

## Project 8 [18 FP “Fluency Points”]:

*Improve Your Work for Either Project 3 or Project 7 by Turning it into a 2-DOF Problem*

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### Description:

In either a). a written technical memo no more than four pages long or b). a video no longer than 120 seconds:

- Redo Project 3 or Project 7, except you're now required to use 2-DOF
- Compare your Project 8 to the original, 1-DOF version; if you did not attempt Project 3 or 7, then compare your Project 8 to what a 1-DOF version would've yielded
- Make concluding remarks that may include a comparison of the experimental and analytical results, sources of error, validity of your assumptions, etc.; note any improvement over the 1-DOF version, and the pros and cons of modeling the problem using 2-DOF instead of 1-DOF
- Reflect on your learning and personal journey of working on this project

### Deliverable:

Present your work in one of the following formats:

- A four-page (max) technical memorandum (tech memo) written solely by you in Google Docs
- A two-minute (max) video produced solely by you, uploaded to YouTube

### Rules and Format:

- All rules from Project 3 or 7 apply here
- This is an individual project
- Violation of *any* of these rules will invalidate your submission altogether – read this document carefully (srsly)!

### Submission:

Submit your Google Doc link (URL) or your YouTube link (URL) on Gradescope only. Submissions by email or other means will be disregarded.

Due Apr 30, 2021 (Fri) 11:59 pm.

Late submissions will be subject to the “half-life” reduction policy according to the syllabus.

Grading Rubric:

	Fluency			Scaling	Max Possible
	2	1	0		
<b>Experimental Setup &amp; Realism</b>	Example accurately depicts the vibration type; detailed information on how the observed data is collected and plotted	Some obvious details missing	Farfetched, or missing most details	3	6
<b>Theoretical Rigor, Comparison &amp; Conclusion</b>	Assumptions are reasonable and not oversimplified; physics and math are accurate and convincing; plots contain relevant data; comparison with experimental data is clearly made; comparison to 1-DOF case is detailed and thoughtful	Some obvious details missing	Incorrect physics, or missing most details	3	6
<b>Professionalism</b>	All graphic aids, audio (if using video option), and writing are clear and concise; report or video a joy to read/watch	Some obvious issues with visuals, audio, and/or writing	Painful to read or watch; or production unrelated to project	2	4
<b>Reflection</b>	Thoughtful and authentic	Insubstantial or vague	Missing	1	2
<b>Total</b>					<b>18</b>

See description of past projects for how to submit Google Docs or YouTube link to Gradescope.