Name:	Grading Quarter:	Week Beginning:
Robert Lefrandt	3	01/13/2025
School Year: 2024-25	Subject: Fab Lab/Engineering	

_	Notes	Fab Lab/Engineering	Academic
Monday	<u>Notes:</u> Robotic		Standards:
nda	Assemblies	Objective:	Standards.
<	Mechtronic	The Fab Lab/Engineering instructional program prepares students to	Arizona
		apply basic engineering principles and technical skills in support of	Department
	Engineer:	engineers engaged in a wide variety of projects.	of
	ReEngineer		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,		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, otherEthan Gonzales(Stu. Council)	/es/
	ratio,	3D Printing-	
	torque	Competitions Prep: Robotics:	
	speed	<ul> <li>Vex V5: Alchesay HS: 1/11/2025, 5 Teams? Done</li> </ul>	
	Mechtronic	<ul> <li>Submit Bus Request &amp; upload to Robot Events Permiss Slips</li> </ul>	
	Electrical (	Solar Go-kart: "Racing to the Sun" (Tuscon, AZ) 11/19 (Tues)	
	Ohm's Law, Parallel/Seri	sarsef.org/racing-the-sun/	
	al Circuits)	sarsef.org/racing-the-sun/important-dates/	
	Chemical	Anissa Alvarado (anissa@sarsef.org)	
	e-chem Physical	• 2024	
	Magnetism	<ul> <li>November 1 — Preliminary Project Plans Due</li> </ul>	
	Batteries Software	<ul> <li>November 15 – Mechanical and Electrical Drafts Due</li> </ul>	
	Block	<u>∽</u> — <mark>11/19 (Tues) - *RTS Advisors visit FabLab</mark>	
	PLC ladder		
	logic, CNC,		
	Python, C++	• 2025 Other dates?	
	Sensors	<ul> <li>January 31 – School Fees Due</li> </ul>	
	touch, Dist		
	Light,	<ul> <li>March 29 – Test Day</li> </ul>	
	Camera	<ul> <li>April 26 – Race Day</li> </ul>	

I	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, otherEthan Gonzales(Stu. Council)	/es/
	ratio,	3D Printing-	Notos Conti:
	torque	Competitions Prep: Robotics:	<u>Notes Conti:</u> PhysComp
	speed	<ul> <li>Vex V5: Alchesay HS: 1/11/2025, 5 Teams? Done</li> </ul>	Embedded
			smart, IIOT
	Mechtronic	<ul> <li>Submit Bus Request &amp; upload to Robot Events-Permiss-Slips</li> </ul>	, AI ,Data
	Electrical (		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		56110015,
	C Chem	Anices Alverado (anices @correct.org)	
	Physical	Anissa Alvarado (anissa@sarsef.org)	Industry
	Physical Magnetism	<ul><li>Anissa Alvarado (anissa@sarsef.org)</li><li>2024</li></ul>	
	Physical	• 2024	Industry
	Physical Magnetism		Industry
	Physical Magnetism Batteries	• 2024	Industry
	Physical Magnetism Batteries Software	<ul> <li>2024</li> <li>November 1 – Preliminary Project Plans Due</li> <li>November 15 – Mechanical and Electrical Drafts Due</li> </ul>	Industry
	Physical Magnetism Batteries Software Block	<ul> <li>2024</li> <li>November 1 – Preliminary Project Plans Due</li> </ul>	Industry
	Physical Magnetism Batteries Software Block PLC ladder	<ul> <li>2024</li> <li>November 1 – Preliminary Project Plans Due</li> <li>November 15 – Mechanical and Electrical Drafts Due</li> </ul>	Industry
	Physical Magnetism Batteries Software Block PLC ladder logic, CNC,	<ul> <li>2024</li> <li>November 1 – Preliminary Project Plans Due</li> <li>November 15 – Mechanical and Electrical Drafts Due</li> <li>11/19 (Tues) - *RTS Advisors visit FabLab</li> <li>11/22-RTS Submittal -Review11/26/2024</li> </ul>	Industry
	Physical Magnetism Batteries Software Block PLC ladder logic, CNC, Python, C++	<ul> <li>2024</li> <li>November 1 – Preliminary Project Plans Due</li> <li>November 15 – Mechanical and Electrical Drafts Due</li> <li>11/19 (Tues) - *RTS Advisors visit FabLab</li> <li>11/22-RTS Submittal -Review11/26/2024</li> <li>2025 Other dates?</li> </ul>	Industry
	Physical Magnetism Batteries Software Block PLC ladder logic, CNC, Python, C++ Sensors	<ul> <li>2024</li> <li>November 1 – Preliminary Project Plans Due</li> <li>November 15 – Mechanical and Electrical Drafts Due</li> <li>11/19 (Tues) - *RTS Advisors visit FabLab</li> <li>11/22-RTS Submittal -Review11/26/2024</li> </ul>	Industry
	Physical Magnetism Batteries Software Block PLC ladder logic, CNC, Python, C++ Sensors touch, Dist	<ul> <li>2024</li> <li>November 1 – Preliminary Project Plans Due</li> <li>November 15 – Mechanical and Electrical Drafts Due</li> <li>11/19 (Tues) - *RTS Advisors visit FabLab</li> <li>11/22-RTS Submittal -Review11/26/2024</li> <li>2025 Other dates?</li> </ul>	Industry

	• April 26 – Race Day	

<	Notes:	Fab Lab/Engineering	Academic
Wednesday	Robotic		Standards:
Ine	Assemblies	Objective:	
sda	Mechtronic	The Fab Lab/Engineering instructional program prepares students to	Arizona
<	<b>F</b>	apply basic engineering principles and technical skills in support of	Department
	Engineer: ReEngineer	engineers engaged in a wide variety of projects.	of
	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/
	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, otherEthan Gonzales(Stu. Council)	/es/
	(vertical),	3D Printing-	
	ratio,	Competitions Prep: Robotics:	Notes Conti:
	torque		PhysComp
	speed	<ul> <li>Vex V5: Alchesay HS: 1/11/2025, 5 Teams? Done</li> </ul>	Embedded
	Mechtronic	<ul> <li>Submit Bus Request &amp; upload to Robot Events-Permiss-Slips</li> </ul>	smart, IIOT
	Electrical (		Al ,Data
	Ohm's Law,		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	• 2024	
	Software	<ul> <li>November 1 — Preliminary Project Plans Due</li> </ul>	
	Soltware		
	Block	<ul> <li>November 15 Mechanical and Electrical Drafts Due</li> </ul>	
	PLC ladder	<u>∽</u> — <mark>11/19 (Tues) - *RTS Advisors visit FabLab</mark>	
	logic, CNC,		
	Python, C++		
	Sensors	• 2025 Other dates?	
	touch, Dist	Innuny 21 School Food Dug	
	Light,	<ul> <li>January 31 – School Fees Due</li> </ul>	
	Camera	<ul> <li>March 29 – Test Day</li> </ul>	

	• April 26 – Race Day	

-	Notes:	Fab Lab/Engineering	Academic
Thursday			Standards:
sday	Engineer:	Objective:	
	ReEngineer	The Fab Lab/Engineering instructional program prepares students to	Arizona
	Reverse Engineering	apply basic engineering principles and technical skills in support of	Department
	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)	
	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, train,		Industry
	parallel	Blueprint for Instruction and Assessment	Credentials/
	(linear)	Engineering Math and Science Principles, Tools, Project Management,	Coherent
	stack	Address Needs in Global Society	Sequence/
	(vertical),	VersCAMM SP-300i 30" Eco-Solvent Injet PrinterCutter	https://www
	ratio,	• Teacher Print –	<u>.azed.gov/cte</u>
	torque	Laser Engraving/Cutting: Cups, otherEthan Gonzales(Stu. Council)	<u>/es/</u>
	speed	3D Printing-	https://www
	Mechtronic	Competitions Prep: Robotics:	.azed.gov/cte
	Electrical (	<ul> <li>Vex V5: Alchesay HS: 1/11/2025, 5 Teams? Done</li> </ul>	/es/
	Ohm's Law,	<ul> <li>Submit Bus Request &amp; upload to Robot Events-Permiss-Slips</li> </ul>	Notes Conti:
	Parallel/Seri		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 Batteries	Anissa Alvarado (anissa@sarsef.org)	Analyze Data MachinLearn
	Software		Collaborate
		• 2024	schools,
	Block PLC ladder	<ul> <li>November 1 — Preliminary Project Plans Due</li> </ul>	Industry
	logic, CNC,	<ul> <li>November 15 Mechanical and Electrical Drafts Due</li> </ul>	Community
	Python, C++	∽ <mark>11/19 (Tues) - *RTS Advisors visit FabLab</mark>	
	Sensors		
	touch, Dist Light,		
	Camera	• 2025 Other dates?	
		<ul> <li>January 31 – School Fees Due</li> </ul>	
		<ul> <li>March 29 – Test Day</li> </ul>	
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<ul> <li>April 26 – Race Day</li> </ul>	

Ţ	Notes:	Fab Lab/Engineering	Academic
Friday			Standards:
۷	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)	
	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, parallel	Blueprint for Instruction and Assessment	Credentials/
	(linear)	Engineering Math and Science Principles, Tools, Project Management,	Coherent
	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, otherEthan Gonzales(Stu. Council)	/es/
	speed	3D Printing-	
	Mechtronic	Competitions Prep: Robotics:	Notes Conti:
		• Vex V5: Alchesay HS: 1/11/2025, 5 Teams?	PhysComp
	Electrical (		Embedded
	Ohm's Law,	<ul> <li>Submit Bus Request &amp; upload to Robot Events-Permiss-Slips</li> </ul>	smart, IIOT
	Parallel/Seri		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	• 2024	Industry
	Block	Nevershand - Destinctions - Destant Disease Days	Community
	PLC ladder	<ul> <li>November 1 — Preliminary Project Plans Due</li> </ul>	
	logic, CNC,	<ul> <li>November 15 Mechanical and Electrical Drafts Due</li> </ul>	
	Python, C++	<u>∽</u>	
	Sensors touch, Dist		
	Light,		
	Camera	• 2025 Other dates?	
		<ul> <li>January 31 – School Fees Due</li> </ul>	
		<ul> <li>March 29 – Test Day</li> </ul>	
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• April 26 – Race Day	