical electrochemical	VEX V5	and 3D)
	electrochemical	Block Programming	
_	Physical	Python Programming	STANDARD 5.0 DESCRIBE THE
Ň	, Magnetism	Workcell	OPERATION AND USE
dn	Batteries	Continue building VEX V5 Robots	OF VARIOUS FORMS
Wednesday		Speedbot/Base Bot	OR ELECTRICAL
dav	Software Block	Coding-Block/Python/C/C++	MOTORS
~	PLC ladder	Sensors	E 2 Evolain tha
	logic, CNC,	Bump/touch, Distance, Line Tracker, Camera	5.2 Explain the operation and use of
	Python, C++,	• AI	DC motors in
		Data Analysis	automation controls
	Sensors	2nD Semester Plus+ Students:	
	Bump/touchDis tance	Login to VEX Certification Accounts:	STANDARD 6.0
	Light	• VEX V5	PERFORM MECHANICAL
	Camera	Block,Python Programming	SYSTEMS LINKAGES
		Workcell	TASKS
	Physical	Customizing Robots and Parts	STANDARD 10.0 APPLY
	Computing	Tinkercade	SENSOR SOLUTIONS
	AI		STANDARD 13.0
	Data Collect	• 3D Modeling, Electric circuits, Arduino IDE – C/Python Code	DEMONSTRATE SAFE
	DataAnalyze	Workflow Process:	AND PROPER USE OF
		 Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing 	ELECTRONIC AND
		 Inkscape > Tinkercad > Ultimaker Cura > Ultimaker 	OTHER LABORATORY
		*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D Modeling	EQUIPMENT, TOOLS, AND MATERIAL
		Raspberry Pi – Pico Bluetooth/WiFi	
		Python	
		Precision Machining	
		Manual/Traditional - Mill and Drill	
		<u>CNC –ComputerNumeric Control –G/M Code</u>	

	Notes:	Objective:	Academic
	09/14/2023	Apply basic engineering principles and technical skills for artificial	Standards:
	03/14/2023	intelligent management the principles of robotics, design, operational	AZ_CTE
	obotic	testing, system maintenance, repair procedures, robot computer systems,	
	Assemblies	and control languages.	Automation &
	Mechtronics	(AZ CTE Automation & Robotics-Program Description)	Robotics Tech-Standards
	Fuerine entire et		Tech-Standards
	Engineering: Structural	PERFORM ELECTRICAL AND ELECTRONIC TASKS	STANDARD 2.0
	Chassis frame	ANALYZE PROGRAMMABLE LOGIC CONTROLLER (PLC) SYSTEMS	PERFORM ELECTRICAL
	body	 PERFORM DRAFTING TASKS-Make dimensional CAD drawings (e.g., 2D and 3D) 	AND ELECTRONIC TASKS
		DESCRIBE THE OPERATION AND USE OF VARIOUS FORMS OR ELECTRICAL	17,51(5
	Mechanical	MOTORS	STANDARD 4.0
	(Motion)	 Explain the operation and use of DC motors in automation controls PERFORM MECHANICAL SYSTEMS LINKAGES TASKS 	ANALYZE
	Gear: Box,	PERFORM MECHANICAL SYSTEMS LINKAGES TASKS APPLY SENSOR SOLUTIONS	PROGRAMMABLE
	train, parallel	DEMONSTRATE SAFE AND PROPER USE OF ELECTRONIC AND OTHER	LOGIC CONTROLLER
	(linear) stack (vertical), ratio,	LABORATORY EQUIPMENT, TOOLS, AND MATERIALS	(PLC) SYSTEMS
	torque speed		STANDARD 7.0
	torque speca	Lesson Overview:	PERFORM DRAFTING
		<u>1st Semester Students:</u>	TASKS
	Electrical	Login to VEX Certification Accounts:	7.5 Make dimensional
	Chemical	• VEX V5	CAD drawings (e.g., 2D
	electrochemical	Block Programming	and 3D)
		Python Programming	STANDARD 5.0
Ţ	Physical	Workcell	DESCRIBE THE
ามา	Magnetism Batteries	Continue building VEX V5 Robots	OPERATION AND USE
Thursday	Batteries	 Speedbot/Base Bot 	OF VARIOUS FORMS
ay	Software	•	OR ELECTRICAL
	Block	Coding-Block/Python/C/C++	MOTORS
	PLC ladder	Sensors	5.2 Explain the
	logic, CNC,	Bump/touch, Distance, Line Tracker, Camera	operation and use of
	Python, C++,	• Al	DC motors in
	Sensors	Data Analysis	automation controls
	Bump/touchDis	2nD Semester Plus+ Students:	
	tance	Login to VEX Certification Accounts:	STANDARD 6.0
	Light	• VEX V5	PERFORM
	Camera	Block,Python Programming	MECHANICAL SYSTEMS LINKAGES
		Workcell	TASKS
	Physical Computing	Customizing Robots and Parts	STANDARD 10.0 APPLY
	Computing	Tinkercade	SENSOR SOLUTIONS
	AI	 3D Modeling, Electric circuits, Arduino IDE – C/Python Code 	
	Data Collect	 Workflow Process: 	STANDARD 13.0
	DataAnalyze		DEMONSTRATE SAFE AND PROPER USE OF
		 Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing 	ELECTRONIC AND
		 Inkscape > Tinkercad > Ultimaker Cura > Ultimaker 	OTHER LABORATORY
		*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D Modeling	EQUIPMENT, TOOLS,
		Raspberry Pi – Pico Bluetooth/WiFi	AND MATERIAL
		Python	
		Precision Machining	
		Manual/Traditional - Mill and Drill	
		1	

 CNC –ComputerNumeric Control –G/M Code VEX V5 Parts (3D Print) 	

	Notes:	Objective:	Academic
	09/15/2023	•	Standards:
	obotic	Apply basic engineering principles and technical skills for artificial	AZ_CTE
	Assemblies	intelligent management the principles of robotics, design, operational	
	Mechtronics	testing, system maintenance, repair procedures, robot computer systems,	Automation &
		and control languages.	Robotics
	Engineering:	(AZ CTE Automation & Robotics-Program Description)	Tech-Standards
	Structural	PERFORM ELECTRICAL AND ELECTRONIC TASKS	STANDARD 2.0
	Chassis frame	ANALYZE PROGRAMMABLE LOGIC CONTROLLER (PLC) SYSTEMS	PERFORM ELECTRICAL
	body	 PERFORM DRAFTING TASKS-Make dimensional CAD drawings (e.g., 2D and 3D) 	AND ELECTRONIC
	Mechanical	DESCRIBE THE OPERATION AND USE OF VARIOUS FORMS OR ELECTRICAL	TASKS
	(Motion)	MOTORS	
	Gear: Box,	Explain the operation and use of DC motors in automation controls	STANDARD 4.0
	train, parallel	PERFORM MECHANICAL SYSTEMS LINKAGES TASKS	ANALYZE PROGRAMMABLE
	(linear) stack	APPLY SENSOR SOLUTIONS	LOGIC CONTROLLER
	(vertical), ratio,	DEMONSTRATE SAFE AND PROPER USE OF ELECTRONIC AND OTHER	(PLC) SYSTEMS
	torque speed	LABORATORY EQUIPMENT, TOOLS, AND MATERIALS	(. 20) 0.0.20
		Lesson Overview:	STANDARD 7.0
		11st Semester Students:	PERFORM DRAFTING
	Electrical	Login to VEX Certification Accounts:	TASKS
	Chemical	• VEX V5	7.5 Make dimensional
	electrochemical	Block Programming	CAD drawings (e.g., 2D
		 Python Programming 	and 3D)
	Physical		
	Magnetism	Workcell	STANDARD 5.0
-	Batteries	Continue building VEX V5 Robots	DESCRIBE THE OPERATION AND USE
Friday		Speedbot/Base Bot	OF VARIOUS FORMS
dav	Software	Coding-Block/Python/C/C++	OR ELECTRICAL
	Block PLC ladder	Sensors	MOTORS
	logic, CNC,	Bump/touch, Distance, Line Tracker, Camera	
	Python, C++,	 Al 	5.2 Explain the
			operation and use of
	Sensors	Data Analysis	DC motors in
	Bump/touchDis	2nD Semester Plus+ Students:	automation controls
	tance	Login to VEX Certification Accounts:	STANDARD 6.0
	Light	• VEX V5	PERFORM
	Camera	Block,Python Programming	MECHANICAL
	Dhuadaal	Workcell	SYSTEMS LINKAGES
	Physical Computing	Customizing Robots and Parts	TASKS
	computing	Tinkercade	STANDARD 10.0 APPLY
	AI		SENSOR SOLUTIONS
	Data Collect	 3D Modeling, Electric circuits, Arduino IDE – C/Python Code 	
	DataAnalyze	Workflow Process:	STANDARD 13.0
		 Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing 	DEMONSTRATE SAFE
		 Inkscape > Tinkercad > Ultimaker Cura > Ultimaker 	AND PROPER USE OF
		*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D Modeling	ELECTRONIC AND OTHER LABORATORY
		 Raspberry Pi – Pico Bluetooth/WiFi 	EQUIPMENT, TOOLS,
			AND MATERIAL
		Python	
		Precision Machining	
		Manual/Traditional - Mill and Drill	
		CNC –ComputerNumeric Control –G/M Code	