Design of Experiments

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[wptabtitle]Description[/wptabtitle]
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Design of experiments (DOE) is an important practical tool for understanding processes and improving their performance and control. This 3 day class is application oriented and, like all ILS courses, is designed to promote deep understanding, maintain student engagement and to develop practical skills that can be applied on the job.

It presents the statistical methods in a clear, intuitive manner and then applies them in table top exercises using popular software tools. These exercises are designed to illustrate a wide range of industrial applications and good practices for approaching and applying the methods. If necessary, we can provide basic training on statistics, as well as Statistical Process Control (SPC) and measurement system analysis.
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[wptabtitle]Objectives & Outcomes[/wptabtitle]
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- Become a lean organization
- Describe DOE as a process modeling approach; response surfaces, inputs, outputs and classes of variables
- Execute the proper steps in a DOE study
- Interpret ANOVA Results
- Describe alternative experimental designs and their role in application: full factorial, 2k, fractional factorials, blocked designs and central composite designs
- Conduct residual analysis to insure the integrity of data and models
- Apply the models in industry including their use in general process understanding (screening experiment approaches), process targeting (use in process setup and feed forward control of the process based on input measurements), improving process robustness and capability and process optimization.
- Describe the robust design approach (using the insights of Taguchi) to improving process capability

Logistics

We conduct this workshop on demand for individual companies. This workshop requires no special facilities. The ideal meeting space is approximately 30' x 30'.
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[wptabtitle]Target Audience[/wptabtitle]

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This program is designed for experienced specialists with a background in mathematics and statistics.
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