

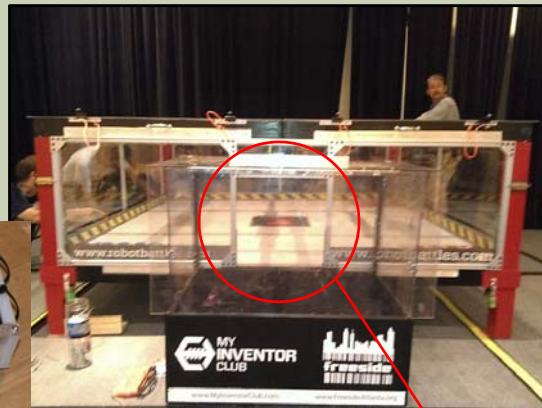
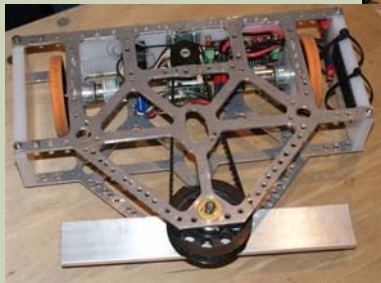
# A COMBAT ROBOTICS COURSE: *PROGRAMMING MEETS COMPUTER-AIDED DESIGN AND FABRICATION*

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## ROBOT BATTLES - BEETLEWEIGHT

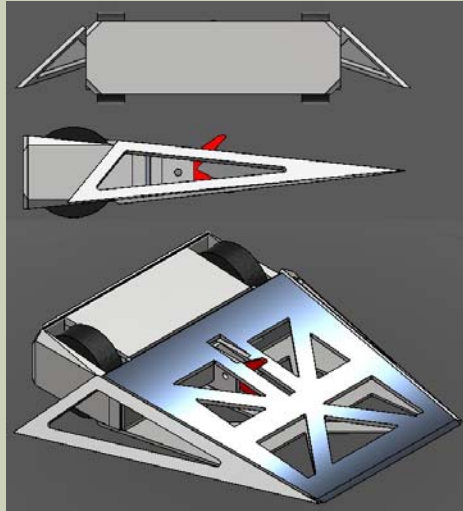
Enclosed arena

3-lb weight limit



Sumo-style

## COMPUTER-AIDED DESIGN



## PART FABRICATION



CNC Milling



Hand & Power Tools

## ASSEMBLY



## ELECTRONICS AND PROGRAMMING



## COURSE ASSIGNMENTS

- Safety Quiz
- Individual CAD project
- Team Project:
  - Bot CAD model
  - Weight estimate (based on CAD model)
  - Construction (including CNC milling)
  - Custom control scheme (Arduino+Xbee)
  - Project Write-up:
    - Milestones
    - Arduino code
    - Bot construction HOW-TO

Weight Estimate			
Part	Quantity	Weight (in lbs. for each)	weight with quantity added
dc motor	2	0.2	0.4
battery	1	0.115	0.115
wheel 1 (small)	1	0.25	0.25
wheel 2 (large)	1	0.03	0.03
arduino uno board	1	0.06	0.06
arduino wireless	1	0.03	0.03
			0
bottom plate	1	0.834	0.834
side wall	2	0.12	0.24
back wall	1	0.115	0.115
top plate	1	0.2099	0.2099
mount	2	0.00525	0.0105
arm motor mount 1		0.0088	0
arm motor mount 2		0.0126	0
arm (UMHW w/ AL lifter)	1		0
hinge	1		0
lifter motor	1	0.0617	0.0617
<b>Total</b>		2.05225	2.3561

## END-OF-SEMESTER BRAWL!!!

