

## Build Workshop

Day 1:

### General Topic Introduction

Building is taking the design and creating the 3d working module. Takes into consideration all aspects of design: materials, weight, power, electronics, pneumatics, drivetrain, and most everything else but programming. Need to know your facts. Tools, materials, visualization skills. Tools and materials I will focus on here. For visualization go home and play descent and other video games.

### Specific Topics:

- Connections
  - Bolts, screws, glue, tracks, chains
  - Advantages/Disadvantages
  - How to
  - Where to find
- Movement (actuation) – parts of bot
  - Motors, springs, pistons, air switch, pulleys, cables
    - Types of most
  - Advantages/Disadvantages
  - How to
  - Where to find
- Movement (drivetrain) – entire bot
  - Drive systems
  - What you need
    - Room for motor, wiring, gear boxes\*
    - Tension, cross support

### General Discussion Questions:

How do you cut a piece

- Wood – hand saw, scroll saw, wood shop
- PVC – hack saw, ban saw (not)
- Metal – wood shop (\*not\*), hack saw, shears, chop saw
- Lexan – hack saw, scoring
- Bolts – hack saw, die grinder

Air tool use

- Oil, pressure, connection, precautions