Everyone must go through safety orientations to work in Solid Space. It is a 2 part process, one part is online and another, in-person. You should also read all the guides (for the laser and the 3D printer) available online & via the production technologist (that's me). http://www.sfu.ca/siat/about/space.html
Just because a note on a file format, a booking link, or material limitation is not mentioned here, doesn't mean it doesn't apply.

Guidelines? Why?

The guidelines are there to ensure everyone is aware of safety procedures and to help coordinate Lab use. (The last few pages in this, also list common materials suppliers)
There is limited room in the shop & lab, and the machines have important limits. The PCs in Solid Space exist only to run machines, thus students need to prep work, files elsewhere, and coordinate with staff via email to make sure things work. All staff are part-time and/or on-call, so you have to be prepared. So, this is to help you learn more about that.

Basic safety rules in the Lab are detailed in the EHS Shop Safety Canvas module (online), which is required for access.

Bookings for undergrads:

- e-mail: spacetime@sfu.ca , IN ADVANCE, 1-2 working days (ie don't mail on a Sunday for times on a Monday). The earlier you ask, the more likely it is that you will get your time, especially for laser use.
- State what you are doing (laser or powertool) and how many team members/who will be there.
- laser bookings require that the Coreldraw file (.cdr) be emailed at time of the request. This is detailed under "laser cutting" in this doc.

People who are late for space bookings (over 10 minutes) or for in-lab orientations (5 minutes) will forfeit their times. If re-booked, it will be with the lowest priority so BE ON TIME!!os :-o

The Quick Solid Space Basics.

For Undergrads

Solid Space Fabrication
and Prototyping Lab.
School Of Interactive Arts
and Technology.
Simon Fraser University,
Surrey.
Rooms 3702/3701, podium 3

Bookings:
spacetime@sfu.ca

Maja & bookings are available:
Monday-Thursday,
9am-4pm,
BY APPOINTMENT.

Extended hours are in effect towards end of each semester. Bookings after 4pm & on Fridays require advance notice.

3D Printing (Fortus):

Submit print requests via e-mail, to 3dprint@sfu.ca
You do not need to show up at the lab for this.

- Files must be in STL format for the 3D printer. See the online 3d print guidelines for process details.
- Note the # copies needed of each part when submitting a request via email.

3d printing guidelines can be found on the SIAT/Solid Space website:
http://www.sfu.ca/siat/about/space.html
It is titled "3D printer guidelines" (right hand side).

Part size limits apply for UG.
ALL PARTS MUST BE ABLE TO FIT IN A 5" X 5" x 5" box. If your part(s) exceeds the recommended size, it will not be printed in time for your deadline. 3D printing takes time.

Cut off dates apply for UG: You may have submit models in advance by as much as 2 weeks, prior to the final deadline. Check class e-mails for details. (Note: Please don't use the printer for printing out items that can easily be made by other methods, like cubes and boxes)

Laser Cutting (x660):

Laser cutter materials must be "ready to go", and laser files MUST be in Coreldraw (.cdr). See guidelines on the following page for materials permitted.
Good laser files:
1) Are scaled properly (INCHES).
2) Laid out in Coreldraw, in the right page/doc size; 32" x 18"
(We cannot reformat, modify or fix files in the Lab)

Coreldraw is on the PCs in the drop-in lab (firemans) on the Mezzanine. Files need to be e-mailed prior to the appointment, in order to be checked.

How do I do all this?
- Demos showing how to export work into Coreldraw can be given, just ask.

- A laser prep guide, showing what to do step by step, can be found on the SIAT/Solid Space website:
  http://www.sfu.ca/siat/about/space.html
  titled "Lasercutter guidelines" (right hand side).
  The guide also notes how to get Solid Works files into Coreldraw if you need to use the 2D profiles from your 3D file for laser cutting.

Please note we no longer do decorative rastering or cutting of parts not needed for project to function. Laser bookings are capped at 2 hours per team/day. Usually you only need about 45min for basic project cuts.

A List of Acceptable Materials for LASER Cutting and Marking.

Note that sheet materials will vary in thickness by +/- 10% or so. Ask about laser kerf if you are fitting parts. You should account for this when you design. Generally, most wood composites (hdf, mdf, etc), acrylic plastics, and INTERIOR grade plywood materials are great to cut at 1/8" thick (3mm). Windsor Plywood is a good source for woods and they have many locations. Windsor in Surrey will often give SFU SIAT students discounts also.

Always have extra material for testing. Leave yourself time to work something else out in case your material or design does not cut as hoped. MAXIMUM SHEET SIZE IS 18" X 32". CUT MATERIALS TO SIZE PRIOR TO LASER BOOKING! HAVE THE VENDOR DO IT, OR BOOK POWER TOOL TIME. LARGE SHEETS

Where to buy stuff.

Note:
Most material suppliers (eg Windsor) will charge you for cutting down woods or plastics. It does not change the fact materials must be pre-sized for the laser cutter.

If you are slotting, fitting parts together, always double check material dimensions (ie thickness) as it usually not what it says it is. For example, 1/4" (.25") thick mdf may not actually be .25" - it is usually a little more, or a little less. Some materials may be sold as metric equivalents- check again. Same with dowels etc- check diameters, length, straightness if critical. Use a digital caliper for this if possible. As of this writing, calipers should be available from the library.

Woods:

Windsor Plywood is the best source for laserable mdf & laser safe suitable plywoods and they have many locations. They also carry wood spheres, dowels, nice solid lumber. : http://windsorplywood.com/location-results.aspx?loc=British+Columbia

Note: Home Depot does NOT often carry permitted types of wood board, nor does Rona,

Michaels Craft Stores: Has some pre-cut hobby plywoods & smooth HB/mdf, but they can be expensive. Pick thin pieces.
http://www.michaels.com/

Daiso: Has hollow dowels (woods) and other eclectic stuff. In Richmond
http://daisocanada.com/

Lee Valley : Coquitlam and Vancouver. http://www.leevalley.com/en/home.aspx
All kinds of hardware and tools. They also have project wood blocks (exotics), basswood, and veneers.

Plastics:

Get acrylic. Most vendors will sell glues for it as well.

Industrial Plastics: Various locations in the greater Vancouver area. http://www.ippnet.com/

Plasticworks: Surrey and Abbotsford. http://www.plasticworks.ca/catalog/index.php (if on a school PC when going to this link, ignore Trendmicro if it pops up). Students get a discount.

Associated Plastics : In Vancouver. http://www.associatedplastics.com/

Misc parts:

Such as airplane servos, small brass tubes, various supplies for modelmaking:

Magicbox Hobbies: http://www.magicboxhobbies.net/
Imperial Hobbies: http://www.imperialhobbies.ca
SN Hobbies: Carry interesting small model parts:
http://www.snhobbies.com/product_info.php?cPath=105&products_id=760&osCsid=e5b8afbe9bce9f6f5746e883d4e253f4

Electronic Parts:

Lees electronics: Awesome store in vancouver (Fraser street) with everything from 3d printers to Adruino: http://www.leeselectronic.com/index.php
Main Electronics: http://www.mainelectronics.com/
RP Electronics: http://www.rpelectronics.com/

Matte Board/Cardstock (and other specialty papers, plus art materials such as clay)

Deserres: Various locations in the greater Vancouver area
Opus: Various locations in the greater Vancouver area
Michaels Craft Stores: Various locations in the greater Vancouver area. http://www.michaels.com/

Glass (NOTE: Solid Space is not set-up for glass work)

Kona Glass (stained glass, note t hey provide lessons and space too)
http://www.konaglasslessons.com/page/page/4216039.htm
Bills Glass (offers some basic services) http://www.billsglass.ca/

Glues:

With all glues, if you are doing precise work: use a jig or some sort of material/clamps to help keep your piece in the right position for bonding (without bonding the jig of course). Even with fast acting glues, you may need both your hands with a syringe to do a nice job, so a jig will help.

Cyanoacrylate (instant or super glues).
Will bond acrylics but cannot take sudden/great force as it's a surface bond on them. Tip: