

A series of thin, black, overlapping lines forming various geometric shapes and polygons, primarily located in the upper left and center of the slide.

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**VIDEO ANALYSIS (DATA DRIVEN) ASSIGNMENTS TO
SUPPLEMENT INTRODUCTORY PHYSICS COURSES**

TOPICS TO BE COVERED

1. Why? (w/ background info)
2. How? (w/ examples)
3. Lessons learned

WHY? (W/ BACKGROUND INFO)

I teach large enrollment (1000+ students) introductory physics labs for pre-meds, engineers, and physics majors.

- The overall grasp of analytical reality is low, so lab activities start from low levels (“remember” and “understand”).
- Students need to move up the learning levels.
- The higher levels of learning are most likely unattainable in a 1 credit intro course.


2. HOW? (W/ EXAMPLES)

You need to invest in students learning video analysis
(Capstone, Tracker etc.)

Two examples of the actual assignments

[An example from phys-I \(Newton's laws\)](#)

[An example from phys-II \(fields and capacitors\)](#)



The full problem set (and their
WebAssign QID) can be found

[HERE.](#)

Free for anyone to use as they wish.

LESSONS LEARNED & FUTURE PLANS

1. The problems are challenging for students and are best suited for **group work** and not as individual assignment.
2. Students **do not like video analysis** although it is used in a lot of real-life applications.
3. The overall idea is pretty cool and we continue to add to the bank of problems.
4. Creating such problems where data matches with theory is quite challenging but is a lot of fun for an instructor.