Equipment

Where are the tools?
In yellow bins at each desk. Additional tools are also in storage up the font of the room.
All tools should be returned to the place you got them from.

What the other colored bins for?
The cyan bin is for cables.
The black bin is for anything else.

Where do I store my robot?
The robots can be stored in the large 54L color coded pins with your group number on it.
If your robot becomes too large to fit in this space place then one of the shelfs next to the yellow project bins could be used.

What work rooms are available?
The Mechatronics Design Lab is for programming, electronics, and assembly only.
The student workshop next to SAE workshop on Kirkwood Avenue, is to be used for manufacturing parts to attach to your robot.
A small workshop is also available within the Mechatronics Design lab.
A PCB production room is available for those who wish to produce a PCB. See Julian for instruction on its use.

What are the blue mats for?
The blue mats are a special $200 antistatic mat, care should be taken with them.
A small green $8 cutting mat beside the blue mat can be used for any cutting surface.

What are the arm bands on the blue mats for?
These are antistatic wrist straps, and should be worn when handling electronic components.
Electrostatic voltages can damage electronic components. The blue mats are also special antistatic mats for use with electronic components.

Can I solder directly to the pins on the micro, ultrasound sensor?
NO, these must be reused each year, soldering destroys there usability.
Sockets are provided, and MUST be used.

Can I remove the robot from the lab?
No. Planning and measurements should be made before going to the student workshop.
Getting metal shavings, metal dust on the robot should be avoided at all costs.

Can I remove or lend tools from the lab?
NO. All equipment must remain in the room.

Can I get welding done?
No.

Can I get the main workshop to manufacture me a part?
No. All assistance for ENMT301 will be given by Julian. Assistance may be obtained from Garry (Student training workshop) when a training lab is not in progress.

Can I file, drill holes, sand, etc. at the desk in the Mechatronics Design Lab?
No, other rooms have been set aside for that work.

Can I get items cut up using a power band saw, circular saw, or guillotine?
Yes, just mark clearly where you want the item cut and Julian will get it done.

How do I get stuff laser cut?
Send Julian an email with a 2D dxf file detailing the pattern. You also need to specify the material you want cut.

What materials can be cut by the laser cutter?
Wood and plastic.

Can I have metal parts cut by the laser cutter?
No. The laser is not powerful enough to cut through any metal products.

How do I get stuff 3D printed?
Send Julian an email with the stl file of your 3D model.

Parts

Where are my parts?
There is a numbered boxes along the east wall.

What other parts are available?
There are parts in labeled bins at the front of the room that have been recycled from junk or previous year's competitions.

Can I use parts from the large yellow bins or smaller fluorescent green bins?
NO. The yellow bins are used as storage for third pro and postgraduate projects. The fluorescent green bins are for another course that is run in this room.

How do I join the Purspex together?
There is a special Acrylic glue in a tube at the front of the room, next to the tools.

How do I purchase parts?
See document Purchasing.pdf in guides section of Learn.

I want a longer bit of metal bar can I swap two shorter bits for a longer bit?
Yes.

Can I swap one type of infrared sensor for another?
No.

What are prices for parts?
See the file PriceingForSpareParts.pdf in section Resources->Datasheets on learn.

Can I swap the supplied micro for another without it coming out of the budget?
No. You are free to use another micro but the cost for it comes off your budget.

Batteries

Where are the batteries?

I filing cabinet labeled batteries, up the front of the lab.
DO NOT leave the battery attached to your robot or in any other storage box. The batteries are a fire hazard and need to be stored in an enclosed metal box.

What are the extra terminals on the battery for?

These are used to balance the cells of the battery. The battery is a 11V battery made up of three smaller 3.7V cells. DO NOT plug these extra battery terminals into your robot or any other device.

How long will the battery last?

The battery is designed to last 20 minutes, considering the competition is only 8 minutes this battery has sufficient power for the job. The battery will last over half an hour but not the three hours of the class.

How do I charge the battery?

The battery charging station is at the front of the room, follow instructions on wall.
Make sure the charging voltage and current are correct, other batteries are often charged in the lab and the chargers could be setup for a different battery.
The correct settings are…
Current 4A
Voltage 11V

What happens if I drop the battery?

Dropping the battery should be avoided.
A damaged battery can explode or catch fire.

Can I leave the battery charging overnight on the charger?

NO, someone needs to be present in the room.
If you are the last person to leave the room make sure the power to the chargers is switched off at the wall, and all batteries are in the metal filling cabnet.

Will the batteries get charged if I just leave them?

Each morning the lab technician will charge all batteries regardless of their state.

IT

Can I request xxx is installed on my machine.
All software requests will be considered.

Where do I find the RoboCup videos?
\\mechnas4\public\coursematerial\enmt301\videos

How do I print?
You need to add the printer.
Start->Devices and Printers->Add a printer->Add Network printer->The printer was not listed ->Select a shared printer by name
Type the following
\\ucprint1\ENME-WarehouseMechatronicsLab-A4

General

How do I start my robot?
Press and hold the GREEN button on the power module of the robot for 5 seconds.

My truck resets, what's wrong?
The battery could be flat.
You could be moving too many servos at once, try staggering servo movements.
A lose wire is shorting out on the metal frame.

My truck keeps resetting when I move servos
Stagger the movement of servos.
Place big storage capacitor on servo power and ground lines.

What happen when I try to lift too much weight with the servo?
You stuff the servo, by stripping the internal gears.

How do I prevent putting too much load on the servo?
Use 2 servos in parallel.
Use supplied small DC motor to lift weight.
Lighten weight you are trying to lift
Use gears.