

## PH 102 Dr. LeClair - Extra Credit possibility

Movies often contain not merely bad physics, but *insultingly* bad physics. Bullets which defy the laws of projectile motion, cars which explode on impact, warp speed, and so on.

Some good examples of bad movie physics, and *why* the physics is bad, can be found here:

<http://www.intuitor.com/moviephysics/mpmain.html>

Your assignment: perform an analysis of a movie or movie scene similar to (but NOT the same as) those on the site above. (TV shows are fine too.) Some ‘back of the envelope’ calculations are encouraged (e.g., conservation of energy or momentum) but not required. In particular, apply the principles of motion that you have learned. Here is one good example write-up:

<http://www.intuitor.com/moviephysics/eraser.html>

The write-up should be three pages of text (figures are encouraged, but do not count toward the overall length). You can pick any movie or TV show that you like, but you must demonstrate sound reasoning regarding *why* a particular scene or premise is impossible. For example, objects bouncing back higher than where they started from, which violates conservation of energy, or perpetual motion. Think of this as like MythBusters, but with ‘thought experiments.’

What you need to do:

- 3 page write-up, double spaced at 12 point font size and 1” margins
- several clear intuitive examples of movies not following the laws of physics
- title and date of movie/show (I must be able to find it on imdb.com)
- sources and references if needed
- must be original (I will employ google)
- simple ‘back of the envelope’ calculations are encouraged but not required

When it is due:

At the start of your final exam.

Eligibility:

You are eligible if your overall grade before the final exam is less than 90%.

What this will do for you:

Satisfactory completion of the project will magically replace your lowest non-dropped quiz, homework, or lab grade.