Name: Robert Lefrandt	Grading Quarter: 3	Week Beginning: 01/06/2025
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 | No Class-Prof. Dev. **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 – …
Laser Engraving/Cutting: Cups, other….Ethan Gonzales(Stu. Council)
3D Printing-
Competitions Prep: Robotics:

• Vex V5: Alchesay HS: 1/11/2025, 5 Teams?

• Submit Bus Request & upload to Robot Events-Permiss-Slips

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)

• 2024

◦ ~~**November 1 – Preliminary Project Plans Due**~~

◦ ~~**November 15 – Mechanical and Electrical Drafts Due**~~

◦ ~~**11/19 (Tues) - *RTS Advisors visit FabLab**~~

◦ ~~**11/22-RTS Submittal -Review11/26/2024**~~
• 2025 Other dates?

◦ **January 31** – School Fees Due

◦ March 29 – Test Day | Academic Standards:

Arizona Department of Education Website:

Program Description/ Industry Credentials/ Coherent Sequence/

https://www.azed.gov/cte/es/ |

| | | ◦ April 26 – Race Day | |

| 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 – …
Laser Engraving/Cutting: Cups, other….Ethan Gonzales(Stu. Council)
3D Printing-
Competitions Prep: Robotics:

• Vex V5: Alchesay HS: 1/11/2025, 5 Teams?

• Submit Bus Request & upload to Robot Events-Permiss-Slips

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)

• 2024

◦ ~~November 1 – Preliminary Project Plans Due~~

◦ ~~November 15 – Mechanical and Electrical Drafts Due~~

◦ ~~11/19 (Tues) - *RTS Advisors visit FabLab~~

◦ ~~11/22-RTS Submittal -Review11/26/2024~~

• 2025 Other dates?

◦ **January 31** – School Fees Due

◦ March 29 – Test 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 |

| | | ◦ April 26 – Race Day | |

| Wednesday | 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 – …
Laser Engraving/Cutting: Cups, other….Ethan Gonzales(Stu. Council)
3D Printing-
Competitions Prep: Robotics:

• Vex V5: Alchesay HS: 1/11/2025, 5 Teams?

• Submit Bus Request & upload to Robot Events-Permiss-Slips

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)
• 2024
  ◦ ~~November 1 – Preliminary Project Plans Due~~
  ◦ ~~November 15 – Mechanical and Electrical Drafts Due~~
  ◦ ~~11/19 (Tues) - *RTS Advisors visit FabLab~~
  ◦ ~~11/22-RTS Submittal -Review11/26/2024~~
• 2025 Other dates?
  ◦ **January 31** – School Fees Due
  ◦ March 29 – Test 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 |

| | | ◦ April 26 – Race Day | |

| 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/Seri
al 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 – …
Laser Engraving/Cutting: Cups, other….Ethan Gonzales(Stu. Council)
3D Printing-
Competitions Prep: Robotics:

• Vex V5: Alchesay HS: 1/11/2025, 5 Teams?

• Submit Bus Request & upload to Robot Events-Permiss-Slips

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)

• 2024

  ◦ ~~November 1 – Preliminary Project Plans Due~~

  ◦ ~~November 15 – Mechanical and Electrical Drafts Due~~

  ◦ ~~11/19 (Tues) - *RTS Advisors visit FabLab~~

  ◦ ~~11/22-RTS Submittal -Review11/26/2024~~

• 2025 Other dates?

  ◦ **January 31** – School Fees Due

  ◦ March 29 – Test 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 |

		◦ April 26 – Race Day	

| 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/Seri
al 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 – …
Laser Engraving/Cutting: Cups, other….Ethan Gonzales(Stu. Council)
3D Printing-
Competitions Prep: Robotics:
Vex V5: Alchesay HS: 1/11/2025, 5 Teams?
Submit Bus Request & upload to Robot Events-Permiss-Slips
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)
2024 ~~November 1 – Preliminary Project Plans Due~~ ~~November 15 – Mechanical and Electrical Drafts Due~~ ~~11/19 (Tues) - *RTS Advisors visit FabLab~~ ~~11/22-RTS Submittal -Review11/26/2024~~ 2025 Other dates? **January 31** – School Fees Due March 29 – Test 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 |

| | | ◦　April 26 – Race Day | |