

# Sumo Bot Competition

**5:30 P.M. , March 7, 2017 , Engineering Building room 224**

Team 21

Rene Diyarza - Project Manager

David Feetterer - Budget Liaison

Jose Villegas - Website Developer

Yousef Alghareeb - Client Contact

# Project Description

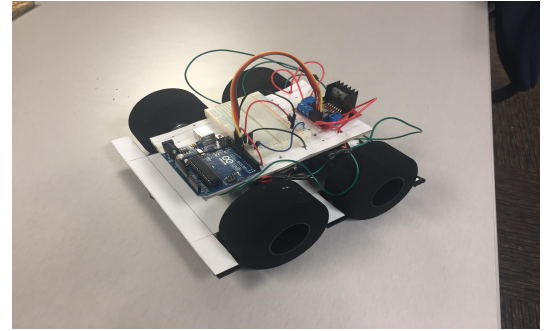
Two robots compete in a head-to-head match following the basic system of traditional human sumo matches.

NAU is our primary sponsor financially and managerially

Showcase our skills obtained from the undergraduate program at NAU

Nanobot was dropped at the end of last semester

Bartending robot side project



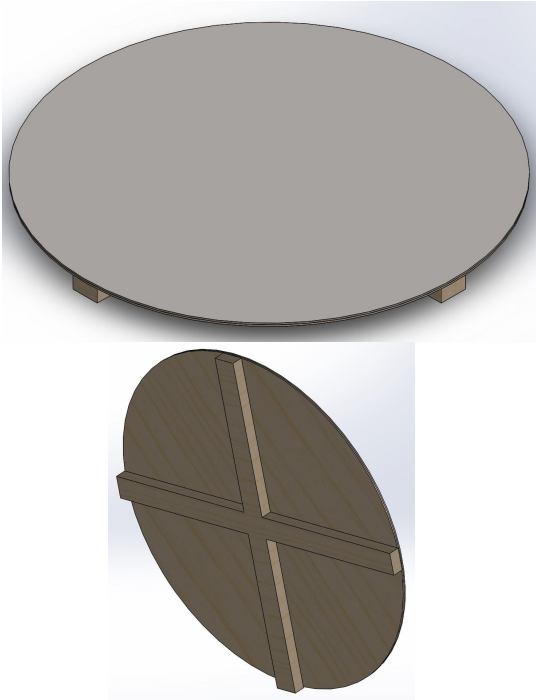
# Updates



Figure 1. Bartending Pump

- Code for dispensing beverage
- Selected approved tubing for distribution of liquid
- Test the capabilities of the pumps
- Extended research on the liquids that will be used
- Adjust measurement to fit parts
- Customized chemically etched PCB

# Updates



- Acquired raw materials for base
- Change in material for top (steel)
- Must be compatible with magnets (downward force)
- Order and pick up top in Phoenix
- Material must be within dimensions
  - 154 cm diameter
  - Manufacturing with Machine Shop and Carpentry

Figure 2. Arena (Top and Bottom)

# Updates

- Compared parts specifications benefiting robot(s)
- Researched materials for shell (Weight vs strength etc.)
- Designing the base for components
- Green dot compound wheels for added traction
- Sabertooth speed control 2x5 replaced the arduino
- One battery can directly power motors and Sabertooth
- 2000mAh battery (1960 mAh in iphone 7)
- Standby mode can last for a long time

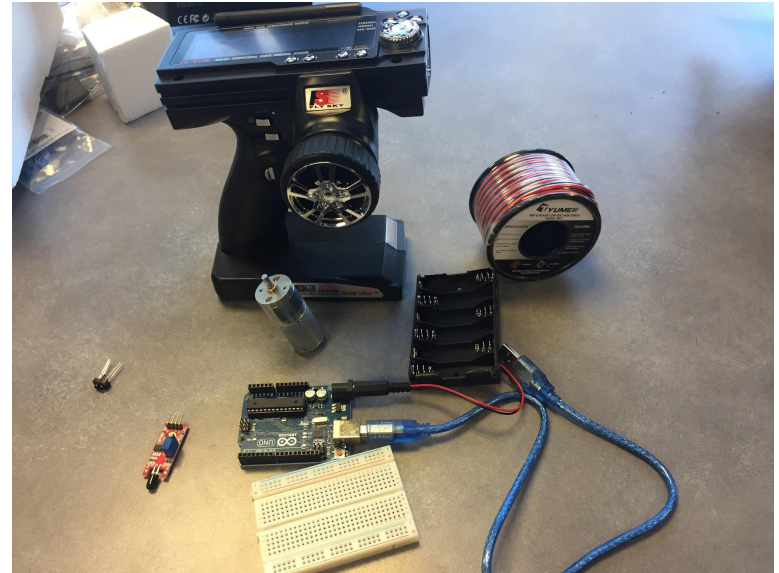


Figure 3. RC parts



# Manufacturing (Skills)

- All team members now have access to the machine shop.
- Coding Arduino
- 3D printed parts
- Use of shop for manufacturing shell/frame
- G-Code for all sides of aluminum frame
- Use of breadboard to test electronics
- Adjust code when robot is built for desired behavior
- Team Effort

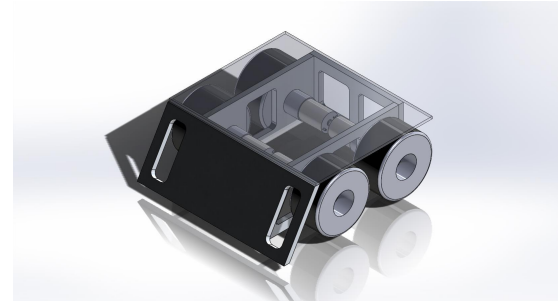


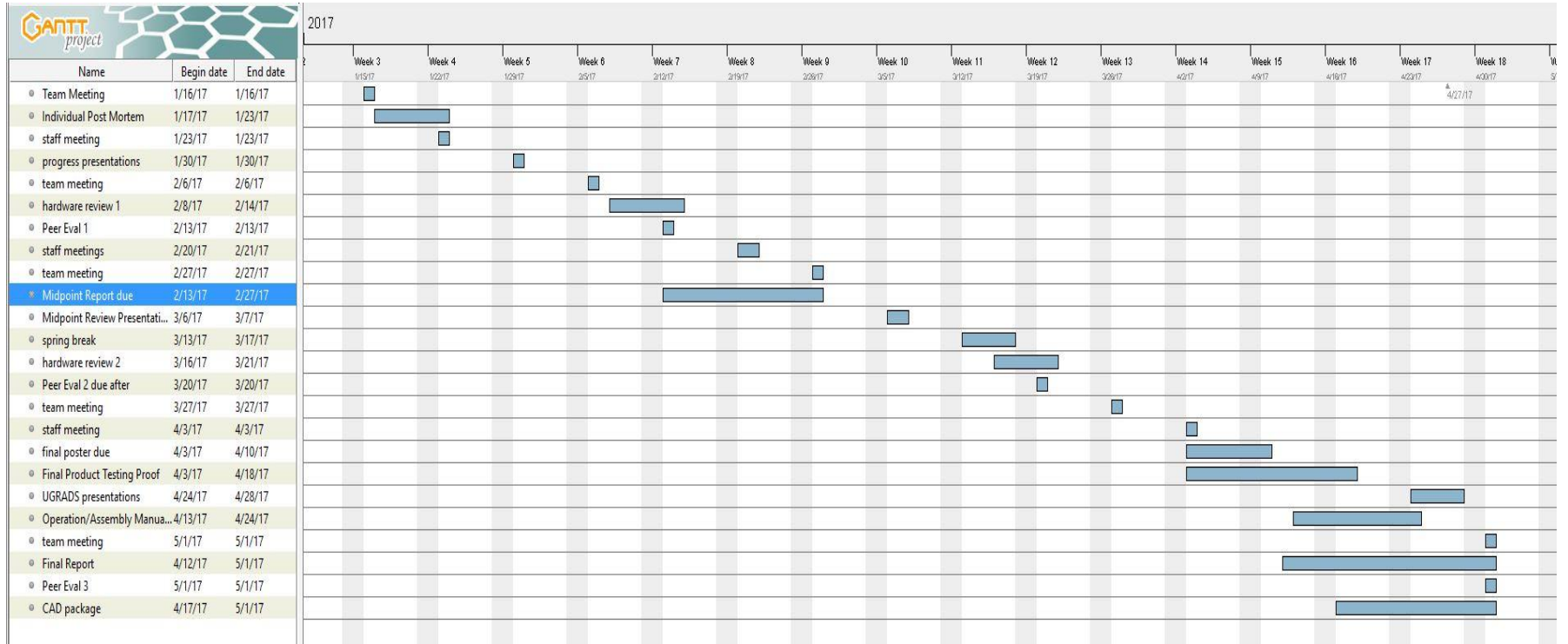
Figure 5. Solidworks Autonomous Frame



Figure 6. RC and autonomous parts DF

# Schedule

Table 1. Gantt chart





# Budget

Table 2. Budget

<b>Total/Robot</b>	
R/C	229
Autonomous	180
Bartending	173
General	30
Anticipated	331
<b>Subtotal (Currently)</b>	<b>612</b>
<b>Subtotal (w/ Anticipated Costs)</b>	<b>943</b>
<b>Remaining Balance (Currently)</b>	<b>888</b>
<b>Remaining Balance (w/ Anticipated Costs)</b>	<b>557</b>

# Questions