The Cornerstone

Tau Beta Pi The Engineering Honor Society

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A Letter From the Editor

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Important Dates:

All meetings start at 6:30pm in 1013 DOW (unless otherwise noted)

- *Electees/Actives II — Tuesday, March 12*
- *Third Actives (actives only) — Tuesday, March 19*
- *Initiation — Sunday, April 14, 4pm 1109 FXB*
- *Banquet—Sunday, April 14, 6pm Campus Inn*

Spring break is almost here!!!

Wow. This semester is been flying by. There's hardly a moment for breathing! Oh, the life of a Michigan Engineer. I guess that is what I get for being the overachiever that I am.

I can't believe that spring break is only a week away (from next week)...whatever it's already almost here and I couldn't be more excited. The only thing I'm not looking forward to is the massive amounts of projects and exams that professors insist on squeezing into the last week before break. But the thought of relaxing for seven days is more than enough to get me through.

I know I am constantly emailing about needing articles for the Cornerstone, but I would really hate for it to die alone by itself with no articles. That would be terribly sad. So, if you have anything you would like to share with me (and the rest of TBP) in the Cornerstone, email me! You can provide articles/comics/puzzles/etc. If you have any questions send it along, and I can give you feedback.

I am about to write a survey about how people's spring break went (trust me, it will more than likely be more interesting than mine). Let's be real, I might be a little overexcited… Look forward to getting a lovely email from me about filling out my survey for the next cornerstone. ;)

Good luck on applying for all your summer internships! (Because if you haven't already started, you're behind. Put this down and go start!)

Sincerely,

(one of) your Publicity Chairs,

Gina Calco

Sky High

By Arthur Shih

Alright, so I recently took a trip to France with my youngest sister who's a freshman in high school. On the plane she asked me how planes flew, and at that point I had to think a little bit back to my fluid mechanics course. (For those ChemE's in Fluid's now, I hope you guys did well on your exam!)

I started off with Bernoulli's principle, which states that the sum of all forms of mechanical energy (potential, kinetic, and pressure) is the same along a streamline. Bernoulli's principle is based off an energy balance subjected to the following assumptions:

Flow is steady	(d/dt = 0)
Flow is one-dimensional	(valid along a streamline)
Flow is incompressible	(density = constant)
Flow is frictionless	(frictional dissipation of work = 0)
Flow is isothermal	(dissipation of heat =0)

Thus, taking all these assumptions into account, we end up with the super simple equation below!

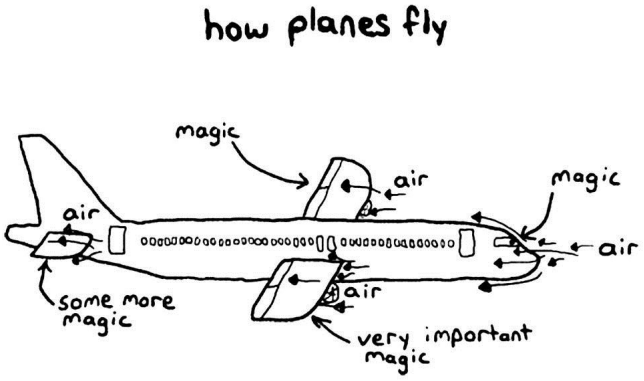
$$\frac{v^2}{2} + gz + \frac{p}{\rho} = \text{constant} \qquad (1)$$

where Z = height
P = pressure
ρ = fluid density (constant, since incompressible)
g = gravitational constant
V = velocity

So after showing her this equation, I told her to notice that **pressure decreases as the velocity of a fluid increases**. When a fluid passes by a plane's wings, air above the wing has to travel further than the air below the wing. This also means that the air above the wing will have to travel faster than the air below the wing at steady state. ***Thus, from Bernoulli's principle, we can deduce that the pressure below the wing is higher than the pressure above the wing.*** This difference in pressure is what creates "lift".

I thought I did a pretty good job explaining it, but she replied, "Okay… that kind of makes sense… but how can air be incompressible? Daddy always talks about compressing air when he pumps our car tires."

Well damn… she got me there. I told her that maybe the effects were negligible, but the plane we were on was going 600 mph… I had to reside to this explanation for the time being:



If anyone has a good explanation to this I would love to hear it! :D (Yes, I'm talking to you aerospace folks out there)

The East Side Beat

By Jesse Tzeng

Used to work the east side beat. Worst part of town. Hate it there. Always smells like rotting kimchee. Spent my patrol wondering where trouble was going down, not when.

One time, came upon a puppy. Perfectly happy little thing, kind of cute. Totally lost, no collar, no nothing. Went to pick it up. Thing didn't flinch. Realized it wasn't moving at all. Nothing to be done for it. Had to walk away, knowing another sad day had gone down.

HQ treats the beat as a joke. No guns, they say. Give us clubs that rattle when we walk. Try to get cops to take competence tests all day, when tests have nothing to do with being a cop. Ask us about letters and colors. Doesn't even make sense. Boss has 30 years on the oldest cop. Thirty years. She doesn't know anything.

Hear things aren't much better on the west side. Some kind of electronics trafficking ring there. Something with space men flying around, and a rabbit or something. All they talk about is candy, though. Candyland, they call it.

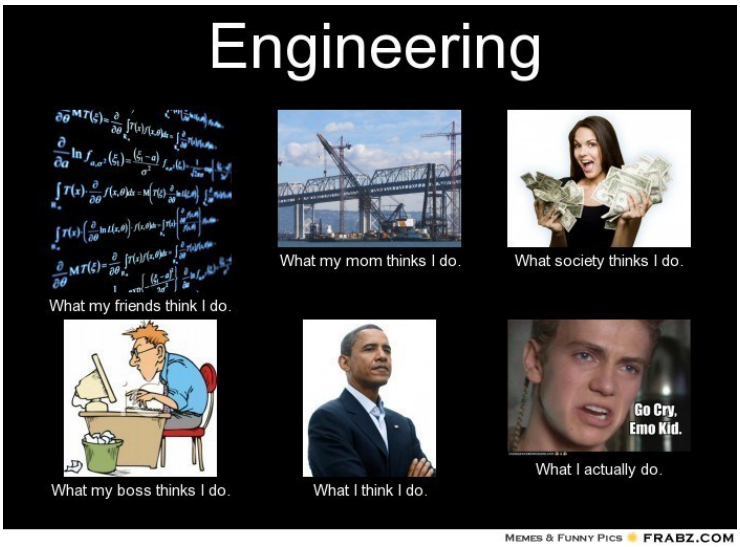
South side is a real toilet bowl.

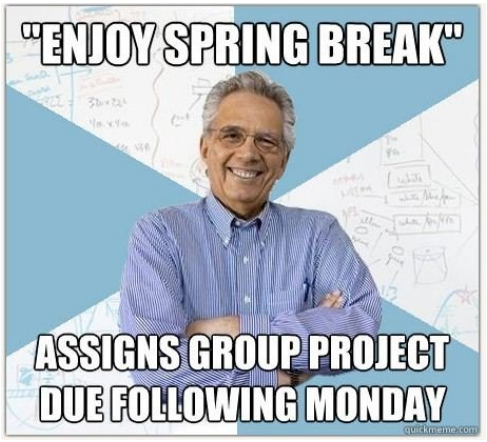
No one goes to the north side. Boss works that one herself. Always dark over there. Heard she keeps candy up there, though.

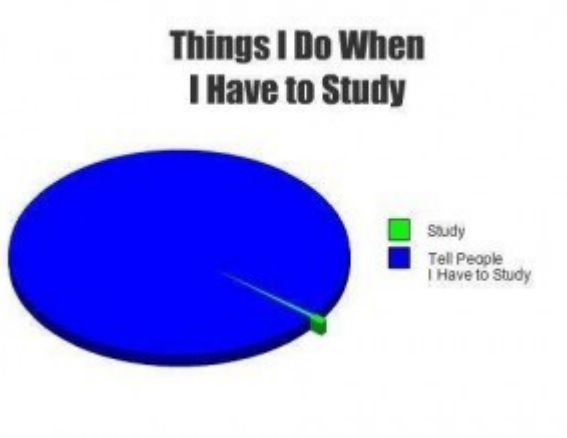
End of the day comes, just glad to go home. Gotta wait for mom to pick me up, though.

Some Comic Relief

Provided by Joshua Kempfer







Provided by google.com/images

Sudoku Puzzles

9						1		
7	2	3				8		
		4		8	9	2		3
2			9			5		
		8		3		6		
	5	1			8		4	2
5			3	9	7			
8	3			4	6			
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5					2			3
6		9	7					5
	3	4	9	1				
1		6	2			9	5	7
		2						1
	5						2	
			3					
8			5	6		7		
9	2	5				1		

Sudoku Puzzles

9	8	5	4	2	3	1	6	7
7	2	3	1	6	5	8	9	4
1	6	4	7	8	9	2	5	3
2	7	6	9	1	4	5	3	8
4	9	8	5	3	2	6	7	1
3	5	1	6	7	8	9	4	2
5	1	2	3	9	7	4	8	6
8	3	9	2	4	6	7	1	5
6	4	7	8	5	1	3	2	9

5	7	1	6	8	2	4	9	3
6	8	9	7	4	3	2	1	5
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1	4	6	2	3	8	9	5	7
3	9	2	4	5	7	8	6	1
7	5	8	1	9	6	3	2	4
4	6	7	3	2	1	5	8	9
8	1	3	5	6	9	7	4	2
9	2	5	8	7	4	1	3	6

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