Goh Thong Ngee is Professor of Industrial & Systems Engineering at the National University of Singapore. He has been internationally known for his expertise in quality engineering and management, and has been elected Fellow of the American Society for Quality (ASQ) as well as Academician of the International Academy for Quality (IAQ). Professor Goh is the recipient of ASQ Statistics Division’s prestigious William G Hunter Award for contributions to the application of statistical methodologies for Quality in industry. The book co-authored by him, “Six Sigma: Advanced Tools for Black Belts and Master Black Belts” (Wiley, 2006), won the inaugural Dr Walter Masing Book Prize of the IAQ.

A registered professional engineer and a GE-certified Six Sigma instructor, Prof Goh has three decades’ track record in teaching, research as well as consulting and training in a wide spectrum of industrial organizations. He has trained numerous working engineers in statistical methodologies such as design of experiments, and has brought up more than a thousand Six Sigma and DFSS (Design for Six Sigma) Champions, Master Black Belts, Black Belts and Green Belts in countries in the Asia Pacific.

Prof Goh has published widely. In addition to serving on the editorial boards of several leading international professional and research journals, e.g. Quality and Reliability Engineering International, International Journal of Reliability, Quality and Safety Engineering, International Journal of Production Economics and The TQM Magazine, he is also an Associate Editor of Quality Engineering Journal of the American Society for Quality, as well as a member of the Founding Editorial Board of the International Journal of Six Sigma and Competitive Advantage.

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Payment: Payment is required prior to the course. Crossed cheque should be made payable to “National University of Singapore” and mailed together with the registration form to the mentioned address.

Discount: Maximum of 10% discount is applicable to:

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Refunds and Cancellations:
A 50% refund will be made for withdrawals (received in writing) ten working days before the commencement of the course. No refunds will be made thereafter. However, a replacement will be accepted upon prior arrangement at no extra cost. Please inform us of the changes, if any, by fax. The Professional Activities Centre reserves the right to cancel the course and fully refund the participants, should unforeseen circumstances warrant it. Every effort will be made to inform participants of any changes.

By  
Professor Goh Thong Ngee  
Department of Industrial & Systems Engineering,  
National University of Singapore

Date:  
17 – 20 March 2009

Time:  
9.00 am – 5.00 pm

Venue:  
National University of Singapore

Organised by:  
Professional Activities Centre  
National University of Singapore  
Faculty of Engineering

28 PDUs Approved by PE Board

Optimization of Industrial Processes via Design of Experiments and Quality Engineering
Course Overview
This course aims to impart to engineers and technical managers up-to-date and practical statistical tools for efficient data collection and analysis for the purpose of process capability improvement, yield maximization, rapid trouble shooting, cycle time reduction, and effective R&D.

Topics ranging from basic Design of Experiments to Taguchi Methods and Six Sigma concepts will be covered, featuring the most effective industry-proven approaches to quality excellence. Participants will be trained to make use of a commonly available software package for designing and analyzing experiments.

No prior knowledge in Statistics or statistical software is assumed on the part of the participants but familiarity with Microsoft Windows is useful.

Target Audience
Engineers, engineering assistants as well as technical managers in product, process, testing, quality, and R&D. This course is specifically designed to be application oriented, stressing practical reasoning and procedures appropriate to industrial situations. During interactive sessions, participants are encouraged to bring up topics and issues that are of particular interest in their areas of work.

Course Outline

Day 1: Basic Ideas and Procedures
Statistical approach to Quality and reliability
From SPC to Quality Engineering and Six Sigma
Why and how of Design of Experiments
Multi-factor studies in industry
Factor definition and selection
Main and interaction effects
Input-output relationships

Day 2: Advanced Techniques
Detection of non-linear effects
Efficient screening of factors
Interpretation of fractional factorials
Confounding analysis and resolution
Strategies for sequential experimentation
Rapid troubleshooting and testing
Application of cost-effective experiments

Day 3: Practical Applications
Multi-input, multi-output analysis
Integration with FMEA and QFD
Small sample experiments
Optimization under constraints
Variance reduction principles
Taguchi Methods: special features
Multi-level experimental design and analysis

Day 4: Further Applications
Potential and limitations of Taguchi Methods
Robust Design for products and processes
Manufacturing and environmental noise management
High-yield process breakthrough
Response surface methodology
Sensitivity analysis for an optimized process
Seeking and tracking optimal conditions
Case Studies

REGISTRATION FORM
Optimization of Industrial Processes via Design of Experiments and Quality Engineering
17 – 20 Mar 2009 (4 days)

Fee: Local Participants SGD 1450.00 + 7% GST
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Name of Participant: Dr/Mr/Mrs/Ms:
(Attach your name card, if any)

Designation:

Name of Organisation:

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Contact Person:

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Tel No (O): Fax No:

**Dietary Preference: Halal / Vegetarian

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