



2013-2014
MESA USA Engineering Design Competition
Prosthetic Arm Challenge

FAQ's

- 1. Can teams pick up more than one item at a time for the object relocation task?**
Response: No, teams must pick up each item individually.
- 2. Do we have to have a separate way of immobilizing our hands and wrists if our design already does that?**
Response: If it is obvious that your hand and wrist is immobilized once the prosthetic is in place than no. If your device simply straps onto the arm but your hand and wrist are otherwise loose than you need to have a way to immobilize that wrist and hand and be able to show that to the judges during specification check and during the one minute preparation and demonstration period for each task..
- 3. Can we use both of our hands to help us put on the prosthetic device in the 1-minute preparation time?**
Response: Yes, that will be allowed.
- 4. What happens if we knock the crate off the table while placing objects in them?**
Response: If the crate is knocked off then the team member will have to use their prosthetic device to pick and place the crate back onto the table and then use the prosthetic to pick the objects up, place them back into the starting task area and re-attempt to place them in the crate with whatever time they have remaining.
- 5. Can you stack the objects on top of each other for the object relocation task?**
Response: Yes that will be allowed.
- 6. Can the objects be placed so part of the object starts off the edge of the table?**
Response: No, all the objects must start completely within the task area.
- 7. If we drop an object in "The Void" can we slide it back to the task area?**
Response: Yes, that will be allowed.
- 8. Can we use magnets to help us with the dexterity task?**
Response: No, magnets will not be allowed to be incorporated into the prosthetic device at all.

9. Would a rotation of the forearm to move the forearm, hand and wrist from pronation to supination be allowed?

Response: Yes, the device can be rotated by the student's own forearm but NOT the wrist. If the member is using their own wrist to rotate the device, this is prohibited since the team member's own wrist, hand and fingers MUST be immobilized.

10. For the dexterity task, where are the 0.5 cm increments measured from on the bolts?

Response: The measurements start from the bottom of the thread portion of the bolt (the opposite end from the head of the bolt).

11. If the prosthesis is on their right hand, can they use their right bicep to activate part of the prosthetic arm?

Response: Yes, the member can use any part of his/her own body to activate the prosthetic arm, except his/her own hand that the device is attached to or the opposite elbow, forearm or hand.

12. Do the items used to immobilize the wrist, hand and fingers need to be included in the Itemized Budget Sheet?

Response: If the items are part of the device, then yes they MUST be listed and included in the \$40 pre-tax price limit for materials. If the items are NOT part of the device, then they do NOT need to be listed and included.

13. What are classified as replacement parts, items identical to what the device already has but need to be exchanged?

Response: Replacement parts MUST be identical to what the device already has and must not include new parts.

14. Do replacement parts need to be weighed?

Response: Replacement parts are NOT weighed.

15. Can one or more of the artificial fingers be immobile and only one open and close in order to grab and release the specific objects?

Response: Only one of the artificial fingers needs to open and close while the other(s) may be immobile.

16. May a part of the prosthetic arm device be slid under an object and then "grabbed" by the closing of one or more artificial fingers and then picked up and released for the desired task?

Response: The intention of the rule is for the artificial fingers to grab and release the object. No other part of the device or parts of the member's own wrist, hand or fingers may be used to grab or release the object.

- 17. What if the students have an insufficient immobility device but then during specification check pretend that their wrist can't move? How will the judges know that the wrist is truly immobilized or if the students are simply not moving their wrist during inspection?**

Response: In addition to the specification check, the team must demonstrate the device during the one minute preparation before the start of EACH task.

- 18. For the Distance Accuracy Task, would it be allowed during the team's one minute preparation time for a team member to place a marker behind the launch line to help prevent any part of the student's body and/or prosthetic arm from crossing the launch line?**

Response: This is a host center decision. If this is allowed, an announcement should be made at the beginning to ALL teams so that there are no perceived unfair advantages.

- 19. Where is the defined prosthetic interface or "socket" located if nylon and Velcro straps are used to attach the device to the member's own forearm?**

Response: The prosthetic interface would be where the nylon/Velcro straps end and the member's own arm begins. The prosthetic interface must be at least 3 inches from the team member's own wrist.

- 20. Once the nut has been secured onto the bolt can the prosthetic device be used to strike the nut to advance it further onto the bolt?**

Response: Yes, this method of securing the nut onto the bolt will be allowed as long as all other specifications are met.