Name: Robert Lefrandt	Grading Quarter: 1	Week Beginning: 10/14/2024
School Year: 2024-25	Subject: Fab Lab/Engineering	

Monday	Notes: 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/Serial Circuits) Chemical e-chem Physical Magnetism Batteries Software Block PLC ladder logic, CNC, Python, C++ Sensors touch, Dist Light, Camera	Teacher Professional Development **Fab Lab/Engineering** **Objective:** 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. **Lesson Overview:** 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. **Blueprint for Instruction and Assessment** Engineering Math and Science Principles, Tools, Project Management, Address Needs in Global Society	Academic Standards: Arizona Department of Education Website: Program Description/ Industry Credentials/ Coherent Sequence/ https://www.azed.gov/cte/es/

Tuesday	Notes: 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/Serial Circuits) Chemical e-chem Physical Magnetism Batteries Software Block PLC ladder logic, CNC, Python, C++ Sensors touch, Dist Light, Camera	**Fab Lab/Engineering** **Objective:** 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. **Lesson Overview:** 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. **Blueprint for Instruction and Assessment** Engineering Math and Science Principles, Tools, Project Management, Address Needs in Global Society VersCAMM SP-300i 30" Eco-Solvent Injet PrinterCutter • Teacher Print – Adam Reeck Competitions Prep: Robotics: • VEX V5 Robotics, Scrimmage 10/18/24, WhiteRiver 11/16-18/24 • FRC Team - 4H/Community – Room/Sponsor Solar Go-kart: "Racing to the Sun" (Tuscon, AZ) sarsef.org/racing-the-sun/ sarsef.org/racing-the-sun/important-dates/ Anissa Alvarado (anissa@sarsef.org) • Important Dates • 2024 ◦ **November 1** – Preliminary Project Plans Due ◦ **November 15** – Mechanical and Electrical Drafts Due • 2025 ◦ **January 31** – School Fees Due ◦ March 29 – Test Day ◦ April 26 – Race Day	Academic Standards: Arizona Department of Education Website: Program Description/ Industry Credentials/ Coherent Sequence/ https://www.azed.gov/cte/es/ Notes Conti: PhysComp Embedded smart, IIOT AI ,Data Collect Data Analyze Data MachinLearn Collaborate schools, Industry Community

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Thursday	Notes: 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/Serial Circuits) Chemical e-chem Physical Magnetism Batteries Software Block PLC ladder logic, CNC, Python, C++ Sensors touch, Dist Light, Camera	**Fab Lab/Engineering** **Objective:** 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. **Lesson Overview:** 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. **Blueprint for Instruction and Assessment** Engineering Math and Science Principles, Tools, Project Management, Address Needs in Global Society VersCAMM SP-300i 30" Eco-Solvent Injet PrinterCutter • Teacher Print – Adam Reeck Competitions Prep: Robotics: • VEX V5 Robotics, Scrimmage 10/18/24, WhiteRiver 11/16-18/24 • FRC Team - 4H/Community – Room/Sponsor Solar Go-kart: "Racing to the Sun" (Tuscon, AZ) sarsef.org/racing-the-sun/ sarsef.org/racing-the-sun/important-dates/ Anissa Alvarado (anissa@sarsef.org) • Important Dates • 2024 ◦ **November 1** – Preliminary Project Plans Due ◦ **November 15** – Mechanical and Electrical Drafts Due • 2025 ◦ **January 31** – School Fees Due ◦ March 29 – Test Day ◦ April 26 – Race Day	Academic Standards: Arizona Department of Education Website: Program Description/ Industry Credentials/ Coherent Sequence/ https://www.azed.gov/cte/es/ https://www.azed.gov/cte/es/ Notes Conti: PhysComp Embedded smart, IIOT AI ,Data Collect Data Analyze Data MachinLearn Collaborate schools, Industry Community

Friday	Notes: 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/Serial Circuits) Chemical e-chem Physical Magnetism Batteries Software Block PLC ladder logic, CNC, Python, C++ Sensors touch, Dist Light, Camera	**Fab Lab/Engineering** **Objective:** 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. **Lesson Overview:** 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. **Blueprint for Instruction and Assessment** Engineering Math and Science Principles, Tools, Project Management, Address Needs in Global Society VersCAMM SP-300i 30" Eco-Solvent Injet PrinterCutter • Teacher Print – Adam Reeck Competitions Prep: Robotics: • VEX V5 Robotics, Scrimmage 10/18/24, WhiteRiver 11/16-18/24 • FRC Team - 4H/Community – Room/Sponsor Solar Go-kart: "Racing to the Sun" (Tuscon, AZ) sarsef.org/racing-the-sun/ sarsef.org/racing-the-sun/important-dates/ Anissa Alvarado (anissa@sarsef.org) • Important Dates • 2024 ◦ **November 1** – Preliminary Project Plans Due ◦ **November 15** – Mechanical and Electrical Drafts Due • 2025 ◦ **January 31** – School Fees Due ◦ March 29 – Test Day ◦ April 26 – Race Day	Academic Standards: Arizona Department of Education Website: Program Description/ Industry Credentials/ Coherent Sequence/ https://www.azed.gov/cte/es/ <u>Notes Conti:</u> PhysComp Embedded smart, IIOT AI ,Data Collect Data Analyze Data MachinLearn Collaborate schools, Industry Community
