

Bots IQ Club Responsibilities

- Week #1 - Make Announcements – Hold First Meeting – Assign Resumes for Job Assignments
- Week #2 - Second Meeting - Instructions BOTS IQ – Collect Resumes, Talk About Rules, Policies, Procedures, Documentation, Assign Research for Robot Types (Listing of style of Robot and Advantages and Disadvantages)
- Week #3 - Promotional / Fund Raising Campaigns are started
Weekly Journals are Started, Labeled, Signed, Dated, Present Research on Fridays, Presentations include: Design Motivation, Influences, Types of Bots and Why, Sketches
- Week #4 - Team Management Week, Student Job Applications, Team Rosters, Team Sponsors, Required Forms, Application Process, Rules, Responsibilities, Expectations, Schedules,
- Week #5 - Generate Team Rosters, Start Accounting and Budget Management, Start Covering Machine Safety Procedures, Cover Basic Machining Processes and Skills Needed to Machine Parts
- Week #6 - Thoroughly go over Teamwork Responsibilities (Each team assigns responsibilities)
Team Job Duty sheets are due each Friday
- Week #7 - Start the Design Process, Go Over Research Methods, Generate Resources List (bibliographical format), Start Design Sketches
- Week #8 - Start Covering CAD Models, then Refinement ideas, CAD Models with refinement
- Week #9 - Continue with CAD Modeling, Start Material Selection, Generate Strength sheets for material used, Structural Analysis information for the Frame, Weapon and Sub Assemblies, Also Look at Battery Information sheets
- Week #10 - Continue with CAD Modeling, Generate Manufacturing Plans for Frame, Weapon, Sub Assemblies, Generate Weapon System Details, Drive System Details, Power System Details and a Wiring Schematic
- Week #11 - Create a part list and team/robot name. Generate List of Potential Parts Suppliers
- Week #12 - Material Management Procedures are started, Parts Inventory List is Completed, Supplier List
- Week #13 - Expenses budget, Invoices and Account Summary are started and continued Weekly
- Week #14 - Final Refinements to design process are completed and Parts are ordered
- Week #15 - Generate Weight reduction measures
- Week #16 - Generate an Engineering Drawing Set, Frame, Weapon, Sub assemblies
- Week #17 - Present and Display each Teams Final Designs and Material Testing Results
- Week #18 - Build and Testing Days
- Week #19 - Build and Testing Days
- Week #20 - Build and Testing Days
- Week #21 - Build and Testing Days
- Week #22 - Generate Strategy for Offensive, Defensive and Winning
- Week #23 - Final Build and Testing of Robots
- Week #24 - Make a binder for competitions
- Week #25 - Get ready for Competitions



Parts of a Combat Robot

- Armor/Body:** This protects a robot from damage. It can be aluminum, steel, titanium, polycarbonate, or special alloys and metals. (\$0-\$2000)
- Batteries:** The heart of a robot. These supply the power to all the systems. They are usually 24 or 36 volt NiCad, NiMH, SLA or LiIon cells. (\$40-\$500)
- Transmitter:** This is what you use to remotely operate your robot, they come in many styles, and are also used for R/C planes and cars. (\$60-\$500 - not shown)
- Radio Receiver:** Takes the signal from the transmitter, and turns it into a pulse width modulated (PWM) signal that the speed controller can use. (\$20-\$100)
- Speed Controllers:** A complex electrical device that bridges the receiver, batteries, and motors. It converts the PWM signal from the receiver and feeds the motor the corresponding power from the battery packs. (\$50-\$700)
- DC Motors:** These make the robots and their weapons (e.g. spinners) move. They can be salvaged from junkyards or bought from specialty shops. (\$0-\$1000)
- Gearbox:** These enclosed gears increase the motors torque (force) and make the robot easier to manage and significantly more powerful. (\$20-\$300)
- GearMotors:** Motors and gearboxes that come as a single part. (\$0-\$700)
- Flipping Arm:**
- Pneumatic Ram:**
- Pneumatic Regulator:**
- Batteries**
- DC Motor**
- GearBox**
- Wheels**
- Air Tank**
- Armor**

- Sprockets, Pulleys and Bearings:** Used for both spinning weapons and drive-trains. Bearings hold axles in place to spin weapons or gears. Sprockets are toothed discs with chains like you'd find on a bicycle. (\$0-\$50)
- Chain/Belt:** Chains and belts can be used for both spinning weapons and to connect wheels to gearboxes or other wheels. (\$0-\$100)
- Wheels:** These take the power from the gears to make your robot go and come in hundreds of materials and diameters and can be found anywhere. (\$0-\$100)
- Spinning Bar:** A typical high-energy weapon. These are mounted horizontally as shown or vertically. They can also be discs, or entire shells. (\$0-\$300)
- Flipping Arm:** One of the many kinds of weapons you could have. Flippers get under the robot and throw them into the air. (\$0-\$100)
- Pneumatic Ram:** The output from a pneumatic system. These can be used for a flipper, a hammer, a ram, or other similar weapons. (\$50-\$150)
- Air Tank/Pneumatic Regulator:** Air tanks are used in Pneumatic systems, usually canisters from paint-ball CO2 weapons or fire extinguishers. (\$0-\$200) Regulators ensure the tanks proper pressure. (\$75)

