

DC2019 Build Log Template

Make a copy of this form and share it with your team and with Nick

Document your work each week: Every time you work on your robot, copy in your code, or add a screenshot of your CAD, or add a picture of your circuit and circuit diagram.

Sample code is posted on the wiki:

http://hades.mech.northwestern.edu/index.php/Northwestern_Design_Competition

Your team name: **Here**

Your team members: **Here**

Table of contents:

[Week of April 1-7](#)

[Week of April 8-14](#)

[Week of April 15-21](#)

[Week of April 22-28](#)

[Week of April 29 - May 5](#)

[Week of May 6-11](#)

Competition is on Saturday May 11

Week of April 1-7

Milestone: Make your team, sketch out your robot

Fill out your team here:

<https://docs.google.com/spreadsheets/d/1wL4jkZFC5ykPM817-85twrntaJ1v8eXz8ZzvYTZZVB4/edit?usp=sharing>

Take a look at the following websites where we commonly buy things:

www.sparkfun.com www.adafruit.com www.pololu.com

Answer the following questions:

- What style of robot will you try to design first?
 - Examples: Differential drive, ackerman (car) style steering, tank style drive, ...
- What type of data do you need to get back from the robot to decide what to do?
 - Examples: Laser reflection data vs angle, motor velocity, global position, rangefinding distance, collision detection buttons, fall-off-the-table detector, ...
- How will you collect and present this data?
 - Examples: Collect specific data by requesting it from the robot, have the robot collect and stream the data x times per second, plot the data with graphs, show the data as text, show the data as a heat map / changing colors, ...
- How autonomous will your robot be?
 - Examples:
 - 100%, robot is completely self sufficient, data will be sent back for evaluation of performance only
 - 0%, motors and actuators will be controlled directly, sensors will be read directly
 - 50%, commands will exist to “turn exactly 90 degrees”, “drive until you hit something”, a human will make high level decisions and the robot will execute the commands

Week of April 8-14

Milestone:

- Run microcontroller and python sample code. Practice communication by requesting data with python, acquire it on the microcontroller, send it back to python, and display.
- Build the example red led and phototransistor circuit to detect retroreflective tape.
- Request parts from Nick: specific sensors and actuators

Week of April 15-21

Milestone: Laser cut and 3d print basic robot chasis. Demonstrate controlling a drive motor.

Week of April 22-28

Milestone: Schedule a design review with Nick and Kristen. Demonstrate working subsystems: how your communication and display works, how your robots moves, how you will detect tokens

Week of April 29 - May 5

Milestone: System assembly. Get all of your subsystems working together.

Week of May 6-11

Milestone: Schedule a design review with Nick and Kristen. Demonstrate your final prototype.

Competition on Saturday May 11