Name:	Grading Quarter:	Week Beginning:	
Robert Lefrandt	2	12/16/2024	
School Year: 2024-25	Subject: Automation	& Robotics/Engineering	

Z	Notes:	Objective:	Academic
Monday	Robotic	Apply basic engineering principles and technical skills for artificial	Standards:
ау	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	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 PERFORM MECHANICAL SYSTEMS LINKAGES TASKS	Coherent
	train,	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
	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
	Electrical (	Sensors: Bump/touch, Distance, Line Tracker, Camera, , AI, Data Analysis	AndRobotics.
	Ohm's Law,	***Customizing Robots and Parts: After Completing 1st Semester Skills	pdf
	Parallel/Seri al Circuits)	Level 2 Plus+ Students:	Az CTE Prof.
	Chemical	Login to VEX Certification Accounts: (Complete Certifications +	Skills have 9 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
	Python, C++	Raspberry Pi – Pico Kit -Bluetooth/WiFi, Python Precision Machining	MachinLearn
	Sensors	CAD/CAM : 3D Printing	Collaborate
	touch, Dist		schools,
	Light, Camera	Competitions: See FabLab/Engineering: Registered Teams: VEX IQ WM Elem 2/? -1 team Phx?, VEX V5 AlchesayHS. 1/11-5 teams	Industry
	Carriera	www_Liein 2/: -1 team Fink!, VEX V5_Alchesayns. 1/11-5 teams	Community

	Other: Racing the Sun (RTS) *See FabLab	

Tuesday	<u>Notes:</u> Robotic	<b>Objective:</b> Apply basic engineering principles and technical skills for artificial	Academic Standards:
sda	Assemblies		Stanuarus.
Ϋ́	Mechtronic	intelligent managementthe principles of robotics, design, operational	Arizona
	TVICETICI OTTIC	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	Drogram
	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	
	(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	AI ,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,		Collaborate
	Python, C++	Manual/Traditional - Mill and Drill , CNC –ComputerNumeric Control –	schools,
	Sensors	G/M Code	•
	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 IQ	
	PhysComp	WM_Elem 2/? -1 team Phx?, VEX V5_AlchesayHS. 1/11-5 teams	
	Embedded		
	smart, IIOT		

	Other: Racing the Sun (RTS) *See FabLab	

	Notes.		A
We	Notes: Robotic	<b>Objective:</b> Apply basic engineering principles and technical skills for artificial	Academic Standards:
dne	Assemblies		Standards.
Wednesday	Mechtronic	intelligent managementthe principles of robotics, design, operational	Arizona
Ϋ́		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/
	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
	Electrical (	·	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)	***Customizing Robots and Parts: After Completing 1st Semester Skills	<b>P</b> 3.
	Chemical	Level 2 Plus+ Students:	Az CTE Prof.
	e-chem	Login to VEX Certification Accounts: (Complete Certifications +	Skills have 9
	Physical	Arduino/PCEP)	areas of
	Magnetism	Tinkercade(Autodesk)/PHET(Physics-Engineering-Tech) Univ-Colorado	measuremnt
	Batteries Software	3D Modeling, Electric circuits, Arduino IDE – C/Python Code	Notes Conti: Al ,Data
		Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing	Collect Data
	Block	Inkscape > Tinkercad > Ultimaker Cura (Settings) > Ultimaker	Analyze Data
	PLC ladder 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: See FabLab/Engineering: Registered Teams: VEX IQ	
	Embedded	WM_Elem 2/? -1 team Phx?, VEX V5_AlchesayHS. 1/11-5 teams	
	smart, IIOT		

Other: Racing the Sun (RTS) *See FabLab	

Notes: Objective: Robotic Assemblies Mechtronic Engineer: Refigineer Refigineer Refigineer Refigineer Refigineer: Refigineer: Refigineer: Refigineer Reverse Engineering Structural Chassis frame body Mechanical (Motion) Gear: Box, train, parallel (linear) Structural (Chassis frame body Mechanical (Motion) Gear: Box, train, parallel (linear) Stack (vertical), ratio, torque speed Electrical (Om's Law, parallel/Speed E				1
Engineer: ReEngineer Reverse Engineering Structural Chassis Chassis frame body Mechanical (Motion) Gear: Box, train, parallel (linear) Strectical, Cincritical) Tatio, torque speed Electrical ( Ohm's Law, Parallel/Seri al Circuits) Chemical Electrical ( Ohm's Law, Parallel/Seri al Circuits) Chemical Electrical Electrical Chemical Electrical Electrical Chemical Electrical Electrical Electrical Chemical Electrical Electrical Chemical Electrical Electrical Electrical Electrical Electrical Chemical Electrical Electri	Τ	Notes:	Objective:	Academic
Engineer: ReEngineer Reverse Engineering Structural Chassis Chassis frame body Mechanical (Motion) Gear: Box, train, parallel (linear) Strectical, Cincritical) Tatio, torque speed Electrical ( Ohm's Law, Parallel/Seri al Circuits) Chemical Electrical ( Ohm's Law, Parallel/Seri al Circuits) Chemical Electrical Electrical Chemical Electrical Electrical Chemical Electrical Electrical Electrical Chemical Electrical Electrical Chemical Electrical Electrical Electrical Electrical Electrical Chemical Electrical Electri	urs	Robotic		Standards:
Engineer: ReEngineer Reverse Engineering Structural Chassis Fame body Mechanical (Motion) Gear: Box, train, parallel (linear) Lesson Overview: Workflow Process: Level 1 Students: Login to VEX Certification Accounts: VEX V5, Block Programming, Python Programming, Workcell speed Speed Electrical ( Ohm's Law, Parallel/Seri al Circuits) Chemical Enchem Physical Magnetism Batteries Groftware Block PLC ladder logic, CNC, Python, C++ Sensors Code Chemical Chambard Speed Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing Inkscape > Tinkercad > Ultimaker Cura (Settings) > Ultimaker Collect Data Analyze Data Ana	day	Assemblies		Arizono
ReEngineer Reverse Refigineering Structural Chassis frame body Mechanical (Motion) Gear: Box, train, parallel (linear) Sementical (vertical), ratio, torque speed speed speed speed Black Physical (Coling Scheme Physical Magnetism Batteries Software Block PLC ladder logic, CNC, Python, C++ Sensors touch, Dist and State Camera PhysComp Embedded (Motion) Responding structural (A) And Chassis frame body Mechanical (Motion) Gear: Box, train, Apply sensor Stouch, Dist and State (vertical), ratio, control of the speed		iviechtronic	testing, system maintenance, repair procedures, robot computer	
Retrigneer Reverse Engineering Structural Chassis Frame body Mechanical (Motion) Gear: Box, train, parallel (linear) Lesson Overview: Workflow Process: Level 1 Students: Login to VEX Certification Accounts: vertural of Cohm's Law, Parallel/Serial Circuits) Chemical e-chem Physical Magnetism Batteries Software Block PLC ladder logic, CNC, Python, C++ Sensors touch, Dist Light, Camera PhysComp Embedded Magnetism Structural (Amoton) Response for the first person of		Engineer:	systems, and control languages.	•
Engineering Structural Chassis frame body Mechanical (Motion) Gear: Box, train, parallel (linear) stack (vertical), ratio, torque speed Electrical ( Ohm's Law, Parallel/Serial Circuits) Chemical e-chem Physical Magnetism Batteries Software Block PLC Iadder Physical Batteries Software Block PLC Iadder Physical Block PLC Iadder Physical Block PLC Iadder Physical Magnetism Batteries Software Block PLC Iadder Iogic, CNC, Python, C++ Sensors touch, Dist Light, Camera PhysComp Embedded  PERFORM MELECTRICAL MD ELECTROLIC TASKS PERFORM MARE LOGIC CONTROLLER (PLC) SYSTEMS PERFORM MEACHANICAL SYSTEMS LOGIC CONTROLLER (PLC) SYSTEMS PERFORM DRAFTING TASKS-Make dimensional CAD drawings (2D/3D) DESCRIBE THE OPERATION AND USE OF VARIOUS FORMS OR ELECTRICAL MOTORS ELECTRICAL MOTORS DEMONSTRATE SAFE AND PROPER USE OF ELECTRONIC AND OTHER LABORATORY EQUIPMENT, TOOLS, AND MATERIALS Lesson Overview: Workflow Process: Level 1 Students: Leyel 1 Students: Login to VEX Certification Accounts: VEX V5 ,Block Programming, Python Programming, Workcell Stemote-Cotrol and building VEX V5Robots -Speedbot/Base Bot, Claw Coding-Block/Python/C/C++ Sensors :Bump/touch, Distance, Line Tracker, Camera, , AI, Data Analysis ***Customizing Robots and Parts: After Completing 1 <sup>st</sup> Semester Skills Level 2 Plus+ Students: Login to VEX Certification Accounts: (Complete Certifications + Arduino/PCEP) Tinkercade(Autodesk)/PHET(Physics-Engineering-Tech) Univ-Colorado Block PLC ladder logic, CNC, Python, C++ Sensors touch, Dist Light, Camera PhysComp Embedded  Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing CAD/CAM: 3D Printing  Competitions. See Fablab/Engineering: Registered Teams: VEX IQ WM_Elem 2/? -1 team Phx?, VEX V5_AlchesayH5. 1/11-5 teams		_	(AZ CTE Automation & Robotics-Program Description)	Education
Chassis frame body Mechanical (Motion) Gear: Box, parallel (linear) stack (vertical), ratio, torque speed Electrical (Ohm's Law, Parallel/Seri al Circuits) Chemical e-chem Physical Magnetism Batteries Software Block PLC ladder logic, CNC, Python, C++ Sensors touch, Dist Light, Camera Block (Print)*Autodesk Fusion 360/Solidoworks: Competitions: See Fablab/Engineering: Registered Teams: VEX IQ WM_Elem 2/? -1 team Phx?, VEX V5_AlchesayHS. 1/11-5 teams			PERFORM ELECTRICAL AND ELECTRONIC TASKS	website:
frame body Mechanical (Motion) Gear: Box, train, Apply SENSOR SOLUTIONS parallel (linear) Stack (vertical), ratio, Login to VEX Certification Accounts: Level 1 Students: Level 1 Students: Level 1 Students: Login to VEX Certification Accounts: Coding-Block/Python/C/C++ Sensors : Bump/touch, Distance, Line Tracker, Camera, Physical Magnetism Batteries Software Block PLC ladder Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing Bindsch Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing Bindsch Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing Bindsch Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing Bindsch Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing Bindsch Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing Bindsch Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing CAD/CAM : 3D Printing CAD/CAM : 3D Printing CAD/CAM : 3D Printing Competitions: See FabLab/Engineering: Registered Teams: VEX IQ WM_Elem 2/? -1 team Phx?, VEX VS. AlchesayHS. 1/11-5 teams  Description/ Industry Credentials/Coherants in automation controls Protyping (2D/30) Codentials/Coherent Sequence/ Septent Stacks APPLY SENSOR SOLUTIONS DESCRIBE THE OPERATION AND USE OF VARIOUS FORMS OR Industry Credentials/Coherent Sequence/ Septent Stacks APPLY SENSOR SOLUTIONS DESCRIBETHE OPERATION AND USE OF VARIOUS FORMS OR Industry Credentials/Coherent Sequence/ Description/Industry Credentials/Coherent Sequence/ Septent Stacks APPLY SENSOR SOLUTIONS DESCRIBETHE OPERATION AND USE OF FLACKS APPLY SENSOR SOLUTIONS DESCRIBETED AND OF PROTECTION COHER Industry Credentials/Coherent Sequence/ Septent Stacks  Level 1 Students: Septent Stacks  Level 2 State AND PROPER USE OF ELECTRONIC AND OTHER Light, Camera PhysComp Embedded  Description/Industry Credentials/Coherent Sequence/ Description/Industry Credentials/Coherent Sequence/ Description/Industry Industry Credentials/Coherent Sequence/ Description/Industry Credentials/Coherent Sequence/ Description/Industry Credentials/Coh			ANALYZE PROGRAMMABLE LOGIC CONTROLLER (PLC) SYSTEMS	Drogram
Mechanical (Motion) Gear: Box, train, parallel (Ilinear) stack (vertical), ratio, torque speed RemoteCotrol and building VEX V5Robots -Speedbot/Base Bot, Claw Parllel/Serial Clircuits) Electrical (Ohm's Law, Parallel/Serial Clircuits) Chemical e-chem Physical Magnetism Batteries Software Block PLC ladder logic, CNC, Python, C++ Sensors Block PLC ladder logic, CNC, Python, C++ Sensors touch, Dist Light, Camera PhysComp Embedded  Mechanical (Motion) Gear: Box, train, APPLY SENSOR SOLUTIONS Explain the operation and use of DC motors in automation controls PERFORM MECHANICAL SYSTEMS LINKAGES TASKS APPLY SENSOR SOLUTIONS Explain the operation and use of DC motors in automation controls PCRFORM MECHANICAL SYSTEMS LINKAGES TASKS APPLY SENSOR SOLUTIONS DEMONSTRATE SAFE AND PROPER USE OF ELECTRONIC AND OTHER Sequence/ Sequence/ www.azed.g ov/cte/ar/ www.azed.g ov/cte/ar/  Www.azed.g ov/cte/ar/  Www.azed.g ov/sites/defa ult/files/202 1/06/Progra mDescription — Automation AndRobotics pdf and Parts: After Completing 1st Semester Skills Level 2 Plus+ Students: Login to VEX Certification Accounts: (Complete Certifications + Arduino/PCEP)  Tinkercade(Autodesk)/PHET(Physics-Engineering-Tech) Univ-Colorado 3D Modeling, Electric circuits, Arduino IDE — C/Python Code Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing Inkscape > Tinkercade > Ultimaker Cura (Settings) > Ultimaker (Print)*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D Manual/Traditional - Mill and Drill , CNC —ComputerNumeric Control — G/M Code  Raspberry Pi — Pico Kit -Bluetooth/WiFi, Python Precision Machining CAD/CAM : 3D Printing Competitions: See FabLab/Engineering: Registered Teams: VEX IQ WM_Elem 2/? -1 team Phx?, VEX V5_AlchesayHS. 1/11-5 teams			PERFORM DRAFTING TASKS-Make dimensional CAD drawings (2D/3D)	_
(Motion) Gear: Box, train, parallel   (linear)   Stack   (vertical), train,   Stack   Stac				-
Explain the operation and use of DC motors in automation controls perFORM MECHANICAL SYSTEMS LINKAGES TASKS APPLY SENSOR SOLUTIONS DEMONSTRATE SAFE AND PROPER USE OF ELECTRONIC AND OTHER LABORATORY EQUIPMENT, TOOLS, AND MATERIALS Lesson Overview: Workflow Process:				_
train, parallel (linear) Stack (vertical), ratio, torque speed RemoteCotrol and building VEX V5, Block Programming, Pthon Programming, Workcell sensors Sump/touch, Distance, Line Tracker, Camera Physical Magnetism Batteries Software Block PLC ladder logic, CNC, Python, C++ Sensors touch, Dist Light, Camera PhysComp Embedded Stack (Pertical), parallel/Sensors : Berson Overview: Workflow Process: Level 1 Students: Login to VEX Certification Accounts: UEVX V5, Block Programming, Python Programming, Workcell vt/files/202 ut/files/202 ut		` '		-
parallel (linear) stack (vertical), ratio, torque speed				Sequence/
(linear) stack (vertical), ratio, torque speed RemoteCotrol and building VEX V5Robots -Speedbot/Base Bot, Claw Parallel/Seri al Circuits) Chemical e-chem Physical Batteries Software Block PLC ladder logic, CNC, Python, C++ Sensors touch, Dist Light, Camera PhysComp Embedded  LABORATORY EQUIPMENT, TOOLS, AND MATERIALS  Lesson Overview: Workflow Process:  Level 1 Students: Level 1 Students:  Level 1 Students:  Level 1 Students:  VXX V5 , Block Programming, Python Programming, Workcell speed RemoteCotrol and building VEX V5Robots -Speedbot/Base Bot, Claw Coding-Block/Python/C/C++ Sensors: Bump/touch, Distance, Line Tracker, Camera, , Al, Data Analysis ***Customizing Robots and Parts: After Completing 1st Semester Skills Level 2 Plus+ Students: Level 2 Plus+ Students: Login to VEX Certification Accounts: (Complete Certifications + Arduino/PCEP)  Magnetism Batteries Software  Block PLC ladder logic, CNC, Python, C++ Sensors Stouch, Dist Light, CAD/CAM: 3D Printing Competitions: See FabLab/Engineering: Registered Teams: VEX IQ WM_Elem 2/? -1 team Phx?, VEX V5_AlchesayHS. 1/11-5 teams  www.azed.g ov/cte/ar/  www.azed.g ov/sites/defa ult/files/202 1/06/Progra mbescription AndRobotics. pdf  Az CTE Prof. Skills have 9 areas of measuremnt  Notes Conti: Al, Data Collect Data Analyze Data MachinLearn Collaborate schools, Industry Community				
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(vertical), ratio, torque speed RemoteCotrol and building VEX V5Robots -Speedbot/Base Bot, Claw Coding-Block/Python/C/C++ Sensors: Bump/touch, Distance, Line Tracker, Camera, , AI, Data Analysis ***Customizing Robots and Parts: After Completing 1st Semester Skills Level 2 Plus+ Students:  Login to VEX Certification Accounts: (Complete Certifications + Arduino/PCEP)  Magnetism Batteries Software Block PLC ladder logic, CNC, Python, C++ Sensors  Block PLC ladder logic, CNC, Python, C++ Sensors touch, Dist Raspberry Pi – Pico Kit -Bluetooth/WiFi, Python Precision Machining CAD/CAM: 3D Printing Competitions: See FabLab/Engineering: Registered Teams: VEX IQ WM_Elem 2/? -1 team Phx?, VEX V5_AlchesayHS. 1/11-5 teams  www.azed.g ov/sites/defa ult/files/202 1/06/Progra mDescription cov/sites/defa ult/files/202 1/06/Progra mDescription and procession for medical povision povisions. And Robotics. pdf  www.azed.g ov/sites/defa ult/files/202 1/06/Progra mDescription and Paths is povisioned. Accounts: Analogus povision		1 '		ov/cte/ar/
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	Other: Racing the Sun (RTS) *See FabLab	

Objective: Notes: Friday Robotic Apply basic engineering principles and technical skills for... artificial Assemblies intelligent management ...the principles of robotics, design, operational Mechtronic testing, system maintenance, repair procedures, robot computer systems, and control languages. Engineer: ReEngineer (AZ CTE Automation & Robotics-Program Description) Reverse Engineering PERFORM ELECTRICAL AND ELECTRONIC TASKS Structural ANALYZE PROGRAMMABLE LOGIC CONTROLLER (PLC) SYSTEMS Chassis PERFORM DRAFTING TASKS-Make dimensional CAD drawings (2D/3D) frame body DESCRIBE THE OPERATION AND USE OF VARIOUS FORMS OR Mechanical **ELECTRICAL MOTORS** (Motion) Explain the operation and use of DC motors in automation controls Gear: Box, PERFORM MECHANICAL SYSTEMS LINKAGES TASKS train. APPLY SENSOR SOLUTIONS parallel DEMONSTRATE SAFE AND PROPER USE OF ELECTRONIC AND OTHER (linear) LABORATORY EQUIPMENT, TOOLS, AND MATERIALS stack **Lesson Overview:** Workflow Process: (vertical), Level 1 Students: ratio, Login to VEX Certification Accounts: torque VEX V5 ,Block Programming, Python Programming, Workcell speed RemoteCotrol and building VEX V5Robots -Speedbot/Base Bot, Claw Electrical ( Coding-Block/Python/C/C++ Ohm's Law. Sensors: Bump/touch, Distance, Line Tracker, Camera, , AI, Data Analysis Parallel/Seri \*\*\*Customizing Robots and Parts : After Completing 1st Semester Skills al Circuits) Level 2 Plus+ Students: Chemical e-chem Login to VEX Certification Accounts: (Complete Certifications + Arduino/PCEP) **Physical** Magnetism Tinkercade(Autodesk)/PHET(Physics-Engineering-Tech) Univ-Colorado Batteries 3D Modeling, Electric circuits, Arduino IDE – C/Python Code Software Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing Block/PLC Inkscape > Tinkercad > Ultimaker Cura (Settings) > Ultimaker ladder (Print)\*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D logic, CNC, Manual/Traditional - Mill and Drill , CNC - Computer Numeric Control -Python, C++ G/M Code Sensors bump/touc Raspberry Pi – Pico Kit -Bluetooth/WiFi, Python Precision Machining h DistLight, CAD/CAM: 3D Printing Camera Competitions: See FabLab/Engineering: Registered Teams: VEX IQ

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Academic Standards:

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of
Education
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Description/
Industry
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Az CTE Prof. Skills have 9 areas of measuremnt

Notes Conti:
PhysComp
Embedded
smart, IIOT
AI ,Data
Collect Data
Analyze Data
MachinLearn
Collaborate
schools,
Industry
Community

	Other: Racing the Sun (RTS) *See FabLab	