



**SBL
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DESIGN FOR SIX SIGMA

ARGI MANAGEMENT CONSULTANTS SDN. BHD., an educational organization committed to supporting leading edge education for manufacturing companies, now offers

DESIGN FOR SIX SIGMA

This program is designed specifically for the development of Engineers in the Best Practices in Product Design and Development Disciplines. The contents of the program, the structure of the program and the methods of delivery make this program an effective learning experience for Product Design and Development Engineers. This will enable them to more effectively participate in, lead and manage Product Design and Development activities and teams based on the Six Sigma Methodology

This program will be delivered over 5 months of intensive part-time study. At the end of the program, participants will sit for a certification exam by Argi Management Consultants Sdn. Bhd. They will be Certified as Six Sigma Black Belts in Design and Development Engineering.

Our certification is a recognition that an individual has demonstrated a proficiency within and comprehension of the body of Knowledge in Product Design and Development using the Six Sigma Methodology. Organizations will benefit from the significant improvements that will occur to their mission critical Design and Development Process through the increased competence in their Design and Development Engineers..

**Argi Management Consultants Sdn. Bhd.
303-5-10, Krystal Point,
Jalan Sultan Azlan Shah,
11900 Sungai Nibong,
Penang,
Malaysia.**

Tel/Fax : 04-6423284 (E-Mail : argimc@pc.jaring.my)



DESIGN FOR SIX SIGMA

COURSE OBJECTIVES :

- To provide participants with an in-depth and clear coverage of all the important, philosophical, organizational, implementation and technical aspects of designing for Six Sigma.
- To expose the participants very clearly to the DFSS deployment and execution process.
- To develop practical skills in applying DFSS in real world situations.
- To understand best practices in product design and development.

WHO SHOULD ATTEND?

- Process Engineers, Reliability Engineers,
- QC Engineers, Test Engineers,
- QA Engineers, R&D Engineers,
- Equipment Engineers, Product Engineers
- and Managers of all of the above disciplines.

PROGRAM OUTLINE

DESIGN FOR SIX SIGMA (DFSS)

PARADIGM OF DESIGN

- A. What is DFSS
- B. Why DFSS
- C. The DFSS phases
- D. What kind of problems are solved by DFSS
- E. Advanced Product Quality Planning and DFSS

DFSS DEPLOYMENT

- A. DFSS Deployment strategies
- B. DFSS Deployment prerequisites
- C. DFSS Training
- D. Elements critical to sustain DFSS deployment

SIX SIGMA FUNDAMENTALS

- A. What is Six Sigma
- B. Process mapping, value stream mapping and process management
- C. Process capability
- D. Overview of the DMAIC Process improvement methodology
- E. Six Sigma goes upstream – Design For Six Sigma

PRODUCT DESIGN AND DEVELOPMENT CONCEPTS

- A. Historical developments in design
- B. Product development paradigms
- C. Challenges in design and product development
- D. Conceptual and operational vulnerabilities in design
- E. Axiomatic designs and robust designs.

DESIGN FOR SIX SIGMA METHODOLOGY

- A. Formation of the design team
- B. Determining customer expectations
- C. Understand functional requirements evolution
- D. Generate Concepts
- E. Select the best concepts
- F. Finalize the physical structure of the selected concept
- G. Initiate transfer function development
- H. Assess risk using DFMEA and PFMEA
- I. Transfer function optimization
- J. Design for 'X'
- K. Tolerance design and tolerancing
- L. Pilot and prototype design
- M. Validate design
- N. Launch mass production

DESIGN ANALYSIS AND DESIGN SYNTHESIS

- A. Establishing the Function requirements through Analysis
- B. Creating Solutions to meet the Functional Requirements

QUALITY FUNCTION DEPLOYMENT

- A. What is QFD
- B. QFD Benefits
- C. The QFD Methodology
- D. Developing the House of Quality
- E. Using the House of Quality

THEORY OF INVENTIVE PROBLEM SOLVING (TRIZ)

- A. TRIZ Fundamentals
- B. TRIZ Problem Solving Process
- C. Contradiction Resolution
- D. Separation Principle and Inventive Principle
- E. Complexity Reduction

FUNDAMENTALS OF EXPERIMENTAL DESIGNS

- A. Full Factorial Designs of Experiment
- B. Two level Full Factorial Designs
- C. Three level Full Factorial Design of Experiments
- D. Fractional Factorial Designs of Experiment

TAGUCHI'S EXPERIMENTATION AND ROBUST PARAMETER DESIGN TECHNIQUES

- A. Taguchi's Orthogonal Arrays
- B. Taguchi's Experimental Design
- C. Loss Function and Parameter Design

RSM

- A. Introduction to RSM
- B. Response Surface Experimental Designs

TOLERANCE DESIGN

- A. Introduction
- B. Worst Case Tolerance
- C. Statistical Tolerance

SIMULATION TECHNIQUES FOR TOLERANCE SETTING

DESIGNING FOR MANUFACTURABILITY AND ASSEMBLY

- A. Intro to DFMA
- B. The DFMA Approach
- C. DFMA Case study

DESIGNING FOR MAINTAINABILITY, FOR RELIABILITY AND FOR LIFE –CYCLE-COST

- A. Approaches to DFM, DFR and DFLCC

DESIGN AND PROCESS FMEA

- A. FMEA Fundamentals
- B. Approach to DFMEA
- C. Integrating DFMEA into the Product design process
- D. Approach to PFMEA
- E. Integrating DFMEA and PFMEA

DESIGN VALIDATION

- A. Design Analysis and Testing
- B. Prototypes
- C. Process and Product Validation

PROGRAM FEES

Fees for the Design For Six Sigma program will be :

Tuition Fees RM5,950.00 per participant

DFSS is 100% claimable from PSMB under the SBL scheme.

APPLICATION PROCEDURE

Complete the attached application form and return via fax to :

Argi Management Consultants Sdn. Bhd.

**303-5-10, Krystal Point,
Jalan Sultan Azlan Shah,
11900 Sungai Nibong,
Penang.**

Tel/Fax : 04-6423284

Email Address : argimc@pc.jaring.my

Website: <www.argi.com.my>



PROGRAM SCHEDULE FOR DFSS)

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COURSE TITLE	CLASSES (9:00am – 5:00pm)		QUIZ
<ul style="list-style-type: none"> • Design for six Sigma (DFSS) Paradigm of Design • DFSS Deployment • Six Sigma Fundamentals 			
<ul style="list-style-type: none"> • Product Design And Development Concepts 			

COURSE TITLE	CLASSES (9:00am – 5:00pm)		QUIZ
<ul style="list-style-type: none"> • Design For Six Sigma Methodology • Design Analysis And Design Synthesis 			# 1 9:00am – 9:45am
<ul style="list-style-type: none"> • Quality Function Deployment 			
<ul style="list-style-type: none"> • Theory Of Inventive Problem Solving (TRIZ) 			

COURSE TITLE	CLASSES (9:00am – 5:00pm)		QUIZ
<ul style="list-style-type: none"> • Fundamentals Of Experimental Designs 			# 2 9:00am – 9:45am
<ul style="list-style-type: none"> • Taguchi’s Experimentation And Robust Parameter Design Techniques 			

COURSE TITLE	CLASSES (9:00am – 5:00pm)		QUIZ
<ul style="list-style-type: none"> • RSM • Tolerance Design • Simulation Techniques For Tolerance Setting 			# 3 9:00am – 9:45am
<ul style="list-style-type: none"> • Designing For Manufacturability And Assembly • Designing For Maintainability, For Reliability And For Life-Cycle-Cost 			# 4 9:00am – 9:45am

COURSE TITLE	CLASSES (9:00am – 5:00pm)		QUIZ
<ul style="list-style-type: none"> • Design And Process FMEA 			
<ul style="list-style-type: none"> • Design Validation 			

Final Exam : 27th October, 2006
Total no. of contact hours : 120 Hrs (15Days)





PROGRAM FEES

Tuition Fees RM 5,950.00 per participant

PSMB SCHEME

SBL
 SBL KHAS

CONTACT PERSON

Name : _____
 Telephone : _____
 Position : _____

APPLICATION FORM

Send this form to :
Argi Management Consultants Sdn. Bhd.
No. 303-5-10, Krystal Point,
Jalan Sultan Azlan Shah,
11900 Sungai Nibong,
Penang.

NAME OF PROGRAM APPLYING FOR

DESIGN FOR SIX SIGMA

PERSONAL DETAILS

Name : _____
 IC No. : _____ Date of Birth : _____
 Gender : Male Female Nationality : Malaysian Other, please specify : _____

CONTACT INFORMATION

Permanent Home Address : _____
 Telephone/ email add. : _____
 Contact Address (if different to permanent address) : _____
 Telephone : _____

PRESENT EMPLOYMENT DATA

Company : _____
 Address : _____
 Telephone : _____
 Fax No. : _____
 Position : _____

HIGHEST ACADEMIC QUALIFICATIONS _____

SPONSORSHIP

Sponsored by employer Yes No

Length of Service in this position : _____

ENDORSEMENT BY CURRENT EMPLOYER

The company endorses this application and is aware that the student will be involved in applying the knowledge gained during the course, in assignments which may involve the student's workplace.

Signed : _____ Name : _____
 Date : _____ Position : _____

DECLARATION

I understand that the purpose of collecting this information is to allow ARGI Management Consultants Sdn. Bhd. to carry out its selection process for admission to programs. This declaration authorizes this information to be disclosed to the parties involved in that selection process. I certify that all the information in this application is correct and that I will observe such rules and conditions as may be required by ARGI Management Consultants Sdn. Bhd.

Signed : _____ Date : _____

PROFILE

MR. RAJ SEELA RAJ

Mr. Raj Seela Raj has had a distinguished career as an Engineering Manager and as a Senior Research and Development Manager in leading Multinational companies in Penang. He began his career in 1972 after graduating with a Masters Degree in Electrical Engineering from the Indian Institute of Science, Bangalore, India. and has since been involved in a variety of Engineering and R & D Functions.

Mr. Raj Seela Raj spent 30 years in Siemens/Osram in various Engineering and Manufacturing functions - as an Engineering and Instrumentation Manager, as a Manufacturing Manager, as an IC Test Engineering Manager and as a Product Engineering Manager.

For 3 years Mr. Raj was an R&D and Applications Manager at Agilent Technologies in their Motion Control Products Division

Mr. Raj has now embarked on an endeavor to share his vast experience in the disciplines of Product Development and Design. Mr. Raj represents an excellent resource for imparting knowledge in the areas of Design and Development given his academic accomplishment and the breadth and scope of his exposure.



PROFILE

MR. SHEKAR

Mr. Shekar Maruthamuthoo (BSc.EE) from the University of Hartford, Connecticut, USA and is currently a Six Sigma Master Black Belt and a full time teacher of the Six Sigma Program.

In his capacity as a Master Black Belt and as a Black Belt, Mr. Shekar has worked on projects with a cumulative savings of over USD700K. Major project are in the areas of Defect Reductions & Product Yield Improvement. He has coordinated, led and coached Black Belts working on Scrap Reduction Projects, Conducted numerous in house Black Belt and Green Belt Training programs.

Other experience in manufacturing includes a stint in Seagate, Penang in their Engineering Function rising from an Engineer to an Engineering Manager. As an Engineer, Shekar was responsible for process and yield improvement of ultra high precision machining. Later as an Engineering Manager he was responsible for yield improvement activities of various ultra precision engineering processes.

Mr. Shekar is a committed teacher and he takes it very much upon himself to ensure his students develop the knowledge and skills he imparts.

