For web-based experiments, this kind of basic experiment design is called an A/B test: the “A” group representing the old control, and “B” representing the new experimental change. Within Subjects: If an individual completes all conditions, rather than just one, this is known as a within-subjects design. Within-subjects designs are also known as repeated measures designs. Simple Random: Each individual in the population has an equal chance of being selected. Random selection is made until the desired sample size is obtained. Since everyone has an equal chance of being drawn, we can expect the feature distribution of selected units to be similar to the distribution of the population as a whole. Fundamental Concepts In The Design of Experiments. April 2012 · Technometrics. Clarence Ireland. Read more. Article. Fundamental Concepts in the Design of Experiments. April 2012 · Technometrics. Walter H. Carter. It is assumed that the concept exploration tool whilst being a simplification of the design problem, is still sufficiently complicated to enable reliable evaluations of a particular design concept. The response surface is used as a representation of the concept exploration tool, and by it's nature can be used to rapidly evaluate a design concept hence reducing concept exploration time. Topics. Experimental design. Publisher. New York : Holt, Rinehart, and Winston.