Course Lecturer

Goh Thong Ngee is Professor of Industrial & Systems Engineering at the National University of Singapore. He obtained his BE from the University of Saskatchewan, Canada and PhD from the University of Wisconsin-Madison. Prof Goh has been internationally recognized for his expertise in quality engineering and management; he has been elected Fellow of the American Society for Quality as well as Academician of the International Academy for Quality.

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.

REGISTRATION - 2 Easy Ways to Register!!

MAIL or FAX to:

Professional Activities Centre
Faculty of Engineering
National University of Singapore
9 Engineering Drive 1
Blk EA #05-34 Singapore 117576
Fax: (65) 6874 5097  Tel: +65 6874 5113

Enquires : Please contact Anna Robinson for more information at Tel: (65) 6874 5113 or e-mail: engannar@nus.edu.sg

Fee :
Singapore participants SGD 1,450 + SGD 72.50 (GST 5%)
Overseas participants SGD 1,450 (GST exempted)

Payment : Payment is required prior to the course. Crossed cheques 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:
- Employees of the NUS Technology Associates registered with INTRO (Industry and Technology Relations Office);
- NUS Alumni
- Organisations / Companies sending three or more participants.

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.

Optimization of Industrial Processes via Design of Experiments and Quality Engineering
(PE Board Accredited PDUs = 28 units)

by

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

Date : 26 – 29 April 2005
Time : 9am – 5pm
Venue : NUS, Kent Ridge Crescent

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

Website : http://www.eng.nus.edu.sg/PACentre/
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 also be shown the working of commonly available software packages for designing and analyzing experiments. The approach and tools discussed are generic and are not specific to any industry.

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
- Response surface methodology
- Sensitivity analysis for an optimized process
- Seeking and tracking optimal conditions
- Software applications
- DOE projects
- Case studies

REGISTRATION FORM

Optimization of Industrial Processes via Design of Experiments and Quality Engineering 26-29 April 2005 (4-day)
Course Fee: SGD1,450 + 72.50 (GST5%)

Name of Participant: Dr/Mr/Mrs/Ms: (Attach your name card, if any)

Designation: __________________________________________________________

Name of Organisation: _________________________________________________

Address: _____________________________________________________________

Contact Person: _______________________________________________________

Email: _________________________________________________________________

Tel No (O): __________________ Fax No: _________________________________

**Dietary Preference: Chinese / Halal / Vegetarian (pls tick)

Payment mode:
Cheque / Bank draft No. : __________________________

VISA / MSTR : _______________________________________________________

Signature : ___________________________________________________________

Expiry Date : _______________________________

Amount (S$) : _______________________________

Payable to “National University of Singapore”

Closing Date: Please send in your registration form together with your payment by 19 April 2005

Authorised Signature / Company Stamp