Name:	Grading Quarter:	Week Beginning:
Robert Lefrandt	2	12/16/2024
School Year: 2024-25	Subject: Fab Lab/Engi	neering

Mo	Notes:	Fab Lab/Engineering	Academic Standards
Monday	Robotic Assemblies	Objective:	Standards:
۱۷ ۲	Mechtronic	The Fab Lab/Engineering instructional program prepares students to	Arizona
	F	apply basic engineering principles and technical skills in support of	Department
	Engineer: ReEngineer	engineers engaged in a wide variety of projects.	of
	Reverse	Lesson Overview:	Education
	Engineering	Students learn to apply Science Technology Engineering Math (STEM)	Website:
	Structural	concepts to current technologies and tools as they learn about the	Program
	Chassis frame body	different disciplines and opportunities within the fields of engineering.	Description/
	Mechanical		Industry
	(Motion)	Blueprint for Instruction and Assessment	Credentials/
	Gear: Box,	Engineering Math and Science Principles, Tools, Project Management,	Coherent
	train,	Address Needs in Global Society	Sequence/
	parallel (linear)	VersCAMM SP-300i 30" Eco-Solvent Injet PrinterCutter	https://www
	(linear) stack	• Teacher Print –	.azed.gov/cte
	(vertical),	Laser Engraving/Cutting: Cups, other	/es/
	ratio,	3D Printing-	
	torque	Competitions Prep: Robotics:	
	speed	• VEX IQ: VEX IQ Dec. 13, 2024-Whiteriver Elementary (BRES-Not?)	
	Mechtronic	 Vex V5: Alchesay HS: 11/18/24, 11/16-18/24, 1/11/2025 	
	Electrical (Ohm's Law,	 FRC Team - 4H/Community – Room/Sponsor 	
	Parallel/Seri	Solar Go-kart: "Racing to the Sun" (Tuscon, AZ) 11/19 (Tues)	
	al Circuits)	sarsef.org/racing-the-sun/	
	Chemical e-chem	sarsef.org/racing-the-sun/important-dates/	
	Physical	Anissa Alvarado (anissa@sarsef.org)	
	Magnetism	• 2024	
	Batteries Software	 November 1 – Preliminary Project Plans Due 	
	Block	 November 15 – Mechanical and Electrical Drafts Due 	
	PLC ladder	 11/19 (Tues) - *RTS Advisors visit FabLab 	
	logic, CNC, Python, C++	• 11/22-RTS Submittal -Review11/26/2024	
	Sensors	• 2025 - Other dates?	
	touch, Dist		
	Light,	 January 31 – School Fees Due 	
	Camera	 March 29 – Test Day 	

 April 26 – Race Day 	

-	Notes:	Fab Lab/Engineering	Academic
Tuesday	Robotic		Standards:
day	Assemblies	Objective:	
	Mechtronic	The Fab Lab/Engineering instructional program prepares students to	Arizona
	Engineer:	apply basic engineering principles and technical skills in support of	Department
	ReEngineer	engineers engaged in a wide variety of projects.	of
	Reverse	Lesson Overview:	Education
	Engineering	Students learn to apply Science Technology Engineering Math (STEM)	Website:
	Structural	concepts to current technologies and tools as they learn about the	Drogram
	Chassis	different disciplines and opportunities within the fields of engineering.	Program Description/
	frame body Mechanical	different disciplines and opportunities within the fields of engineering.	Industry
	(Motion)		Credentials/
	Gear: Box,	Blueprint for Instruction and Assessment	Coherent
	train,	Engineering Math and Science Principles, Tools, Project Management,	Sequence/
	parallel	Address Needs in Global Society	·
	(linear)	VersCAMM SP-300i 30" Eco-Solvent Injet PrinterCutter	https://www
	stack	Teacher Print – …	.azed.gov/cte
	(vertical),	Laser Engraving/Cutting: Cups, other	/es/
	ratio,	3D Printing-	<u>Notes Conti:</u>
	torque	Competitions Prep: Robotics:	PhysComp
	speed	 VEX IQ: VEX IQ Dec. 13, 2024-Whiteriver Elementary (BRES-Not?) 	Embedded
	Maabtuania		smart, IIOT
	Mechtronic	 Vex V5: Alchesay HS: 11/18/24, 11/16-18/24, 1/11/2025 	AI ,Data
	Electrical (FRC Team - 4H/Community – Room/Sponsor 	Collect Data
	Ohm's Law,	Solar Go-kart: "Racing to the Sun" (Tuscon, AZ) 11/19 (Tues)	Analyze Data
	Parallel/Seri		MachinLearn
	al Circuits)	sarsef.org/racing-the-sun/	Collaborate
	Chemical	sarsef.org/racing-the-sun/important-dates/	schools,
	e-chem	Anisse Alverede (anisse @correct and)	Inductor
	Physical	Anissa Alvarado (anissa@sarsef.org)	Industry
	Magnetism	• 2024	Community
	Batteries	 November 1 – Preliminary Project Plans Due 	
	Software		
	Block	 November 15 – Mechanical and Electrical Drafts Due 	
	PLC ladder	 11/19 (Tues) - *RTS Advisors visit FabLab 	
	logic, CNC,		
	Python, C++	11/22-RTS Submittal -Review11/26/2024	
	Sensors	• 2025 Other dates?	
	touch, Dist		
	Light,	 January 31 – School Fees Due 	
	Camera	March 20 Tast Day	
		 March 29 – Test Day 	
L	1	1	

	 April 26 – Race Day 	

_	Notes:	Fab Lab/Engineering	Academic
Nec	Robotic		Standards:
Ine	Assemblies	Objective:	
Wednesday	Mechtronic	The Fab Lab/Engineering instructional program prepares students to	Arizona
~	Engineer:	apply basic engineering principles and technical skills in support of	Department
	ReEngineer	engineers engaged in a wide variety of projects.	of
	Reverse	Lesson Overview:	Education
	Engineering	Students learn to apply Science Technology Engineering Math (STEM)	Website:
	Structural	concepts to current technologies and tools as they learn about the	Program
	Chassis	different disciplines and opportunities within the fields of engineering.	Description/
	frame body Mechanical	and opportanties within the fields of engineering.	Industry
	(Motion)	Plus wint for Instruction and Association	Credentials/
	Gear: Box,	Blueprint for Instruction and Assessment	Coherent
	train,	Engineering Math and Science Principles, Tools, Project Management,	Sequence/
	parallel	Address Needs in Global Society	
	(linear)	VersCAMM SP-300i 30" Eco-Solvent Injet PrinterCutter	https://www
	stack	Teacher Print –	.azed.gov/cte /es/
	(vertical),	Laser Engraving/Cutting: Cups, other 3D Printing-	/ (3/
	ratio,	Competitions Prep: Robotics:	Notes Conti:
	torque		PhysComp
	speed	 VEX IQ: VEX IQ Dec. 13, 2024-Whiteriver Elementary (BRES-Not?) 	Embedded
	Mechtronic	 Vex V5: Alchesay HS: 11/18/24, 11/16-18/24, 1/11/2025 	smart, IIOT
	Electrical (- FPC Team All/Community Deam/Spansor	Al ,Data
	Electrical (Ohm's Law,	 FRC Team - 4H/Community – Room/Sponsor 	Collect Data
	Parallel/Seri	Solar Go-kart: "Racing to the Sun" (Tuscon, AZ) 11/19 (Tues)	Analyze Data
	al Circuits)	sarsef.org/racing-the-sun/	MachinLearn
	Chemical		Collaborate
	e-chem	sarsef.org/racing-the-sun/important-dates/	schools,
	Physical	Anissa Alvarado (anissa@sarsef.org)	Industry
	Magnetism	• 2024	Community
	Batteries		
	Software	 November 1 – Preliminary Project Plans Due 	
	Block	 November 15 – Mechanical and Electrical Drafts Due 	
	PLC ladder		
	logic, CNC,	 11/19 (Tues) - *RTS Advisors visit FabLab 	
	Python, C++	 11/22-RTS Submittal -Review11/26/2024 	
	Sensors		
	touch, Dist	• 2025 Other dates?	
	Light,	 January 31 – School Fees Due 	
	Camera		
		 March 29 – Test Day 	

	 April 26 – Race Day 	

Ξ	Notes:	Fab Lab/Engineering	Academic
Thursday			Standards:
day	Engineer:	Objective: The Fab Lab/Engineering instructional program prepares students to	Arizona
	ReEngineer Reverse	apply basic engineering principles and technical skills in support of	Department
	Engineering	engineers engaged in a wide variety of projects.	of
	Structural	chemicers engaged in a while vallety of projects.	Education
	Chassis	Lesson Overview:	Website:
	frame body Mechanical	Students learn to apply Science Technology Engineering Math (STEM)	
	(Motion)	concepts to current technologies and tools as they learn about the	Program
	Gear: Box,	different disciplines and opportunities within the fields of engineering.	Description/
	train,		Industry Credentials/
	parallel	Blueprint for Instruction and Assessment	Coherent
	(linear)	Engineering Math and Science Principles, Tools, Project Management,	Sequence/
	stack	Address Needs in Global Society	
	(vertical),	VersCAMM SP-300i 30" Eco-Solvent Injet PrinterCutter	https://www
	ratio,	Teacher Print –	<u>.azed.gov/cte</u>
	torque	Laser Engraving/Cutting: Cups, other	<u>/es/</u>
	speed	3D Printing-	https://www
	Mechtronic	Competitions Prep: Robotics:	.azed.gov/cte
	Electrical (VEX IQ: VEX IQ Dec. 13, 2024-Whiteriver Elementary (BRES-Not?) 	/es/
	Ohm's Law,	 Vex V5: Alchesay HS: 11/18/24, 11/16-18/24, 1/11/2025 	Notes Conti:
	Parallel/Seri	 FRC Team - 4H/Community – Room/Sponsor 	PhysComp
	al Circuits)		Embedded
	Chemical	Solar Go-kart: "Racing to the Sun" (Tuscon, AZ) 11/19 (Tues)	smart, IIOT
	e-chem	sarsef.org/racing-the-sun/	Al ,Data
	Physical Magnetism	sarsef.org/racing-the-sun/important-dates/	Collect Data
	Magnetism Batteries	Anissa Alvarado (anissa@sarsef.org)	Analyze Data MachinLearn
	Software		Collaborate
		• 2024	schools,
	Block PLC ladder	 November 1 – Preliminary Project Plans Due 	,
	logic, CNC,	 November 15 – Mechanical and Electrical Drafts Due 	Industry Community
	Python, C++		continuity
	Sensors	 11/19 (Tues) - *RTS Advisors visit FabLab 	
	touch, Dist	• 11/22-RTS Submittal -Review11/26/2024	
	Light,		
	Camera	• 2025 Other dates?	
		 January 31 – School Fees Due 	
		 March 29 – Test Day 	

	• April 26 – Race Day	

Fri	Notes:	Fab Lab/Engineering	Academic
Friday	_ ·		Standards:
	Engineer: ReEngineer	Objective: The Fab Lab/Engineering instructional program prepares students to	Arizona
	Reverse	apply basic engineering principles and technical skills in support of	Department
	Engineering	engineers engaged in a wide variety of projects.	of
	Structural	engineers engaged in a wide variety of projects.	Education
	Chassis	Lesson Overview:	Website:
	frame body	Students learn to apply Science Technology Engineering Math (STEM)	
	Mechanical	concepts to current technologies and tools as they learn about the	Program
	(Motion) Gear: Box,	different disciplines and opportunities within the fields of engineering.	Description/
	train,		Industry
	parallel	Blueprint for Instruction and Assessment	Credentials/
	(linear)	Engineering Math and Science Principles, Tools, Project Management,	Coherent
	(intear) stack	Address Needs in Global Society	Sequence/
	(vertical),	VersCAMM SP-300i 30" Eco-Solvent Injet PrinterCutter	https://www
	ratio,	 Teacher Print – 	.azed.gov/cte
	torque	Laser Engraving/Cutting: Cups, other	/es/
	speed	3D Printing-	
	speed	Competitions Prep: Robotics:	
	Mechtronic		Notes Conti:
	Electrical (VEX IQ: VEX IQ Dec. 13, 2024-Whiteriver Elementary (BRES-Not?) 	PhysComp
	Ohm's Law,	 Vex V5: Alchesay HS: 11/18/24, 11/16-18/24, 1/11/2025 	Embedded
	Parallel/Seri	 FRC Team - 4H/Community – Room/Sponsor 	smart, IIOT
	al Circuits)		AI ,Data Collect Data
	Chemical	Solar Go-kart: "Racing to the Sun" (Tuscon, AZ) 11/19 (Tues)	
	e-chem	sarsef.org/racing-the-sun/	Analyze Data MachinLearn
	Physical	sarsef.org/racing-the-sun/important-dates/	Collaborate
	Magnetism		schools,
	Batteries	Anissa Alvarado (anissa@sarsef.org)	Industry
	Software	• 2024	Community
	Block PLC ladder	 November 1 – Preliminary Project Plans Due 	,
	logic, CNC,	 November 15 – Mechanical and Electrical Drafts Due 	
	Python, C++		
	Sensors	 11/19 (Tues) - *RTS Advisors visit FabLab 	
	touch, Dist	• 11/22-RTS Submittal -Review11/26/2024	
	Light <i>,</i> Camera	• 2025 Other dates?	
		 January 31 – School Fees Due 	
		 March 29 – Test Day 	

• April 26 – Race Day	