

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

Monday	<p><u>Notes:</u></p> <p>Robotic Assemblies Mechtronic</p> <p>Engineer: ReEngineer Reverse Engineering Structural Chassis frame body Mechanical (Motion) Gear: Box, train, parallel (linear) stack (vertical), ratio, torque speed</p> <p>Mechtronic</p> <p>Electrical ( Ohm's Law, Parallel/Seri al Circuits) Chemical e-chem Physical Magnetism Batteries Software</p> <p>Block PLC ladder logic, CNC, Python, C++ Sensors touch, Dist Light, Camera</p>	<p><b>Fab Lab/Engineering</b></p> <p><b>Objective:</b> The Fab Lab/Engineering instructional program prepares students to apply basic engineering principles and technical skills in support of engineers engaged in a wide variety of projects.</p> <p><b>Lesson Overview:</b> Students learn to apply Science Technology Engineering Math (STEM) concepts to current technologies and tools as they learn about the different disciplines and opportunities within the fields of engineering.</p> <p><b>Blueprint for Instruction and Assessment</b> Engineering Math and Science Principles, Tools, Project Management, Address Needs in Global Society VersCAMM SP-300i 30" Eco-Solvent Injet PrinterCutter</p> <ul style="list-style-type: none"> <li>Teacher Print – ...</li> </ul> <p>Laser Engraving/Cutting: Cups, other....</p> <p>3D Printing-</p> <p>Competitions Prep: Robotics:</p> <ul style="list-style-type: none"> <li>VEX IQ: VEX IQ Dec. 13, 2024-Whiteriver Elementary</li> <li>Vex V5: Alchesay HS: <del>11/18/24, 11/16-18/24,</del> 1/11/2025</li> <li>FRC Team - 4H/Community – Room/Sponsor</li> </ul> <p>Solar Go-kart: "Racing to the Sun" (Tuscon, AZ) 11/19 (Tues)</p> <p>sarsef.org/racing-the-sun/</p> <p>sarsef.org/racing-the-sun/important-dates/</p> <p>Anissa Alvarado (anissa@sarsef.org)</p> <ul style="list-style-type: none"> <li>2024 <ul style="list-style-type: none"> <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> </li> <li>2025 <ul style="list-style-type: none"> <li>January 31 – School Fees Due</li> <li>March 29 – Test Day</li> </ul> </li> </ul>	<p>Academic Standards:</p> <p>Arizona Department of Education Website:</p> <p>Program Description/ Industry Credentials/ Coherent Sequence/</p> <p><a href="https://www.azed.gov/cte/es/">https://www.azed.gov/cte/es/</a></p>
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		◦ April 26 – Race Day	
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Tuesday	<p><u>Notes:</u>          Robotic Assemblies          Mechtronic Engineer:          ReEngineer Reverse Engineering          Structural Chassis frame body          Mechanical (Motion)          Gear: Box, train, parallel (linear) stack (vertical), ratio, torque speed          Mechtronic Electrical ( Ohm's Law, Parallel/Seri al Circuits)          Chemical e-chem Physical Magnetism Batteries Software          Block PLC ladder logic, CNC, Python, C++ Sensors touch, Dist Light, Camera</p>	<p><b>Fab Lab/Engineering</b></p> <p><b>Objective:</b>          The Fab Lab/Engineering instructional program prepares students to apply basic engineering principles and technical skills in support of engineers engaged in a wide variety of projects.</p> <p><b>Lesson Overview:</b>          Students learn to apply Science Technology Engineering Math (STEM) concepts to current technologies and tools as they learn about the different disciplines and opportunities within the fields of engineering.</p> <p><b>Blueprint for Instruction and Assessment</b>          Engineering Math and Science Principles, Tools, Project Management, Address Needs in Global Society          VersCAMM SP-300i 30" Eco-Solvent Injet PrinterCutter</p> <ul style="list-style-type: none"> <li>Teacher Print – ...</li> </ul> <p>Laser Engraving/Cutting: Cups, other....          3D Printing-          Competitions Prep: Robotics:</p> <ul style="list-style-type: none"> <li>VEX IQ: VEX IQ Dec. 13, 2024-Whiteriver Elementary</li> <li>Vex V5: Alchesay HS: 11/18/24, 11/16-18/24, 1/11/2025</li> <li>FRC Team - 4H/Community – Room/Sponsor</li> </ul> <p>Solar Go-kart: "Racing to the Sun" (Tuscon, AZ) 11/19 (Tues)  <a href="http://sarsef.org/racing-the-sun/">sarsef.org/racing-the-sun/</a>  <a href="http://sarsef.org/racing-the-sun/important-dates/">sarsef.org/racing-the-sun/important-dates/</a>          Anissa Alvarado (anissa@sarsef.org)</p> <ul style="list-style-type: none"> <li>2024             <ul style="list-style-type: none"> <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> </li> <li>2025             <ul style="list-style-type: none"> <li>January 31 – School Fees Due</li> <li>March 29 – Test Day</li> </ul> </li> </ul>	<p>Academic Standards:</p> <p>Arizona Department of Education Website:</p> <p>Program Description/ Industry Credentials/ Coherent Sequence/</p> <p><a href="https://www.azed.gov/cte/es/">https://www.azed.gov/cte/es/</a></p> <p><u>Notes Conti:</u>          PhysComp Embedded smart, IIOT AI ,Data Collect Data Analyze Data MachinLearn Collaborate schools, Industry Community</p>
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Wednesday	<p><u>Notes:</u></p> <p>Robotic Assemblies Mechtronic</p> <p>Engineer: ReEngineer Reverse Engineering Structural Chassis frame body Mechanical (Motion) Gear: Box, train, parallel (linear) stack (vertical), ratio, torque speed</p> <p>Mechtronic</p> <p>Electrical ( Ohm's Law, Parallel/Seri al Circuits) Chemical e-chem Physical Magnetism Batteries Software</p> <p>Block PLC ladder logic, CNC, Python, C++ Sensors touch, Dist Light, Camera</p>	<p><b>Fab Lab/Engineering</b></p> <p><b>Objective:</b> The Fab Lab/Engineering instructional program prepares students to apply basic engineering principles and technical skills in support of engineers engaged in a wide variety of projects.</p> <p><b>Lesson Overview:</b> Students learn to apply Science Technology Engineering Math (STEM) concepts to current technologies and tools as they learn about the different disciplines and opportunities within the fields of engineering.</p> <p><b>Blueprint for Instruction and Assessment</b> Engineering Math and Science Principles, Tools, Project Management, Address Needs in Global Society VersCAMM SP-300i 30" Eco-Solvent Injet PrinterCutter</p> <ul style="list-style-type: none"> <li>Teacher Print – ...</li> </ul> <p>Laser Engraving/Cutting: Cups, other.... 3D Printing-</p> <p>Competitions Prep: Robotics:</p> <ul style="list-style-type: none"> <li>VEX IQ: VEX IQ Dec. 13, 2024-Whiteriver Elementary</li> <li>Vex V5: Alchesay HS: 11/18/24, 11/16-18/24, 1/11/2025</li> <li>FRC Team - 4H/Community – Room/Sponsor</li> </ul> <p>Solar Go-kart: "Racing to the Sun" (Tuscon, AZ) 11/19 (Tues) sarsef.org/racing-the-sun/ sarsef.org/racing-the-sun/important-dates/ Anissa Alvarado (anissa@sarsef.org)</p> <ul style="list-style-type: none"> <li>2024 <ul style="list-style-type: none"> <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> </li> <li>2025 <ul style="list-style-type: none"> <li>January 31 – School Fees Due</li> <li>March 29 – Test Day</li> </ul> </li> </ul>	<p>Academic Standards:</p> <p>Arizona Department of Education Website:</p> <p>Program Description/ Industry Credentials/ Coherent Sequence/</p> <p><a href="https://www.azed.gov/cte/es/">https://www.azed.gov/cte/es/</a></p> <p><u>Notes Conti:</u> PhysComp Embedded smart, IIOT AI ,Data Collect Data Analyze Data MachinLearn Collaborate schools, Industry Community</p>
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