Grid Based Design

"A grid consists of a distinct set of alignment based relationships that act as guides for distributing elements across a format. Every grid consists of the same basic parts, no matter how complex the grid becomes. Each part fulfills a specific function; the parts can be combined as needed, or omitted from the overall structure at the designers discretion, depending on how they interpret the informational requirements of the material".

Making and Breaking the Grid
Timothy Samara

Or more simply put
The grid system is a good way to provide unity throughout a design. By establishing an overall layout scheme, multiple surfaces (e.g. pages in a book, web pages, etc.) can maintain a consistent visual identity.

Additionally, establishing a good grid system at the beginning of the design process can help ensure that the final design has incorporated important design principles like tension, balance, and hierarchy.

It is important to note that adhering to a grid system does not mean laying out all of your pages exactly the same. An overall structure is maintained by the grid, but each page can implement that structure in a unique way. Additionally, a magazine might use different grid systems for different sections.

While there are many different approaches to using and adhering to a grid system, here are some basic concepts:
Anatomy

Margins – the "negative space" (white area) that surrounds the content area. Margins are very important in determining the overall tension for a piece.

Columns – vertical components that can contain content

Flowlines – horizontal lines that break columns into content modules

Modules – units of space, delineated by columns and flowlines, which make up the grid

Spatial Zones – groups of modules that are assigned to hold a certain type of content

Alleys - space between the columns

Gutter – the space between a vertical edge of the format and its nearest column

Markers – placeholders for content that is placed consistently across multiple surfaces
Types

Manuscript Grid – The manuscript grid is the simplest of the grid types. It is primary composed of a large rectangular area that fills most of the surface. Because this layout is so simple, small variations of other design components (e.g. margins or typography) can drastically influence the feeling of the overall design.

Multi-Column Grid – The column grid is exactly what it sounds like, a grid system of columns. Whether two, three, or more columns are used, it is important to size the column width appropriately for the font size. If the font is proportionally too large, there will be many hyphenated words, and the text will be difficult to read. If the font is proportionally too small, it will be difficult for the reader to distinguish between contiguous lines. The 2/3rds Rule is a popular way of implementing a multi-column grid.

Modular Grid – This layout consists of a column grid that has been subdivided by several horizontal flowlines. The resulting table-like grid of modules is very useful for displaying complex content and is frequently used for newspaper layouts. The modular grid is actually very flexible, because groups of modules can be grouped into spatial zones for displaying a variety of content.

Hierarchical Grid – This grid type doesn't rely on regularly-spaced columns. It takes its structure from the content that it contains. Size, placement, and other layout considerations are very important to making this type of grid work.

Golden Section - This layout is actually based upon the Fibonacci Series in mathematics and is naturally balanced.

Of course, as with all design principles, there are situations that call for "breaking the rules." Depending on the needs of a design, a grid system can vary drastically from the basic grid types discussed above.

There are a number of common grid types, these are

•Manuscript Grid
•Column Grid
•Modular Grid
•Hierarchical Grid

Variations of the above include

•Modular grid with compound articulations
•Modified column grid
•Proportional Modular grid
•Compound Column and Hierarchical Grid
•Modified Manuscript Grid
•Format Dependent Modular Grid
•Compound Modular and Hierarchical Grid
•Proportionally integrated Column and Modular Grids

Some examples of common grid types

Column Grids

single-column grid

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A grid can be simple or complex, specific or generic, tightly defined or loosely interpreted. Typographic grids are all about control. They establish a system for arranging content within the space of page, screen, or built environment. Designed in response to the internal pressures of content (text, image, data) and the outer edge or frame (page, screen, window), an effective grid is not a rigid formula but a flexible and resilient structure, a skeleton that moves in concert with the muscular mass of content. Grids belong to the technological framework of typography, from the concrete modularity of letterpress to the ubiquitous rulers, guides, and coordinate systems of graphics applications. Although software generates illusions of smooth curves and continuous tones, every digital image or mark is constructed—ultimately—from a grid of neatly bounded blocks. The ubiquitous language of the gui (graphical user interface) creates a gridded space in which windows overlay windows. In addition to their place in the background of design production, grids have become explicit theoretical tools. Avant-garde designers in the 1910s and 1920s exposed the mechanical grid of letterpress, bringing it to the polemical surface of the page. In Switzerland after World War II, graphic designers built a total design methodology around the typographic grid, hoping to build from it a new and rational social order. The grid has evolved across centuries of typographic evolution. For graphic designers, grids are carefully honed intellectual devices, infused with ideology and ambition, and they are the inescapable mesh that filters, at some level of resolution, nearly every system of writing and reproduction. A grid can be simple or complex, specific or generic, tightly defined or loosely interpreted. Typographic grids are all about control. They establish a system for arranging content within the space of page, screen, or built environment. Designed in response to the internal pressures of content (text, image, data) and the outer edge or frame (page, screen, window), an effective grid is not a rigid formula but a flexible and resilient structure, a skeleton that moves in concert with the muscular mass of content. Grids belong to the technological framework of typography, from the concrete modularity of letterpress to the ubiquitous rulers, guides, and coordinate systems of graphics applications. Although software generates illusions of smooth curves and continuous tones, every digital image or mark is constructed—ultimately—from a grid of neatly bounded blocks. The ubiquitous language of the gui (graphical user interface) creates a gridded space in which windows overlay windows. In addition to their place in the background of design production, grids have become explicit theoretical tools. Avant-garde designers in the 1910s and 1920s exposed the mechanical grid of letterpress, bringing it

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The most basic page structure is the single-column grid.

In this double-page spread, the inside margins are wider than the outside margins, creating more open space at the spine of the book.
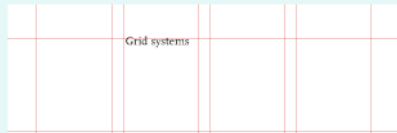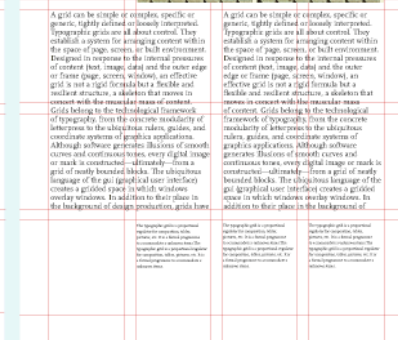
multi-column grid

There are numerous ways to use a multi-column grid. Here, one column has been reserved for images and captions, and the others for text.

In this variation, images and text share column space.

Modular Grid

modular grid

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This modular grid has four columns and four rows.

An image or a text block can occupy one or more modules. Endless variations are possible.

Laying out a grid can be a simple process
The image below demonstrates some of the key steps