

PRINT PRODUCTION

Live Area

Most printers can't print to the entire surface of a page, so when you are designing a piece for print that you'll be producing yourself you will need to know the printer's "live area." It varies for every printer, but most are 0.25 inch or less from the edge. You can account for this unprintable area in your design, like the margins on this page do, or you can print on larger paper and cut off the excess. But that requires something else, called bleed, to be incorporated into your design.

Bleeds

Printing to the edge of the page requires printing on a slightly larger paper size, and any element you want touching the edge—bleeding off the page—of your finished piece has to extend past the finished size.

This extra is called bleed space, and it is typically 0.25 inch added to all sides. It is then cut away from the finished piece, you can use cropmarks and a straight edge to aid you in trimming your work.

The rule for bleeds is that an element should never stop right on the trim guidelines of your page design. Anything that touches or almost touches the trim line should extend past it.

Well, why is that; why can't you just cut right on the edge? Because you aren't perfect and bleed space hides errors that would otherwise undermine the craftsmanship of your prints. Being off by an imperceptibly small measure can leave a noticeable sliver of white paper behind.

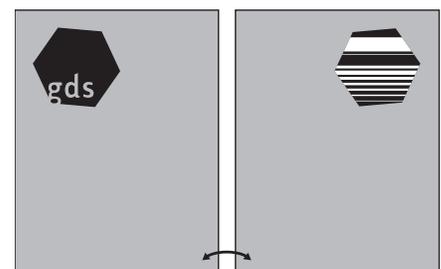
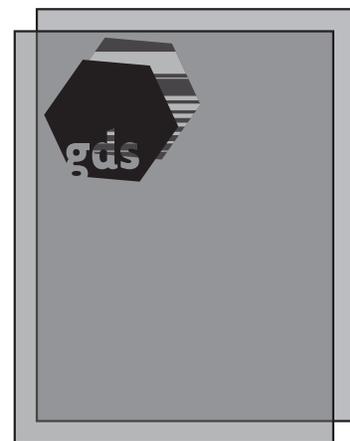
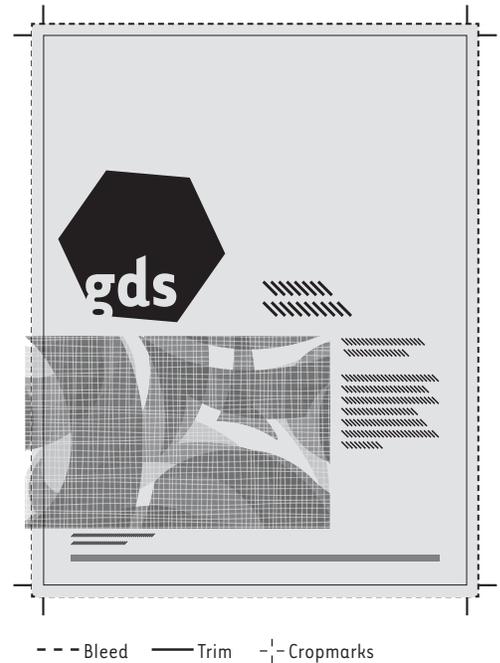
Even with machine finishing, there are a lot of tiny imprecisions. Your own hand when loading and moving paper, friction keeping a stack of paper from perfectly lining up, and the printer won't grab and feed every page exactly the same way. Now imagine having to cut the pages of a magazine or a stack of papers by hand, as you will be in this course, with greater precision than that. These can be absolutely tiny differences, but they become consequential when you have color extending to the edge.

For perspective, 1 pt is 1/72 of an inch, smaller than your ruler can measure, but twice the size of the thickest stroke in the typeface you are reading!

Registration

In printing, registration means lining things up. It can refer to lining up color separations for printing with multiple ink colors, and it can refer to lining up the front and back side of the page.

When you are trying to line two things up for front and back printing, make sure you feed the paper in correctly (for manual two sided printing). You also need to make sure that you've placed your elements correctly on the page.



PRINT PRODUCTION: LIMITS AND CONSIDERATIONS

Digital Printing: A digital press is good for small runs—in print, that’s anything under about 5000 pages—and for printing unique copies, like envelopes with a different address on each one. It has lower setup costs, but is more expensive per piece than printing with a press designed for high volumes.

Digital printing is also the type of printing that you are most familiar with. It is what desktop laser and inkjet printers do.

Offset Printing: Offset means that colors are applied individually. This allows for special inks and color mixes to be used. It has been coopted as a term for types of presses that are not digital, even though that is not always the case.

Offset printing is good for high volume printing, where the same content will be imprinted many thousands of times without changing.

Laser Printers

Laser printers work by melting a wax/plastic powder called toner onto paper. They do this with a component called a fuser that gets heated to a high temperature. The temperature needed will vary depending on the type of paper that you are using. While consumer and business grade printers will not show you this information, they will have paper type settings that you can set with the print dialog. If you aren’t printing on plain copier paper, then you do need to tell the printer driver settings what paper type you are using in order to get a good print. If you don’t, the temperature can be set too high or low, causing the toner to flake off the paper or have a rough appearance.

Never use inkjet-only stock in a laser printer. Transparencies, fabrics, adhesive-backed papers, and photo papers that are not meant for laser printers can cause damage, even melting or burning, inside the machine.

Inkjet Printers

Because inkjet printers spray liquid ink onto a page, they will generally be worse for small or fine typography, because the ink will bloom out from where it is applied. The large format printers available for student use in the SOA’s General Lab are wide-gamut printers, meaning an expanded range of printable colors. In particular, these can print “matte black,” a rich and striking black that you can setup to print with instruction from the lab’s staff.

Dot Screens

Unless you are using a gray ink, gray doesn’t exist. The same goes for tints of any ink color. You can either put down a dot of that color or leave it blank. So, printers make light colors with a dot screen. Tiny dots are put on the paper and the distance between them averages out optically into the tint that you see.



In these examples, look closely at the lighter shades and you should be able to see the dot screen that the printer used to make them.

50% – Be cautious of printing type with a dot screen, because small type and fine lines will be lost at light shades.

20% – Be cautious of printing type with a dot screen, because small type and fine lines will be lost at light shades.

10% – Be cautious of printing type with a dot screen, because small type and fine lines will be lost at light shades.

5% – Be cautious of printing type with a dot screen, because small type and fine lines will be lost at light shades.

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PRINT PRODUCTION: BOOKS

Saddle Stitch Binding

Saddle stitch is a type of binding where the pages are stitched, usually with a couple staples, from the outside to the center of the book and then folded in half.

Examine any saddle-stitched magazine and you will notice that page five, for example, is printed on a sheet of paper next to a page all the way at the end. Take one of the sheets out and you will notice that each has four pages on it. A sheet with multiple pages on it is called a signature or a printer spread. This puts limits on the page count of the book. Here, it means the total number of pages in the magazine has to be a multiple of four. It also means that a 60 page magazine only requires 15 sheets of paper.

All saddle stitch books have an arrangement of pages like this. InDesign and Adobe Acrobat's Print Booklet features can handle this for you for simple book types, but you may need to make your own printer spreads when those options don't meet your needs.

The pattern to the left is a simple one for 2-up Saddle Stitch (#-up means the number of pages on each side). It demonstrates how to "impose" pages in a printer spread. Each signature has four pages, two on the frontside and two on the back. More complicated patterns can print 8, 16, 32 or more on a single sheet of paper—which, when you're printing at school on your own, can significantly cut the cost of printing your projects.

Since your process books are digest size, you can use a 4-up arrangement, which will print 8 pages on a single sheet. You can plan out your book by doing a mock-up with some scrap paper. Folding up the paper, number the pages as they appear when folded together, then unfold to see the pattern you'll need to arrange your pages in.

