

## SAINTS GLOBAL MEMBER

NAME:

BATTALION:

TROOP:

## SKILL BADGE ADVISOR

NAME:

EMAIL:

PHONE:

**STEP 1 | DISCOVER**

INITIALS

- a) Explain common hazards in robotics work (tools, electricity, heat, moving parts) and how to prevent and respond to them, including proper safety gear. (TLX: 1.1) \_\_\_\_\_
- b) Explain first aid and prevention for robotics-related injuries such as cuts, burns, and eye injuries. (TLX: 1.0) \_\_\_\_\_
- c) Explain the difference between remote-controlled systems, telerobots, and autonomous robots, giving one real example of each. (TLX: 1.2) \_\_\_\_\_

**STEP 2 | PLAN**

INITIALS

- a) Explain three major fields of robotics (sensing, programming, mobility, manipulation, or human–robot interaction) and how they work together in a robot system. (TLX: 1.4) \_\_\_\_\_
- b) Choose a real task for a robot or robotic subsystem to perform and describe what success would look like, including at least one sensor input. (TLX: 1.5) \_\_\_\_\_
- c) Create a simple design plan showing components, degrees of freedom, and how the robot will be controlled. (TLX: 1.5) \_\_\_\_\_

**STEP 3 | ACT**

INITIALS

- a) Build a robot or robotic subsystem of your own design with at least two degrees of freedom that performs the chosen task. (TLX: 2.0) \_\_\_\_\_

- b) Program the robot using code or a flow-based system so that it responds to sensor input to complete the task. (TLX: 2.0) \_\_\_\_\_
- c) Test the robot multiple times, identify at least one failure or limitation, and make a physical or programming improvement. (TLX: 1.9) \_\_\_\_\_
- d) Demonstrate the robot performing its task reliably and explain how the design, sensors, and program work together. (TLX: 1.8) \_\_\_\_\_

## STEP 4 | REFLECT

INITIALS

- a) Explain what part of the robotics process (design, building, programming, or testing) was most challenging and how you overcame it. (TLX: 1.2) \_\_\_\_\_
- b) Describe one ethical consideration or responsibility that comes with designing and using robots. (TLX: 1.2) \_\_\_\_\_

## END OF REQUIREMENTS

**BY SIGNING BELOW, I CERTIFY TO THE BEST OF MY KNOWLEDGE THAT ALL REQUIREMENTS WERE MET AT OR ABOVE THE REQUIRED STANDARDS AS OUTLINED IN THE BADGE REQUIREMENTS CHECKLIST.**

\_\_\_\_\_  
SKILL BADGE ADVISOR

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DATE (YYYY-MM-DD)