STUDENT PEER-EVALUATION AND VOTING SHEET

Please completely fill out this sheet and upload via eLC. To obtain the full score, Sections 1 through 5 must be filled out (Section 6 is optional). If you abstain from a vote for an award under Section 3 or 4, please state this.

Sections 7 through 10 are awards based on measurable performance and require a live demonstration. Teams are responsible for providing all materials to perform the necessary measurements.

Your name (for peer-evaluation score points): _____

1. Teams, team members, your team

WHAT TEAM ARE YOU MEMBER OF?

Team number (eLC Group number): _____

Team members:

On the following sheets, you may provide score points for the team presentations and you may vote for awards. Awards that are based on audience vote are the *most artistic design* and the *best feature above and beyond*. All other awards are determined by demonstration and measurement.

2. PEER EVALUATION OF TEAMWORK QUALITY

For all your team members (excluding yourself), please rate their contribution to the semester project on a scale from 1 to 4

1: Unacceptable (virtually no contribution)
2: Below Expectations (Some contribution to the project, but not substantial)
3: Meets Expectations (Substantial contributions to the project)
4: Exceeds Expectations (Did the bulk of the work, primarily responsible for the success)

Team member	Contribution (1 – 4)
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

3. PRESENTATION SCORE:

If you consider the overall presentation, how many points (out of 20) would you award to the team? Please also **indicate with a checkmark** (✔) when the feedback control system worked and was stable as specified. You cannot give a presentation score to your own team.

System worked?		Presentation Score (…/20)
❑	Team 1	_____
❑	Team 2	_____
❑	Team 3	_____
❑	Team 4	_____
❑	Team 5	_____
❑	Team 6	_____
❑	Team 7	_____
❑	Team 8	_____
❑	Team 9	_____
❑	Team 10	_____
❑	Team 11	_____
❑	Team 12	_____
❑	Team 13	_____
❑	Team 14	_____
❑	Team 15	_____
❑	Team 16	_____
❑	Team 17	_____
❑	Team 18	_____
❑	Team 19	_____
❑	Team 20	_____
❑	Team 21	_____
❑	Team 22	_____

STUDENT VOTING SHEET

4. AWARD FOR THE MOST ARTISTIC DESIGN

My vote for the *most artistic design* award is for the following team (check one, it must be different from your own team):

❑ Team 1	❑ Team 6	❑ Team 11
❑ Team 2	❑ Team 7	❑ Team 12
❑ Team 3	❑ Team 8	❑ Team 13
❑ Team 4	❑ Team 9	❑ Team 14
❑ Team 5	❑ Team 10	❑ Team 15
❑ Team 16	❑ Team 17	❑ Team 18
❑ Team 19	❑ Team 20	❑ Team 21
❑ Team 22		

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5. AWARD FOR THE BEST FEATURE ABOVE AND BEYOND

My vote for the best feature above & beyond is for the following team (check one, it must be different from your own team):

❑ Team 1	❑ Team 6	❑ Team 11
❑ Team 2	❑ Team 7	❑ Team 12
❑ Team 3	❑ Team 8	❑ Team 13
❑ Team 4	❑ Team 9	❑ Team 14
❑ Team 5	❑ Team 10	❑ Team 15
❑ Team 16	❑ Team 17	❑ Team 18
❑ Team 19	❑ Team 20	❑ Team 21
❑ Team 22		

Briefly describe the feature:

6. YOUR INPUT IS REQUESTED

6.1. If the goal is to have as many groups succeed with a *functioning semester project*, what could I (as the teacher of this course) have done different and better?

6.2. How useful were the handwritten and scanned “board” notes (nicknamed “scribbles”)?

6.3. What else could I do to improve the course?

AWARDS BASED ON MEASURED PERFORMANCE
(LIVE DEMONSTRATION REQUIRED)

7. Highest lifted or balanced load (weigh object)
Levitator and Upright Robot projects

Load (grams) or
Inertia (kg m^2) (*)

- ❑ Team 1 (L) . . . . . _____
- ❑ Team 2 (L) . . . . . _____
- ❑ Team 3 (L) . . . . . _____
- ❑ Team 4 (R) . . . . . _____
- ❑ Team 5 (L) . . . . . _____
- ❑ Team 6 (L) . . . . . _____
- ❑ Team 7 (L) . . . . . _____
- ❑ Team 8 (R) . . . . . _____
- ❑ Team 9 (L) . . . . . _____
- ❑ Team 10 (L) . . . . . _____
- ❑ Team 11 (L) . . . . . _____
- ❑ Team 12 (L) . . . . . _____
- ❑ Team 13 (L) . . . . . _____
- ❑ Team 14 (L) . . . . . _____
- ❑ Team 15 (R) . . . . . _____
- ❑ Team 16 (L) . . . . . _____
- ❑ Team 17 (R) . . . . . _____
- ❑ Team 18 (L) . . . . . _____
- ❑ Team 19 (L) . . . . . _____
- ❑ Team 20 (L) . . . . . _____
- ❑ Team 21 (L) . . . . . _____
- ❑ Team 22 (L) . . . . . _____

(*) This is a very crude approximation based on a long, thin rod, but sufficient for the purpose of the award

8a. Dynamic Range – Levitators only

Apply a sine or square wave to the setpoint input. Low frequencies down to 0.1 Hz are allowed (quasi steady-state). Measure with a ruler and a laser pointer how much the object moves without losing stability.

Movement (mm)

- ❑ Team 1 (L) . . . . . _____
- ❑ Team 2 (L) . . . . . _____
- ❑ Team 3 (L) . . . . . _____
- ❑ Team 5 (L) . . . . . _____
- ❑ Team 6 (L) . . . . . _____
- ❑ Team 7 (L) . . . . . _____
- ❑ Team 9 (L) . . . . . _____
- ❑ Team 10 (L) . . . . . _____
- ❑ Team 11 (L) . . . . . _____
- ❑ Team 12 (L) . . . . . _____
- ❑ Team 13 (L) . . . . . _____
- ❑ Team 14 (L) . . . . . _____
- ❑ Team 16 (L) . . . . . _____
- ❑ Team 18 (L) . . . . . _____
- ❑ Team 19 (L) . . . . . _____
- ❑ Team 20 (L) . . . . . _____
- ❑ Team 21 (L) . . . . . _____
- ❑ Team 22 (L) . . . . . _____

8b. Best Stability – Upright Robots only

Time until toppled (s)

- ❑ Team 4 (R) . . . . . _____
- ❑ Team 8 (R) . . . . . _____
- ❑ Team 15 (R) . . . . . _____
- ❑ Team 17 (R) . . . . . _____

9a. Lightest lifted load (weigh object) – Levitators only Load (grams)

- ❏ Team 1 (L) . . . . . _____
- ❏ Team 2 (L) . . . . . _____
- ❏ Team 3 (L) . . . . . _____
- ❏ Team 5 (L) . . . . . _____
- ❏ Team 6 (L) . . . . . _____
- ❏ Team 7 (L) . . . . . _____
- ❏ Team 9 (L) . . . . . _____
- ❏ Team 10 (L) . . . . . _____
- ❏ Team 11 (L) . . . . . _____
- ❏ Team 12 (L) . . . . . _____
- ❏ Team 13 (L) . . . . . _____
- ❏ Team 14 (L) . . . . . _____
- ❏ Team 16 (L) . . . . . _____
- ❏ Team 18 (L) . . . . . _____
- ❏ Team 19 (L) . . . . . _____
- ❏ Team 20 (L) . . . . . _____
- ❏ Team 21 (L) . . . . . _____
- ❏ Team 22 (L) . . . . . _____

The **disturbance rejection** is the ratio of the weights of the heaviest and lightest lifted object. Stability required!

9b. Disturbance Rejection – Upright Robots only Starting Angle

- ❏ Team 4 (R) . . . . . _____
- ❏ Team 8 (R) . . . . . _____
- ❏ Team 15 (R) . . . . . _____
- ❏ Team 17 (R) . . . . . _____

10a. Best compatibility (Levitators Only)

(test other team's objects, count number of objects levitated stably) Number of distinctly different objects

- ❑ Team 1 (L) . . . . . _____
- ❑ Team 2 (L) . . . . . _____
- ❑ Team 3 (L) . . . . . _____
- ❑ Team 5 (L) . . . . . _____
- ❑ Team 6 (L) . . . . . _____
- ❑ Team 7 (L) . . . . . _____
- ❑ Team 9 (L) . . . . . _____
- ❑ Team 10 (L) . . . . . _____
- ❑ Team 11 (L) . . . . . _____
- ❑ Team 12 (L) . . . . . _____
- ❑ Team 13 (L) . . . . . _____
- ❑ Team 14 (L) . . . . . _____
- ❑ Team 16 (L) . . . . . _____
- ❑ Team 18 (L) . . . . . _____
- ❑ Team 19 (L) . . . . . _____
- ❑ Team 20 (L) . . . . . _____
- ❑ Team 21 (L) . . . . . _____
- ❑ Team 22 (L) . . . . . _____

10b. Highest Variation in Mass (Upright Robots Only)

(Add mass to top of robot, test if meets stability criterion of 10 s) Maximum mass

- ❑ Team 4 (R) . . . . . _____
- ❑ Team 8 (R) . . . . . _____
- ❑ Team 15 (R) . . . . . _____
- ❑ Team 17 (R) . . . . . _____