# MILESTONE FOUR: DETAIL DESIGN (DESIGN REVIEW AND FEEDBACK)

## PROJECT TWO: MILESTONE 4 – COVER PAGE

Team ID: Mon-16

Please list full names and MacID's of all *present* Team Members

| Full Name: | MacID: |
|---|---|
| Mohammad Bilal | bilalm14 |
| Muhammad Saad Siddiqi | siddim98 |
| Ibrahim Arif Qadeer | qadeeri |
| ZIDi Yao | yaoz25 |
| Owen Brazel | brazelo |

## MILESTONE 4 CHECKLISTS

Mentors and sub-teams will go through each checklist **together** and check off items if the design meets expectations. Mentors will give verbal feedback for each item on the checklists, and students will **summarize the feedback** before creating a list of **Action Items** to be completed before final project submission. *Note that these checklists are not project rubrics. They are a tool to help guide students to successfully meet certain project requirements.*

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# MODELLING SUB-TEAM

☒ Design Meets Design Objectives

- → Container fits inside the assigned footprint
- → Surgical tools fit securely inside the container
- → Container facilitates sterilization
- → Design is creative with interesting features and/or connections

☒ Assembly model is complete and aesthetic, properly grounded and has no interference or errors

☒ Mass constraint is satisfied (does not exceed 350 g prior to scaling or 43.75 g after scaling to 50%)

- → The design should intentionally minimize materials

☒ Total print time of **ALL** components does not exceed 2 hours

- → All components on the bed when evaluating this
- → Discuss if components need any support for 3D printing (i.e., for any overhanging features). If so, TA's will assist the sub-team in adding support.

☒ ALL features of container are 2mm or more

- → Not only features need to be 2mm or greater, but spaces between them as well
- → Features between 2mm and 4mm are appropriately sized and will not compromise the printed design

☒ **APPROVED FOR PRINTING**

**Mentor Comments:** Use the space below to document mentor feedback for your design, including requirement for reviewing progress next design studio.

The mentor approved our container's design since it met all the requirements needed. The only concern shown was about the 3D print time of the model after our team decided to apply an upper lid/cap in milestone 3.

**Action Items:** Use the space below to propose design refinements based on feedback.

The proposed design refinements based on our mentor's feedback was either making 4 separate smaller lids instead of 2 larger lids since they require more material and consequently more print time.

# COMPUTATION SUB-TEAM

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☒ One cycle of pick-up/transfer/drop-off (one container of any size) sufficiently executes

- → The general flow should be home → pick-up → home → drop-off → home
- → Containers dropped in random order, program identifies the correct drop off location and places the container successfully
- → *If* there is time, demo both a small and a large container, and experiment using the potentiometers incorrectly to test for malfunctions

☒ All required program tasks are written as their own function (Pick-Up Container, Rotate Q-arm Base , Drop-Off Container & Return Home, Continue or Terminate Program)

☒ All program tasks are accounted for (Pick-Up Container, Rotate Q-arm Base , Drop-Off Container & Return Home, Continue or Terminate Program)

☒ Each task requiring potentiometer input (Rotate Q-arm Base , Drop-Off Container & Return Home) evaluates the potentiometer values before executing an action

- → Potentiometer values are evaluated *INSIDE* the functions and not outside and passing their values as arguments.

☒ Team is running their program in their assigned environment.

☒ No errors in program

☒ Code well commented

**Mentor Comments:** Use the space below to document mentor feedback for your design, including requirement for reviewing progress next design studio.

Arm does not grip the containers properly every time

Arm does not drop the containers into the drawer perfectly

**Action Items:** Use the space below to propose design refinements based on feedback.

Fix pickup position and drop off location coordinates

Change the gripper values for picking up the different containers