Name:	Grading Quarter:	Week Beginning:
Robert Lefrandt	2	12/02/2024
School Year: 2024-25	Subject: Fab Lab/Engi	neering

Z	Notes:	Fab Lab/Engineering	Academic
Monday	Robotic		Standards:
ау	Assemblies Mechtronic	<b>Objective:</b> The Fab Lab/Engineering instructional program prepares students to	Arizona
		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 Sequence/
	train, parallel	Address Needs in Global Society	Sequence
	(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- Competitions Prep: Robotics:	
	torque		
	speed	<ul> <li>VEX IQ: VEX IQ Dec. 13, 2024-Whiteriver Elementary</li> </ul>	
	Mechtronic	<ul> <li>Vex V5: Alchesay HS: 11/18/24, 11/16-18/24, 1/11/2025</li> </ul>	
	Electrical (	<ul> <li>FRC Team - 4H/Community – Room/Sponsor</li> </ul>	
	Ohm's Law, 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	<ul> <li>November 1 – Preliminary Project Plans Due</li> </ul>	
	Block	<ul> <li>November 15 – Mechanical and Electrical Drafts Due</li> </ul>	
	PLC ladder	<ul> <li>11/19 (Tues) - *RTS Advisors visit FabLab</li> </ul>	
	logic, CNC,		
	Python, C++	11/22-RTS Submittal -Review11/26/2024	
	Sensors	• 2025	
	touch, Dist Light,	<ul> <li>January 31 – School Fees Due</li> </ul>	
	Camera		
		<ul> <li>March 29 – Test Day</li> </ul>	

<ul> <li>April 26 – Race Day</li> </ul>	

Ţ	Notes:	Fab Lab/Engineering	Academic
Tuesday	Robotic		Standards:
łay	Assemblies	Objective:	<b>A</b> <i>v</i> i- <b>a</b> <i>v</i> <b>a</b>
	Mechtronic	The Fab Lab/Engineering instructional program prepares students to	Arizona
	Engineer:	apply basic engineering principles and technical skills in support of	Department of
	ReEngineer	engineers engaged in a wide variety of projects.	Education
	Reverse	Lesson Overview:	Website:
	Engineering Structural	Students learn to apply Science Technology Engineering Math (STEM)	
	Chassis	concepts to current technologies and tools as they learn about the	Program
	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	VersCAMM SP-300i 30" Eco-Solvent Injet PrinterCutter	https://www
	(linear)	• Teacher Print –	.azed.gov/cte
	stack	Laser Engraving/Cutting: Cups, other	/es/
	(vertical),	3D Printing-	
	ratio,	Competitions Prep: Robotics:	Notes Conti:
	torque speed	• VEX IQ: VEX IQ Dec. 13, 2024-Whiteriver Elementary	PhysComp
	speed		Embedded smart, IIOT
	Mechtronic	<ul> <li>Vex V5: Alchesay HS: 11/18/24, 11/16-18/24, 1/11/2025</li> </ul>	Al ,Data
	Electrical (	<ul> <li>FRC Team - 4H/Community – Room/Sponsor</li> </ul>	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 Physical	Anissa Alvarado (anissa@sarsef.org)	Industry
	Magnetism	• 2024	Community
	Batteries	- 2024	
	Software	<ul> <li>November 1 – Preliminary Project Plans Due</li> </ul>	
	Block	<ul> <li>November 15 – Mechanical and Electrical Drafts Due</li> </ul>	
	PLC ladder	<ul> <li>11/19 (Tues) - *RTS Advisors visit FabLab</li> </ul>	
	logic, CNC,		
	Python, C++	11/22-RTS Submittal -Review11/26/2024	
	Sensors	• 2025	
	touch, Dist		
	Light,	<ul> <li>January 31 – School Fees Due</li> </ul>	
	Camera	<ul> <li>March 29 – Test Day</li> </ul>	

	<ul> <li>April 26 – Race Day</li> </ul>	

5	Notes:	Fab Lab/Engineering	Academic
Wednesday	Robotic		Standards:
lesd	Assemblies	Objective:	Arizona
ay	Mechtronic	The Fab Lab/Engineering instructional program prepares students to apply basic engineering principles and technical skills in support of	Department
	Engineer:	engineers engaged in a wide variety of projects.	of
	ReEngineer Reverse		Education
	Engineering	Lesson Overview:	Website:
	Structural	Students learn to apply Science Technology Engineering Math (STEM)	
	Chassis	concepts to current technologies and tools as they learn about the	Program
	frame body	different disciplines and opportunities within the fields of engineering.	Description/ Industry
	Mechanical (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)	<ul> <li>VersCAMM SP-300i 30" Eco-Solvent Injet PrinterCutter</li> <li>Teacher Print –</li> </ul>	https://www .azed.gov/cte
	stack	Laser Engraving/Cutting: Cups, other	/es/
	(vertical),	3D Printing-	,,
	ratio,	Competitions Prep: Robotics:	Notes Conti:
	torque		PhysComp
	speed	<ul> <li>VEX IQ: VEX IQ Dec. 13, 2024-Whiteriver Elementary</li> </ul>	Embedded
	Mechtronic	<ul> <li>Vex V5: Alchesay HS: 11/18/24, 11/16-18/24, 1/11/2025</li> </ul>	smart, IIOT AI ,Data
	Electrical (	<ul> <li>FRC Team - 4H/Community – Room/Sponsor</li> </ul>	Collect Data
	Ohm's Law, Parallel/Seri	Solar Go-kart: "Racing to the Sun" (Tuscon, AZ) 11/19 (Tues)	Analyze Data MachinLearn
	al Circuits)	sarsef.org/racing-the-sun/	Collaborate
	Chemical	sarsef.org/racing-the-sun/important-dates/	schools,
	e-chem Physical	Anissa Alvarado (anissa@sarsef.org)	Industry
	Magnetism	• 2024	Community
	Batteries		
	Software	<ul> <li>November 1 – Preliminary Project Plans Due</li> </ul>	
	Block	<ul> <li>November 15 – Mechanical and Electrical Drafts Due</li> </ul>	
	PLC ladder	11/19 (Tues) - *RTS Advisors visit FabLab	
	logic, CNC, Python, C++	<ul> <li>11/22-RTS Submittal -Review11/26/2024</li> </ul>	
	Sensors		
	touch, Dist	• 2025	
	Light,	<ul> <li>January 31 – School Fees Due</li> </ul>	
	Camera	<ul> <li>March 29 – Test Day</li> </ul>	
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	<ul> <li>April 26 – Race Day</li> </ul>	

-	Notes:	Fab Lab/Engineering	Academic
Thursday			Standards:
sday	Engineer:	Objective:	
	ReEngineer	The Fab Lab/Engineering instructional program prepares students to	Arizona
	Reverse	apply basic engineering principles and technical skills in support of	Department
	Engineering Structural	engineers engaged in a wide variety of projects.	of Education
	Chassis	Lesson Overview:	Website:
	frame body	Students learn to apply Science Technology Engineering Math (STEM)	Website.
	Mechanical	concepts to current technologies and tools as they learn about the	Program
	(Motion)	different disciplines and opportunities within the fields of engineering.	Description/
	Gear: Box,		Industry
	train,	Blueprint for Instruction and Assessment	Credentials/
	parallel	Engineering Math and Science Principles, Tools, Project Management,	Coherent
	(linear)	Address Needs in Global Society	Sequence/
	stack	VersCAMM SP-300i 30" Eco-Solvent Injet PrinterCutter	
	(vertical),	Teacher Print –	<u>https://www</u> .azed.gov/cte
	ratio,	Laser Engraving/Cutting: Cups, other	<u>.azeu.gov/cte</u> /es/
	torque	3D Printing-	<u>/ co/</u>
	speed	Competitions Prep: Robotics:	https://www
	Mechtronic		.azed.gov/cte
	Electrical (	<ul> <li>VEX IQ: VEX IQ Dec. 13, 2024-Whiteriver Elementary</li> </ul>	/es/
	Ohm's Law,	<ul> <li>Vex V5: Alchesay HS: 11/18/24, 11/16-18/24, 1/11/2025</li> </ul>	Notes Conti:
	Parallel/Seri	<ul> <li>FRC Team - 4H/Community – Room/Sponsor</li> </ul>	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	sarsef.org/racing-the-sun/important-dates/	Collect Data
	Magnetism	Anissa Alvarada (anissa @sarsaf arg)	Analyze Data MachinLearn
	Batteries	Anissa Alvarado (anissa@sarsef.org)	Collaborate
	Software	• 2024	schools,
	Block	<ul> <li>November 1 – Preliminary Project Plans Due</li> </ul>	, ,
	PLC ladder		Industry
	logic, CNC,	<ul> <li>November 15 – Mechanical and Electrical Drafts Due</li> </ul>	Community
	Python, C++	<ul> <li>11/19 (Tues) - *RTS Advisors visit FabLab</li> </ul>	
	Sensors touch, Dist	11/00 DTC Culture Hall Devision 41/00/0001	
		11/22-RTS Submittal -Review11/26/2024	
	Light, Camera	• 2025	
	Cumera	<ul> <li>January 31 – School Fees Due</li> </ul>	
		Gandary ST - School 1 665 Due	
		<ul> <li>March 29 – Test Day</li> </ul>	
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	• April 26 – Race Day	

Fr	Notes:	Fab Lab/Engineering	Academic
Friday			Standards:
`	Engineer:	Objective:	Arimona
	ReEngineer Reverse	The Fab Lab/Engineering instructional program prepares students to	Arizona
	Engineering	apply basic engineering principles and technical skills in support of	Department 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)	Webbite.
	Mechanical	concepts to current technologies and tools as they learn about the	Program
	(Motion)	different disciplines and opportunities within the fields of engineering.	Description/
	Gear: Box,		Industry
	train,	Blueprint for Instruction and Assessment	Credentials/
	parallel	Engineering Math and Science Principles, Tools, Project Management,	Coherent
	(linear)	Address Needs in Global Society	Sequence/
	stack		
	(vertical),	VersCAMM SP-300i 30" Eco-Solvent Injet PrinterCutter	https://www
	ratio,	• Teacher Print –	.azed.gov/cte /es/
	torque	Laser Engraving/Cutting: Cups, other	7857
	speed	3D Printing-	
	Mechtronic	Competitions Prep: Robotics:	Notes Conti:
		<ul> <li>VEX IQ: VEX IQ Dec. 13, 2024-Whiteriver Elementary</li> </ul>	PhysComp
	Electrical (	<ul> <li>Vex V5: Alchesay HS: 11/18/24, 11/16-18/24, 1/11/2025</li> </ul>	Embedded
	Ohm's Law,	• • • • • • • • • • • • • • • • • • •	smart, IIOT
	Parallel/Seri	<ul> <li>FRC Team - 4H/Community – Room/Sponsor</li> </ul>	Al ,Data
	al Circuits) Chemical	Solar Go-kart: "Racing to the Sun" (Tuscon, AZ) 11/19 (Tues)	Collect Data
	e-chem		Analyze Data
	Physical	sarsef.org/racing-the-sun/	MachinLearn
	Magnetism	sarsef.org/racing-the-sun/important-dates/	Collaborate
	Batteries	Anissa Alvarado (anissa@sarsef.org)	schools,
	Software		Industry
	Soltware	• 2024	Community
	Block	<ul> <li>November 1 – Preliminary Project Plans Due</li> </ul>	,
	PLC ladder	November 1 – Freinfindry Froject Flans Due	
	logic, CNC,	<ul> <li>November 15 – Mechanical and Electrical Drafts Due</li> </ul>	
	Python, C++	• 11/19 (Tues) - *RTS Advisors visit FabLab	
	Sensors		
	touch, Dist	11/22-RTS Submittal -Review11/26/2024	
	Light,	• 2025	
	Camera		
		<ul> <li>January 31 – School Fees Due</li> </ul>	
		<ul> <li>March 29 – Test Day</li> </ul>	
		<ul> <li>March 29 – Test Day</li> </ul>	

	• April 26 – Race Day	
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