

Name: Robert Lefrandt	Grading Quarter: 1
School Year: 2023-24	Subject: Automation & Robotics

Monday	Notes:	08/14/2023 -Monday - 3 rd Week
	Robotic Assemblies Mechtronics	Objective: Apply basic engineering principles and technical skills for... artificial intelligent management ...the principle control languages.
	<u>Engineering:</u> 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	<u>1st Semester Students:</u> Login to VEX Certification Accounts: <ul style="list-style-type: none"> • VEX V5 • Block Programming • Python Programming • Workcell Continue building VEX V5 Robots Speedbot/Basebot https://www.vexrobotics.com/v5/downloads/build-instructions
	Electrical Chemical Physical Magnetism Batteries	<u>2nd Semester Plus+ Students:</u> Login to VEX Certification Accounts: <ul style="list-style-type: none"> • VEX V5 • Block Programming • Python Programming • Workcell Circuits/Electronics <ul style="list-style-type: none"> • Cut cables • Snap Circuits kit(s) <ul style="list-style-type: none"> ◦ Rechargeable batteries • Tinkercade <ul style="list-style-type: none"> ◦ Electric circuits ◦ Arduino IDE – C/Python Programming • Raspberry Pi – Pico Bluetooth/WiFi <ul style="list-style-type: none"> ◦ Python
	Software Block PLC ladder logic, CNC, Python, C++,	
	Sensors Physical Computing	Building VEX V5 Robots and customizing robots
	AI	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

	<p>https://www.vexrobotics.com/v5/products/view-all/?q=__empty__&vex_site=cads&vex_m2_vexrobotics_cads%5BrefinementList%5D%5Bproduct_lines%5</p> <p>Understanding VEX Classic and V5 Smart Motors https://kb.vex.com/hc/en-us/articles/360060929971-Understanding-V5-Smart-Motors</p> <p>https://wiki.purduesigbots.com/vex-electronics/vex-electronics/motors https://motors.vex.com/ https://motors.vex.com/introduction</p> <p>https://curriculum.vexrobotics.com/curriculum/speed-power-torque-and-dc-motors/classical-mechanics.h</p> <p>https://curriculum.vexrobotics.com/curriculum/speed-power-torque-and-dc-motors/dc-motors.html</p> <p>https://curriculum.vexrobotics.com/curriculum/speed-power-torque-and-dc-motors/simulate_and_size_a</p> <p>https://www.autodesk.com/education/edu-software/overview?sorting=featured&filters=individual</p> <p>https://motors.vex.com/brushed-brushless</p> <p>https://motors.vex.com/vexpro-motors</p>
--	--

Tuesday	Notes:	08/15/2023 - Tuesday - 3 rd Week
	Robotic Assemblies Mechtronics	Objective: Apply basic engineering principles and technical skills for... artificial intelligent management ...the principle control languages.
	<u>Engineering:</u> 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	<u>1st Semester Students:</u> Login to VEX Certification Accounts: <ul style="list-style-type: none"> • VEX V5 • Block Programming • Python Programming • Workcell Continue building VEX V5 Robots Speedbot/Basebot https://www.vexrobotics.com/v5/downloads/build-instructions
	Electrical Chemical Physical Magnetism Batteries	<u>2nd Semester Plus+ Students:</u> Login to VEX Certification Accounts: <ul style="list-style-type: none"> • VEX V5 • Block Programming • Python Programming • Workcell Circuits/Electronics <ul style="list-style-type: none"> • Cut cables • Snap Circuits kit(s) <ul style="list-style-type: none"> ◦ Rechargeable batteries • Tinkercade <ul style="list-style-type: none"> ◦ Electric circuits ◦ Arduino IDE – C/Python Programming • Raspberry Pi – Pico Bluetooth/WiFi <ul style="list-style-type: none"> ◦ Python Building VEX V5 Robots and customizing robots
	Software Block PLC ladder logic, CNC, Python, C++,	
	Sensors Physical Computing	
	AI	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_lines%5D

		<p>Understanding VEX Classic and V5 Smart Motors https://kb.vex.com/hc/en-us/articles/360060929971-Understanding-V5-Smart-Motors</p> <p>https://wiki.purduesigbots.com/vex-electronics/vex-electronics/motors https://motors.vex.com/ https://motors.vex.com/introduction</p> <p>https://curriculum.vexrobotics.com/curriculum/speed-power-torque-and-dc-motors/classical-mechanics.h</p> <p>https://curriculum.vexrobotics.com/curriculum/speed-power-torque-and-dc-motors/dc-motors.html</p> <p>https://curriculum.vexrobotics.com/curriculum/speed-power-torque-and-dc-motors/simulate_and_size_a</p> <p>https://www.autodesk.com/education/edu-software/overview?sorting=featured&filters=individual</p> <p>https://motors.vex.com/brushed-brushless</p> <p>https://motors.vex.com/vexpro-motors</p>
--	--	---

Wednesday	Notes:	08/16/2023 - Wednesday - 3 rd Week
	Robotic Assemblies Mechtronics <u>Engineering:</u> Structural Chassis frame body Mechanical (Motion) Gear: Box, train, parallel (linear) stack (vertical), ratio, torque speed Electrical Chemical Physical Magnetism Batteries Software Block PLC ladder logic, CNC, Python, C++, Sensors Physical Computing AI	<p>Objective: Apply basic engineering principles and technical skills for... artificial intelligent management ...the principle control languages.</p> <p>https://live-az-ade.pantheonsite.io/sites/default/files/2021/06/ProgramDescription_AutomationAndRobotics.pdf</p> <p>Lesson Overview:</p> <p><u>1st Semester Students:</u> Login to VEX Certification Accounts:</p> <ul style="list-style-type: none"> • VEX V5 • Block Programming • Python Programming • Workcell <p>Continue building VEX V5 Robots Speedbot/Basebot https://www.vexrobotics.com/v5/downloads/build-instructions</p> <p><u>2nd Semester Plus+ Students:</u> Login to VEX Certification Accounts:</p> <ul style="list-style-type: none"> • VEX V5 • Block Programming • Python Programming • Workcell <p>Circuits/Electronics</p> <ul style="list-style-type: none"> • Cut cables • Snap Circuits kit(s) <ul style="list-style-type: none"> ◦ Rechargeable batteries • Tinkercade <ul style="list-style-type: none"> ◦ Electric circuits ◦ Arduino IDE – C/Python Programming • Raspberry Pi – Pico Bluetooth/WiFi <ul style="list-style-type: none"> ◦ Python <p>Building VEX V5 Robots and customizing robots</p> <p>VEX V5 Parts (3D Print) Autodesk Tinkercad https://www.tinkercad.com/things/5zBduwCA6c9-vex-v5-parts</p> <p>VEX V5 and VEX Pro (CAD Files) https://www.vexrobotics.com/v5 https://www.vexrobotics.com/pro</p> <p>https://www.vexrobotics.com/v5/products/view-all/?q=__empty__&vex_site=cads&vex_m2_vexrobotics_cads%5BrefinementList%5D%5Bproduct_lines%5D</p>

		<p>Understanding VEX Classic and V5 Smart Motors https://kb.vex.com/hc/en-us/articles/360060929971-Understanding-V5-Smart-Motors</p> <p>https://wiki.purduesigbots.com/vex-electronics/vex-electronics/motors https://motors.vex.com/ https://motors.vex.com/introduction</p> <p>https://curriculum.vexrobotics.com/curriculum/speed-power-torque-and-dc-motors/classical-mechanics.h</p> <p>https://curriculum.vexrobotics.com/curriculum/speed-power-torque-and-dc-motors/dc-motors.html</p> <p>https://curriculum.vexrobotics.com/curriculum/speed-power-torque-and-dc-motors/simulate_and_size_a</p> <p>https://www.autodesk.com/education/edu-software/overview?sorting=featured&filters=individual</p> <p>https://motors.vex.com/brushed-brushless</p> <p>https://motors.vex.com/vexpro-motors</p>
--	--	---

Thursday	Notes:	08/17/2023 - Thursday - 3 rd Week
	Robotic Assemblies	Objective: Apply basic engineering principles and technical skills for... artificial intelligent management ...the principle control languages.
	Mechtronics	https://live-az-ade.pantheonsite.io/sites/default/files/2021/06/ProgramDescription_AutomationAndRobotics.pdf
	Engineering:	
	Structural	Lesson Overview:
	Chassis	<u>1st Semester Students:</u>
	frame body	Login to VEX Certification Accounts:
	Mechanical (Motion)	<ul style="list-style-type: none"> • VEX V5 • Block Programming • Python Programming • Workcell
	Gear: Box, train, parallel (linear) stack (vertical), ratio, torque speed	Continue building VEX V5 Robots Speedbot/Basebot https://www.vexrobotics.com/v5/downloads/build-instructions
	Electrical	<u>2nd Semester Plus+ Students:</u>
	Chemical	Login to VEX Certification Accounts:
	Physical	<ul style="list-style-type: none"> • VEX V5 • Block Programming • Python Programming • Workcell
	Magnetism	Circuits/Electronics
	Batteries	<ul style="list-style-type: none"> • Cut cables • Snap Circuits kit(s) <ul style="list-style-type: none"> ◦ Rechargeable batteries • Tinkercade <ul style="list-style-type: none"> ◦ Electric circuits ◦ Arduino IDE – C/Python Programming • Raspberry Pi – Pico Bluetooth/WiFi <ul style="list-style-type: none"> ◦ Python
	Software	Building VEX V5 Robots and customizing robots
	Block	VEX V5 Parts (3D Print)
	PLC ladder logic, CNC, Python, C++,	Autodesk Tinkercad https://www.tinkercad.com/things/5zBduwCA6c9-vex-v5-parts
	Sensors	VEX V5 and VEX Pro (CAD Files)
	Physical Computing	https://www.vexrobotics.com/v5
	AI	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_lines%5D

		<p>Understanding VEX Classic and V5 Smart Motors https://kb.vex.com/hc/en-us/articles/360060929971-Understanding-V5-Smart-Motors</p> <p>https://wiki.purduesigbots.com/vex-electronics/vex-electronics/motors https://motors.vex.com/ https://motors.vex.com/introduction</p> <p>https://curriculum.vexrobotics.com/curriculum/speed-power-torque-and-dc-motors/classical-mechanics.h</p> <p>https://curriculum.vexrobotics.com/curriculum/speed-power-torque-and-dc-motors/dc-motors.html</p> <p>https://curriculum.vexrobotics.com/curriculum/speed-power-torque-and-dc-motors/simulate_and_size_a</p> <p>https://www.autodesk.com/education/edu-software/overview?sorting=featured&filters=individual</p> <p>https://motors.vex.com/brushed-brushless</p> <p>https://motors.vex.com/vexpro-motors</p>
--	--	---

Friday	Notes:	08/18/2023 - Friday - 3 rd Week
	Robotic Assemblies Mechtronics	Objective: Apply basic engineering principles and technical skills for... artificial intelligent management ...the principle control languages.
	<u>Engineering:</u> 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	<u>1st Semester Students:</u> Login to VEX Certification Accounts: <ul style="list-style-type: none"> • VEX V5 • Block Programming • Python Programming • Workcell Continue building VEX V5 Robots Speedbot/Basebot https://www.vexrobotics.com/v5/downloads/build-instructions
	Electrical Chemical Physical Magnetism Batteries	<u>2nd Semester Plus+ Students:</u> Login to VEX Certification Accounts: <ul style="list-style-type: none"> • VEX V5 • Block Programming • Python Programming • Workcell Circuits/Electronics <ul style="list-style-type: none"> • Cut cables • Snap Circuits kit(s) <ul style="list-style-type: none"> ◦ Rechargeable batteries • Tinkercade <ul style="list-style-type: none"> ◦ Electric circuits ◦ Arduino IDE – C/Python Programming • Raspberry Pi – Pico Bluetooth/WiFi <ul style="list-style-type: none"> ◦ Python Building VEX V5 Robots and customizing robots
	Software Block PLC ladder logic, CNC, Python, C++,	
	Sensors Physical Computing	
	AI	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_lines%5D

		<p>Understanding VEX Classic and V5 Smart Motors</p> <p>https://kb.vex.com/hc/en-us/articles/360060929971-Understanding-V5-Smart-Motors</p> <p>https://wiki.purduesigbots.com/vex-electronics/vex-electronics/motors</p> <p>https://motors.vex.com/</p> <p>https://motors.vex.com/introduction</p> <p>https://curriculum.vexrobotics.com/curriculum/speed-power-torque-and-dc-motors/classical-mechanics.h</p> <p>https://curriculum.vexrobotics.com/curriculum/speed-power-torque-and-dc-motors/dc-motors.html</p> <p>https://curriculum.vexrobotics.com/curriculum/speed-power-torque-and-dc-motors/simulate_and_size_a</p> <p>https://www.autodesk.com/education/edu-software/overview?sorting=featured&filters=individual</p> <p>https://motors.vex.com/brushed-brushless</p> <p>https://motors.vex.com/vexpro-motors</p>
--	--	--