Name: Robert Lefrandt	Grading
School Year: 2023-24	Subject: Automation & Robotics

	Notes:	08/21/2023 -Monday - 4th Week
	Robotic Assemblies Mechtronics	Objective: Apply basic engineering principles and technical skills for artificial intelligent managementthe
	Engineering: Structural Chassis frame body  Mechanical (Motion) Gear: Box, train, parallel (linear) stack (vertical), ratio, torque speed	control languages.  https://live-az-ade.pantheonsite.io/sites/default/files/2021/06/ProgramDescription_AutomationAndRobotics.pdf  STANDARD 10.0 APPLY SENSOR SOLUTIONS 10.1 Select sensors for use in a feedback control loop 10.2 Construct and operate a system with a feedback control loop 10.3 Calibrate sensors 10.4 Gather and statistically analyze performance data on a control loop 10.5 Explain analog to dighttps://www.azed.gov/sites/default/files/2021/01/AutomationandRoboticsTSs48050020N.pdf
Monday	Electrical Chemical electrochemical  Physical Magnetism Batteries  Software Block PLC ladder logic, CNC, Python, C++,  Sensors Bump/touchDistance Light Camera  Physical Computing	Lesson Overview:  1st Semester Students:     Login to VEX Certification Accounts:     VEX V5     Block Programming     Python Programming     Workcell     Continue building VEX V5 Robots     Speedbot/Base Bot     https://www.vexrobotics.com/v5/downloads/build-instructions  Coding-Block:     https://vr.vex.com/     https://codev5.vex.com/  Sensors     Bump/touch, Distance, Light, Camera     Al     Data Analysis  2nd Semester Plus+ Students:
	Al Data Collect DataAnalyze	<ul> <li>Login to VEX Certification Accounts:         <ul> <li>VEX V5</li> <li>Block Programming</li> <li>Python Programming</li> <li>Workcell</li> </ul> </li> <li>Circuits/Electronics         <ul> <li>Cut cables</li> <li>Snap Circuits kit(s)</li> <li>Rechargeable batteries</li> </ul> </li> <li>Tinkercade         <ul> <li>3D Modeling</li> <li>Electric circuits</li> <li>Arduino IDE – C/Python Programming</li> </ul> </li> </ul>

- Workflow Process:
- 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
    - o Python

Building VEX V5 Robots and customizing robots

VEX V5 Parts (3D Print)

**Autodesk Tinkercad** 

https://www.tinkercad.com/things/5zBduwCA6c9-vex-v5-parts

VEX V5 and VEX Pro (CAD Files)

https://www.vexrobotics.com/v5

https://www.vexrobotics.com/pro

https://www.vexrobotics.com/v5/products/view-

all/?q=\_\_empty\_\_&vex\_site=cads&vex\_m2\_vexrobotics\_cads%5BrefinementList%5D%5Bproduct

**Understanding VEX Classic and V5 Smart Motors** 

https://kb.vex.com/hc/en-us/articles/360060929971-Understanding-V5-Smart-Motors

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https://www.autodesk.com/education/edu-software/overview?sorting=featured&filters=individu

https://motors.vex.com/brushed-brushless

	Notes:	08/22/2023 - Tuesday - 4th Week
	, we can	oo/22/2023 Taesaay Tan Week
	Robotic Assemblies Mechtronics	Objective: Apply basic engineering principles and technical skills for artificial intelligent managementthe control languages.
	Engineering: Structural Chassis frame body	https://live-az-ade.pantheonsite.io/sites/default/files/2021/06/ProgramDescription_AutomationAndRobotics.pdf
	Mechanical (Motion) Gear: Box, train, parallel (linear) stack (vertical), ratio, torque speed	Lesson Overview:  1st Semester Students: Login to VEX Certification Accounts:  VEX V5 Block Programming Python Programming Workcell
	Electrical Chemical electrochemical Physical	Continue building VEX V5 Robots Speedbot/Base Bot https://www.vexrobotics.com/v5/downloads/build-instructions
	Magnetism	Coding-Block:
	Batteries	https://vr.vex.com/
_		https://codev5.vex.com/
Tuesday	Software Block PLC ladder logic, CNC, Python, C++, Sensors Bump/touchDistance	Sensors  Bump/touch, Distance, Light, Camera  Al  Data Analysis  2 <sup>nD</sup> Semester Plus+ Students:  Login to VEX Certification Accounts:
	Light Camera	<ul><li>VEX V5</li><li>Block Programming</li></ul>
	Camera	Python Programming
	Physical Computing	o Workcell
	Al Data Collect DataAnalyze	Circuits/Electronics  Cut cables Snap Circuits kit(s) Rechargeable batteries  Tinkercade Sub Modeling Electric circuits Arduino IDE – C/Python Programming  Workflow Process: 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

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		Notes:	08/23/2023 - Wednesday - 4th Week
	Robotic Assemblies Mechtronics	Objective: Apply basic engineering principles and technical skills for artificial intelligent managementthe control languages.	
	Engineering: Structural Chassis frame body	https://live-az-ade.pantheonsite.io/sites/default/files/2021/06/ProgramDescription_AutomationAndRobotics.pdf  Lesson Overview:	
	Mechanical (Motion) Gear: Box, train, parallel (linear) stack (vertical), ratio, torque speed	1st Semester Students: Login to VEX Certification Accounts:  VEX V5 Block Programming Python Programming Workcell	
		Electrical Chemical electrochemical	Continue building VEX V5 Robots Speedbot/Base Bot https://www.vexrobotics.com/v5/downloads/build-instructions
		Physical	
	<	Magnetism	
	Wednesday	Batteries	Coding-Block: https://vr.vex.com/
	les		https://codev5.vex.com/
	da	Software	
	₹	Block	Sensors
		PLC ladder logic,	Bump/touch, Distance, Light, Camera
		CNC, Python, C++,	Al
			Data Analysis
		Sensors	
		Bump/touchDistance	2 <sup>nD</sup> Semester Plus+ Students:
		Light	Login to VEX Certification Accounts:
		Camera	• VEX V5
			Block Programming
		Physical Computing	<ul><li>Python Programming</li><li>Workcell</li></ul>
	Al	Welkeen	
	Data Collect	Circuits/Electronics	
		DataAnalyze	Cut cables
		,	Snap Circuits kit(s)
			<ul> <li>Rechargeable batteries</li> </ul>
			Tinkercade
			o 3D Modeling
			o Electric circuits
			<ul> <li>Arduino IDE – C/Python Programming</li> </ul>
			Workflow Process:
			Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing
			Inkscape > Tinkercad > Ultimaker Cura > Ultimaker     *Autodock Fusion 360/Solidworks: Combine 3d Sketch/3D Modeling
			TANTEDURES FUELDS SHUNDIIGWOESEL OMBING JA NEGENIZII NIOGOIINA

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https://motors.vex.com/brushed-brushless

	Notes:	08/24/2023 - Thursday — 4 <sup>th</sup> Week
		Objective:
		Apply basic engineering principles and technical skills for artificial intelligent managementthe
	Robotic Assemblies	control languages.
	Mechtronics	
		https://live-az-ade.pantheonsite.io/sites/default/files/2021/06/ProgramDescription_AutomationAndRobotics.pdf
	Engineering:	
	Structural	
	Chassis frame body	Lesson Overview:
		1 <sup>st</sup> Semester Students:
	Mechanical (Motion)	Login to VEX Certification Accounts:
	Gear: Box, train,	VEX V5
	parallel (linear) stack	Block Programming
	(vertical), ratio,	Python Programming
	torque speed	Workcell
		- Workeen
	Electrical	Continue building VEX V5 Robots
	Chemical	Speedbot/Basebot
	electrochemical	https://www.vexrobotics.com/v5/downloads/build-instructions
	Physical	Cadina Bladu
Th	Magnetism	Coding-Block:
ur	Batteries	https://vr.vex.com/ https://codev5.vex.com/
Thursday		nitips.//codevs.vex.com/
٧	Software	Sensors
	Block	Bump/touch, Distance, Light, Camera
	PLC ladder logic,	Al
	CNC, Python, C++,	Data Analysis
		, and the second se
	Sensors	2 <sup>nD</sup> Semester Plus+ Students:
	Bump/touchDistance	Login to VEX Certification Accounts:
	Light	VEX V5
	Camera	Block Programming
		Python Programming
	Physical Computing	Workcell
	Δ1	Circuits/Electronics
	Al Data Collect	Cut cables
	Data Collect	Snap Circuits kit(s)
	DataAnalyze	Rechargeable batteries
		Tinkercade
		3D Modeling
		Electric circuits
		Arduino IDE – C/Python Programming
		Workflow Process:
		Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing
		Inkscape > Tinkercad > Ultimaker Cura > Ultimaker
		*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D Modeling

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	Wiechtronics	control languages.
	Engineering: Structural	https://live-az-ade.pantheonsite.io/sites/default/files/2021/06/ProgramDescription_AutomationAndRobotics.pdf
	Chassis frame body	
	Mechanical (Motion)	Lesson Overview:
	Gear: Box, train,	1st Semester Students:
	parallel (linear) stack	Login to VEX Certification Accounts:
	(vertical), ratio,	• VEX V5
	torque speed	Block Programming
		Python Programming
		Workcell
	Electrical	
	Chemical	Continue building VEX V5 Robots
	electrochemical	Speedbot/Basebot
	Physical	https://www.vexrobotics.com/v5/downloads/build-instructions
	Magnetism	Coding Block
	Batteries	Coding-Block: https://vr.vex.com/
		https://codev5.vex.com/
		https://codevs.vex.com/
Fr.	Software	Sensors
Friday	Block	Bump/touch, Distance, Light, Camera
~	PLC ladder logic, CNC, Python, C++,	Al
	CIVC, Fython, C++,	Data Analysis
	Sensors	
	Bump/touchDistance	2 <sup>nD</sup> Semester Plus+ Students:
	Light	Login to VEX Certification Accounts:
	Camera	VEX V5
		Block Programming
	Physical Computing	Python Programming
	,	Workcell
	Al	
	Data Collect	Circuits/Electronics
	DataAnalyze	Cut cables
		Snap Circuits kit(s)
		<ul> <li>Rechargeable batteries</li> </ul>
		Tinkercade
		o 3D Modeling

Electric circuits

Raspberry Pi – Pico Bluetooth/WiFi

o Python

Workflow Process:

Arduino IDE – C/Python Programming

Protyping: 2D Sketch > 3D Modeling > 3D Settings > 3D Printing

• Inkscape > Tinkercad > Ultimaker Cura > Ultimaker

\*Autodesk Fusion 360/Solidworks: Combine 2d Sketch/3D Modeling

08/25/2023 - Friday - 4th Week

Apply basic engineering principles and technical skills for... artificial intelligent management ...the

Objective:

Notes:

**Robotic Assemblies** 

Mechtronics

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