



A Print Resource Guide for the Harvard Community

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Introduction

Each year Harvard University spends over \$25 million on graphic arts and print-related services and materials. Going back to 1643 when Harvard took ownership of the first printing press in British North America, the University has had a connection with the printing of materials. In the 360-plus years that have elapsed, printing has been transformed from hand-set type to a desktop publishing environment. Books and printed materials no longer require weeks to produce but can be done in days or even overnight. Digital printing has had a significant impact, and many industry experts believe this impact is as dramatic and sweeping as Gutenberg's invention of movable type. These changes highlight the need to properly plan your print project and have a clear goal of the product's intent.

Although digital printing has allowed for personalized pieces with variable data, shorter turnaround times, less waste, and other benefits, offset printing still plays a major role in the Harvard community. Briefly, offset printing (or offset lithography) is the process of producing a printed image using a printing plate and inks. The advantages of offset printing are the economies and speed for longer print run lengths and its high degree of color quality. Digital printing is a broad term and refers to images that are created electronically and reproduced, using toners, dyes, or ink, directly to the paper. This technology makes short runs less expensive, as well as allowing quicker turnaround of projects. Advances in technology have increased the quality and speed of digital printing, and many projects prior to these advances had to be produced by the offset printing process. Technology advancements have allowed many aspects of offset printing to be combined with digital printing, giving the end-user the best that both processes have to offer.

Harvard University Strategic Procurement hopes that this *Resource Guide* is helpful as you make decisions surrounding your next printing project. The content of this guide is based on input from a variety of print professionals dedicated to the print industry and the unique requirements relating to academic printing and the Harvard University community. This document is intended to assist the community in creating cost-effective printed material, while maintaining the integrity of the Harvard brand and tradition, and keeping an eye towards environmental stewardship.



Green Graphics

Harvard University is committed to using environmentally friendly design and print solutions in its publications. In order to achieve the most cost-effective publications, while adhering to the green graphics initiative at Harvard, we ask that you consider the following when creating your publications:

Design

Design resources that you use when creating your printed material should make every effort to “design green.” Here are a few considerations:

- Design products that fit printing presses in the most efficient manner.
- Specify paper that is recycled whenever possible.
- Design a series of products to fit on a single sheet to save paper, energy, and money.
- Design to use FSC (Forest Stewardship Council) certified papers.
- Use PDF proofs whenever possible to minimize toner use and paper.
- Design products that require fewer varnishes and coatings.
- Ask your designers to make their design solutions as environmentally friendly as possible.

Printing

Harvard’s Print Partners understand the importance of using print technology and materials that reflect Harvard’s dedication to green graphics. Every Harvard Print Partner will gladly share information on their print

processes and technology with you. From paper purchasing, to ink selections, to printing plant maintenance, Harvard's Print Partners are constantly considering how your project can best meet your expectations while using technologies and materials that help the environment. When discussing green graphics with your print vendor, you may wish to address the following:

- Your printer's "green graphics" policy.
- How does your printer handle proofs?
- What is your printer's recycled paper usage?
- How is paper recycled?
- How is chemistry treated and disposed of?
- What "green graphics" educational opportunities does your printer offer?
- Does your printer use FSC-certified papers for "house sheets?"

Green graphics start with design and end with delivery of the final product. The steps taken from design to delivery are important to Harvard and to the environment!



Getting Started

Getting started on a print project requires that you do a fair amount of information gathering prior to requesting an estimate or RFO (Request for Quotation) from your designer or preferred print partners. The more specific you can be in presenting your expectations, the more helpful your print resource can be. Here is some of the information that you should be prepared to include in your request for quotation:

Green Graphics

Tell your printer exactly what your expectations are regarding green graphics. If your expectation is to use 100% recycled stock for the project, let your printer know. If you want to use the most environmentally appropriate inks, you should let your wishes be known. Be sure to ask your printer for assistance in making environmentally sound decisions for your project.

Quantity

The quantity of any product you order has significant impact on the technology your printer may suggest using. The run length often dictates the type of printing press that your project will print on. It also impacts the final cost of the product. For example, purchasing eight lots of business cards at one time is far more economical than placing an order for one or two lots of cards. Purchasing enough envelopes for more than one mailing is much more economical than if you purchase a small number for one mailing. By doing an assessment of product requirement over an extended time, you can save a considerable amount of money. On the other hand, you may want to print “on-demand” for certain types of products like booklets or variable data projects. That allows you to have the most current information included in your publication while minimizing the storage space required for large quantities.

Dimensions

Ask your preferred print partner to illustrate how minor adjustments in dimension can save you money. In some cases, the most minor adjustment to size can save you paper costs, printing costs, and mailing costs.

While some projects, like business cards, have standard dimensions, many projects have flexible dimensions.

Number of Pages

The more pages you print, the more paper, ink, bindery time, and finishing is required. Ask your designer to design “green” to minimize the impact your project will have on the environment.

Paper

There are hundreds of paper choices available. As a result, you should make your paper expectations clear by stating that you want use papers that make sense for Harvard University and for your particular project. Ask your designer or paper vendor to suggest papers that are friendly to the environment, that are FSC certified, and that are available in the quantity that you need for your project.

Ink

There are several issues regarding ink that your printer can help you make decisions on. By making sound decisions at the outset of a project you can optimize the visual appearance of your publication while minimizing cost. Present your expectations regarding use of color, and your design resource and printer will present all of the options available to you. They will also advise you on the costs associated with various inks and the best manner in which to prepare your files for printing in multiple colors.

Artwork

How you present your artwork is critical to the success of a printing project. If you are sending files to your printer, you should be very specific in how the files will be presented. Often, the cost of making changes to your files can increase the cost of your project substantially. Ask your preferred print partner what the pitfalls are relating to poor file preparation.

Proofs

Let your printer know if you require hard proofs or digital proofs. A great deal of time, energy, and expense can be saved by identifying the proof requirement at the outset of a project.

Bindery

Binding and finishing services vary greatly. If you need assistance in understanding the various choices, simply ask your printer to outline all of the available options. You will be better informed, and your printer will know that you are open to all binding and finishing solutions.

Delivery

Delivery costs vary from printer to printer. The cost of maintaining and fueling delivery vehicles is substantial. If you have specific delivery instructions, the cost can be factored into the estimate. While many printers say there is no delivery charge associated with a project, the simple fact is that all printers factor in deliveries. Therefore, delivery instruction should be as clear as possible.

Quality

Different print technologies offer different levels of quality. Tell your printer what the audience is for your project and how you want your project to be viewed from a quality perspective. Be realistic in your budget estimation if you are expecting the highest level quality of reproduction on the printed page.

Use of the Harvard Name and Trademarks

Harvard University's worldwide trademark registrations include "HARVARD," "HARVARD UNIVERSITY," and the "VE-RI-TAS" shield. The various Harvard University school names, such as "HARVARD COLLEGE," "HARVARD BUSINESS SCHOOL" and "HARVARD LAW SCHOOL," their respective shields and several other marks associated with the University, such as "CRIMSON" and "H," are also Harvard trademarks. An "®" indication must appear on all products bearing registered marks and a "™" on products containing any of Harvard's marks not yet registered. Faculty and staff are authorized to use the Harvard name and insignia (including, if appropriate, the name/insignia of the faculty or affiliation) on business cards and stationery that indicates their affiliation with the University. Individual departments commonly set standards for the format of such items, as well as procedures for ordering/payment. You should contact your local unit/department administrator for more details. If you need an electronic version of a shield, please direct request to the Trademark Program's e-mail address: trademark_program@harvard.edu or to 617-495-9513. For further information, please refer to <http://www.trademark.harvard.edu/>.

HARVARD UNIVERSITY



Print Job Specification Sheet

Customer Name _____ Tel: _____
Dept. Name: _____ Fax: _____
Address: _____ E-mail: _____

Credit Card _____ P.O.#: _____
Exp. Date _____

Job Title: _____
Quantity: _____
Flat Size: _____ **Finished Size:** _____
Number of Pages: _____
Disk Supplied: PC MAC **Software:** _____

Fonts Supplied: _____

Photos: Yes No **Bleeds:** Yes No
Paper: _____
Ink: _____
Proofs: Page Proofs Color Digital Proofs Dylux
Finishing: _____
Quote: _____
Delivery Date: _____
Deliver To: _____ **Samples:** Yes No
_____ **Deliver to:** _____
_____ _____
_____ _____

Special Instructions: _____

A print job specification sheet should include as much information as possible to ensure that print quotes are as accurate as possible. A PDF version of this specification sheet is available to the Harvard community by contacting dan_hart@harvard.edu or can be downloaded from the Procurement website at <http://vpf-web.harvard.edu/ofs/procurement/index.shtml>.



A Glossary of Terms

Aqueous Coating A water-based coating that is applied like varnish to protect the printed surface. Aqueous coating can be applied in-line or off-line.

Author's Alteration (AA) Corrections made to a proof that are not the result of an error by the printer. You will be charged for AAs, and this may affect the delivery schedule. Check with your PSB advisor regarding the cost of making AAs.

Barrel Fold In binding, two or more simple folds in which the outer edges of the pages are folded in toward each other.

Binding The use of thread, staples, wire, glue, or other agents to collect sections or signatures into books, brochures, and pamphlets.

Bleed Extra image or color that extends beyond the edge of a printed page. Bleed allows for variances in bindery and ensures that the color or image goes to the very edge as intended.

Blind Embossing A raised impression made without using ink or foil on the embossed image.

Blueline Proof A type of printer's proof, so called because it has a bluish tint. The blueline shows all artwork and text in position. Your approval of the blueline authorizes the printer to run the job as shown on the proof. *Also called a dylux or salt proof.*

CMYK (Cyan, Magenta, Yellow, Black) The subtractive process colors used in color printing. Black (K) is added to enhance color and contrast.

Coated Stock Paper stock having a surface coating which produces a smooth finish. Surfaces vary from eggshell to glossy.

Coating An emulsion, varnish, or lacquer applied over a printed surface to protect it. *See also Varnishing.*

Color Correct To adjust the relationship among the process colors to achieve desirable colors.

Color Proof A general term for any proof that shows text and images in color, including laser prints, high-quality color inkjet prints, or sophisticated high-resolution color proofs used by printers to match critical color. It is important to qualify with the printer whether the proof is intended to show accurate color or to indicate color placement only.

Crossover An image that straddles two pages or runs across a spread. Critical for bindery work, particularly when the crossover image is created from two separate pages. Not all bindery methods are good candidates when crossovers need to match up exactly.

Debossing To press an image into paper so it lies below the surface.

Die-Cutting The process of using sharp steel rules to cut special shapes into paper. Die-cuts can be done on either flatbed or rotary presses. Rotary die-cuts are usually done in-line with the printing.

Duotone A two-color halftone reproduced from a black-and-white photograph; two halftones are shot at different screen angles and tonal values and then registered together in two different colors to create a two-tone look.

Embossing Impressing an image in relief to achieve a raised surface; either in register to a printed image (*registered emboss*) or not in register to a printed image (*blind emboss*).

Foil Stamping Printing method that releases foil from its backing when stamped with a heated plate or die.

Folding To bend or crease a sheet of paper to create a printed or bound document.

Folding Dummy A mock-up of the job using the actual paper trimmed and folded to exact specifications.

Font A specific typeface. A font name often contains a reference to the style name, such as "Times Roman" or "Century Oldstyle."

Gutter The blank space or inner margin from printing area to binding.

Halftone The production of continuous-tone images through a screening process, which converts the image into dots of various sizes and equal spacing between centers (AM screening) or dots of equal size with variable spacing between them (FM screening).

Imposition In range assembly, the positioning of pages on a signature so that after printing, folding, and cutting, all pages will appear in the proper sequence.

Ink Coverage The amount of ink added in the printing process. Also describes the maximum allowed amount of each component color on a certain paper in a certain printing process. Expressed as a percent.

Ink Drawdown A special ink formulation prepared on the paper upon which the job will be printed.

Knockouts Type or images that reverse out of a solid or tint, allowing the paper to show through. *Also called reverse.*

Match Color A custom-mixed ink color that exactly matches a specified color. Typically chosen from numbered color matching systems. *Also called spot color.*

Metallic Inks Inks containing metal powder that have a shiny reflective appearance.

Midtones The tonal range between highlights and shadows of a photograph or reproduction.

Offset In printing, the process of using an intermediate blanket cylinder to transfer an image from the image to the substrate. Short for "offset lithography."

PDF (Portable Document Format) A protocol developed by Adobe Systems for sending and viewing documents via email or the Internet.

Perfect Binding A method of binding which uses adhesive to hold signatures or pages together.

PMS (Pantone Matching System) An industry-standard numbered color system that printers and designers use to select and communicate accurate color choice. Pantone guides are available at PSB for your reference.

Printer's Error (PE) An error made by the printer on a proof. You will not be charged for PEs, and the delivery schedule will not be affected.

Process Color The combination of four standard inks used by printers to reproduce color images. These inks—cyan, magenta, yellow, and black—combine in various densities to allow white light reflecting off of white paper to be perceived by the eye in a wide range of colors. This system is referred to as CMYK color and is different from RGB color (red, green, and blue), which is used in computer monitors.

Resolution The clarity or fineness of detail of an image as reproduced on a computer monitor, laser printer, or printing press. Resolution is often expressed in units of picture information—pixels per inch (ppi) for electronic images and dots per inch (dpi) for printed images—and indicates the amount of detail that can be reproduced. The larger an image, the more pixels or dots per inch it needs to contain. To look good on screen, images for the web typically contain 72 pixels per inch. The same image for print reproduction would require 300 dots per inch. Appropriate image resolution is important for the success of any web or print project.

RFP (Request for Proposal) A document that outlines the goals and specifications of a project for the benefit of vendors who are being asked to bid on it.

RGB (Red, Green, Blue) Refers to a color system using red, green, and blue light. RGB is most often associated with computer monitors and digital scanners that render a wide range of colors by combining red, green, and blue light. RGB is also referred to as additive color, because adding all three colors together in equal strength creates white light. This process is known by yet another name, transmissive color, because the source transmits the light—a computer monitor, for example. This system is different from process color, or CMYK, used in the printing process.

Saddlestitching In binding, to fasten a booklet by wiring it through the middle fold of the sheets. *Also called saddle wire.*

Score To impress or indent a mark in the paper to make folding easier.

Sheet-Fed Printing from stacks of sheets that feed one at a time through the press.

Sheet-Fed Printing Printing on a press that uses precut sheets of paper, typically 13" x 20" or 23" x 35", as opposed to a roll of paper. *See also Web Printing.*

Shell For use in creating short-run publications, mastheads, posters, business cards, info sheets, or brochures with frequently changing information. These preprinted shells are ordered in bulk for a volume discount and then imprinted or photocopied with appropriate current information in small quantities at a low cost.

Spot Color A solid ink color in addition to black or process color. Spot color is often the accent color in two-color printing. In CMYK, or process color, spot color is used for small text or other areas where process color is not appropriate.

Spot Varnish Varnish applied to specific areas of a sheet, as compared to flood varnish.

Spreads A technique of slightly enlarging the size of an image to accomplish a trap with another image. Also, a two-page arrangement of copy.

Stationery Usually refers to a set of matching letterhead, envelopes, business cards, memo sheets, and other products used in the office environment.

Stochastic Screening A digital screening process that converts images into very small dots (14-40 microns) of equal size and variable spacing. *Also called Frequency Modulated (FM) screening.*

Style Guide A manual that includes specific instructions for the proper use and placement of type and graphics. Editorial style guides outline instructions for standardizing punctuation and proper usage according to an agreed-upon style for a set of publications.

Thermography Printing method using colorless resin powder that takes on the color of the underlying ink to create a raised printed surface.

Tints Various even tone areas (strengths) of a solid color created by dots rather than solid ink coverage. *Also called screen tints.*

Trapping In prepress, refers to how much overprinting colors overlap to eliminate white lines between colors in printing.

Type The letters of the alphabet when used in publications. A set of type in one style is referred to as a typeface. A complete family of typefaces in one style, including bold or italic versions, is called a font.

Uncoated Stock Paper that has not been coated. There are varying degrees of quality with the highest being writing, text, and cover papers.

Varnishing A thin, protective coating applied to a printed sheet for protection or appearance. Also, in inkmaking, it can be all or part of the ink vehicle.

Web Press A press which prints on a roll of paper.

Web Printing Printing on a press that uses long rolls of paper, as opposed to precut sheets of paper. *See also Sheet-Fed Printing.*



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