

ECGR 4161 -

5/31/11

①

Lab 0 →

Lessons learned?

* Interface Confusing

* Switch statement

* TRUE/FALSE

* Parallel branches

* Control → easy or hard

Goal → * LabVIEW-ish environment

* First hand → do something

Labs → LabVIEW

June 7 → Lab 1 → tutorial

June 14 → Lab 2 → motor control

June 23 → Lab 3

July 7 → Lab 4

July 21 → Lab 5

Aug 4 → Lab 6

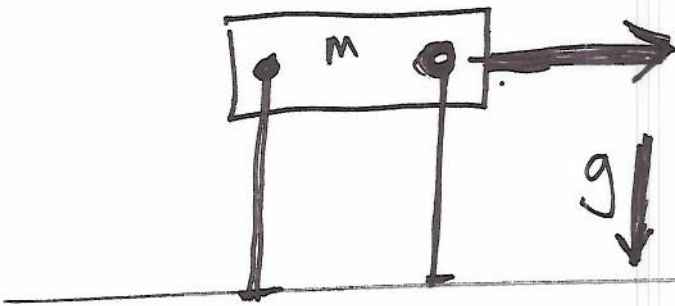
Locomotion

The physics

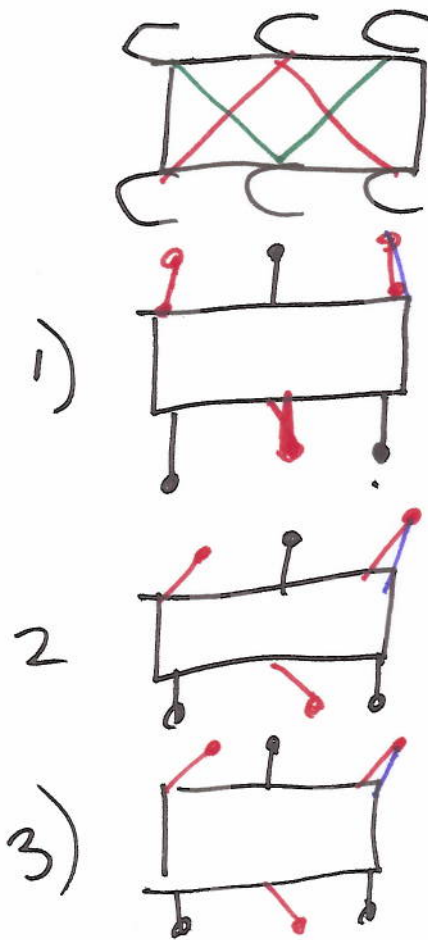
Biological

Book 2.1 - Figure

$$f = ma$$



Always have 3 leg stationary



Step 1: lift 3 legs

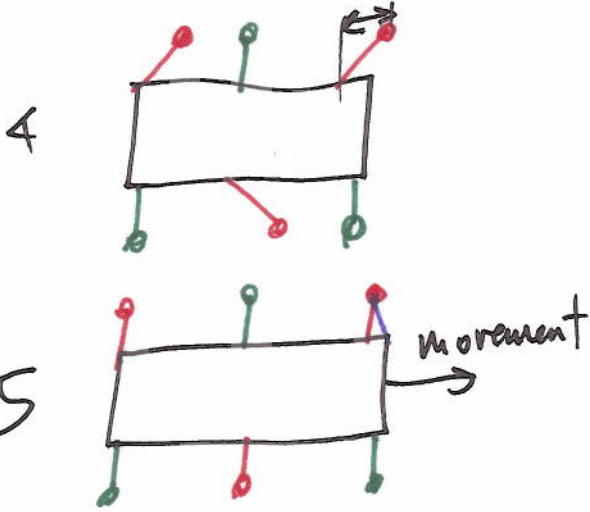
Step 2: pull lifted legs forward

Step 3: lower lifted legs

Step 4: lift 3 "stable legs"

ECGR 4161 - 5/31/11

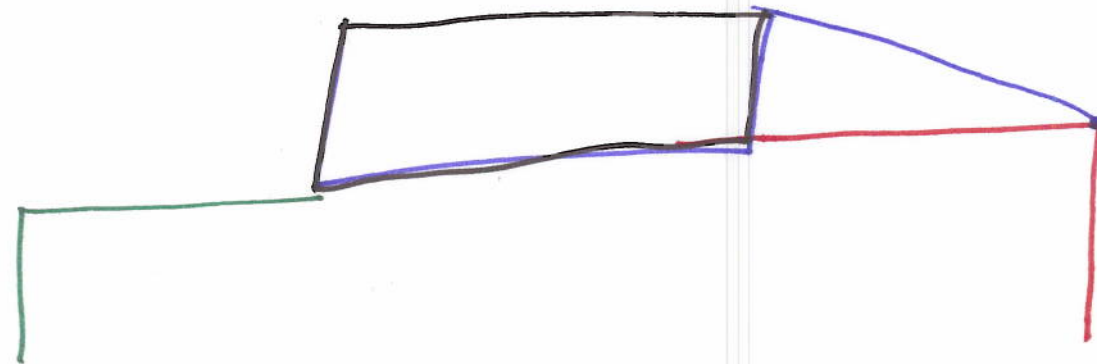
3



Step 5: Relax legs



Step 6 (just like step 2)

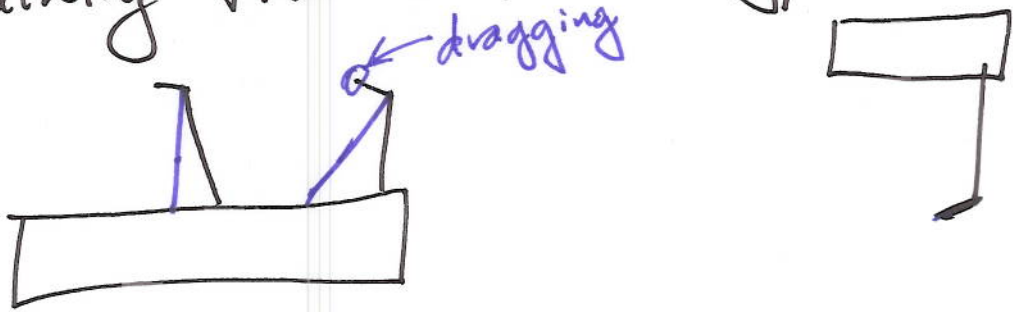


ECGR 4161 - 5/31/11 (4)

- Step 1: lift A up/down
- Step 2: pull forward A forward/back
- Step 3: relax (lower) A up/down
- Step 4: lift B (up/down)
- Step 5: relax A (forward back)
- Step 6: pull forward B forward/back
- Step 7: relax B up/down
- Step 8: relax B forward back

	A	A	B	B	
	FB	VD	FB	VD	
1		X			.5
2	X	X			1
3	X				.5
4	X			X	1
5				X	.5
6			X	X	1
7			X		.5
8			X		0
	3	2	2	3	

Question: Is there a better process for walking that saves energy



ECGR 4161 - 5/31/11

5

The current plan for the class

	24 ¹	26 ²
	31 ³ Lab0	2 ⁴ Hw1
	7 ⁵ Lab1	9 ⁶ Hw2
	14 ⁷ Lab2	16 ⁸
	21 ⁹	23 ¹⁰ Lab3
	28 ¹¹ Test	30 ¹²
	5 ¹³	7 ¹⁴ Lab4
	12 ¹⁵	14 ¹⁶
	19 ¹⁷	21 ¹⁸ Lab5
	26 ¹⁹	28 ²⁰ Test
	X	4 ²¹ Lab6
	9 ²² Final	