

EML2322L – MAE Design and Manufacturing Laboratory
DR1 Comprehension Quiz (Spring 2021)

Please review the [new DRT](#) and answer the following questions related to DR1:

1. Only one _____ and _____ is submitted for each group; everything else is to be completed individually.
2. Answers to the background research should be submitted with each group's DR1. T / F
3. Students can use electronic aids or SW for their conceptual design drawings. T / F
4. Students can use mechanical aids like rules, compasses, and circle templates. T / F
5. What are the five things each student must submit to illustrate a complete design solution?
 - a. typed _____ which includes a [max robot velocity estimate](#) for their chosen wheel and motor combo
 - b. three _____ views of the entire conceptual design
 - c. one _____ view of the entire conceptual design on provided _____ template
 - d. separate _____ of each mechanism
 - e. explicit _____ showing overall size of all major components and brackets
6. The ortho. views should be sketched on the _____ side of green engineering paper and the iso. views should be sketched on the _____ side of the provided iso. template.
7. DR1 submission is a rough draft of each person's design, and they will have plenty of time later to do more research, substitute real parts, and show more detail in their conceptual design. T / F
8. Design report examples can be found on the course website and can just be copied if students don't have the time to invest into the project trying to research and come up with their own viable ideas. T / F
9. Unclear, messy, small, incomplete, and improperly scaled sketches lacking significant detail will be harshly graded. T / F
10. The hand sketches are easy and should only take the students a few hours to complete. T / F
11. The design submitted must satisfy ALL constraints noted in the project description. T / F
12. Material selection and justification does not need to be completed and discussed at this stage of the project. T / F
13. Budgetary considerations do not need to be made at this stage of the project. T / F

14. All landscape-oriented pages should have the holes punched at the TOP of the page and all sketches should possess unique and sequential figure numbers. T / F
15. Every student must submit a set of front, side, top, and iso. views of their entire design. T / F
16. Each of the required ortho. and iso. views must include substantial detail of the entire design, including the frame, control box, motors, wheels, hubs, mechanisms, and each object being manipulated. T / F
17. Each part must have a clearly illustrated attachment method/bracket. T / F
18. All parts must be drawn to scale and have clear dimensions. T / F
19. All components and materials in each sketch must have clearly labeled leaders. T / F
20. The written description must clearly explain how each part of the design works and reference each sketch by figure number. T / F
21. The written description must justify design choices via background research or physical testing, as opposed to conjecture and imagination. T / F
22. The written description should include a max. robot velocity estimation using our provided motor and wheel speed chart. T / F
23. The written description should be well written if the students want their graders and teammates to give their ideas the consideration they deserve. T / F
24. Groups may submit DR1 in a 2" binder with D-shaped rings, page protectors, and rainbows and unicorns on the cover. T / F
25. Students who receive lower than ____% on DR1 will be at risk of being dropped from their assigned group and issued an E for the course if they don't radically change their behavior and submit a complete and viable design for the group to evaluate by the time the group is working on DR2.
26. If a student submits their work late to the group or does not contribute to preparing DR1, the group should write _____ or _____ next to that person's name on the report cover page.