

IE7610: Fundamentals of Six Sigma **Winter 2008, Wayne State University**

Instructor: Dr. Kai Yang (The Author of : *Design for Six Sigma, a Roadmap for Product Development*)
Office: 2151 Manufacturing Building, Wayne State University
Phone: 313-577-3858
E-mail: ac4505@wayne.edu
Office Hours: Tuesdays: 3-4:30 pm

Course Description:

The attraction of Lean Six Sigma is obvious — designs that work, fewer defects in manufacturing, faster and more flexible processes, lowered production costs, and greater customer satisfaction. With these pluses, it's no wonder the world's leading companies are adopting the Six Sigma approach to product development in ever-growing numbers. Now here's a comprehensive course that covers fundamental aspects of Lean and Six Sigma, that is, both Define-Measure-Analyze-Improve-Control (DMAIC), and Lean operation principles. This course will provide:

- **A Green Belt level training certificate**
- **Help to pass ASQ (American Society for Quality)'s Certified Six Sigma Black Belt Exam**
- **Sample Black Belt Exams**
- A walk through of 'what is six sigma' and 'how six sigma works'.
- Focused discussions of six sigma engineering tools
- Real world discussions of six sigma metric selection.
- A systematic 1, 2, 3 method for achieving world-class quality in product development and manufacturing
- Revealing inside-industry case studies
- Groundbreaking comparisons of traditional quality tools with newer contemporary tools

Textbook: F.W. Breyfogle III Implementing Six Sigma, by John Willey and Sons

Grading policy:

Weekly short quizzes:	15%
Homework:	7.5%
Project	7.5%
Midterm:	35%
Final	35%

Tentative schedule:

Week	Contents	Course Material
1	Introduction to Six Sigma and implementation	Ch.1-2, course notes
2.	Business process management	Ch. 4, course notes
3.	Project Management	Ch 5, course notes
4.	Six Sigma project definition	Course notes
5.	Basic probability/statistics concepts in six sigma	Ch.3, Ch 6-7, course notes
6.	Six Sigma measurement system	Ch 9, course notes
7.	Six Sigma analysis	Ch. 15-17, course notes
8.	Six Sigma analysis	Ch 23-25, course notes
9.	Six Sigma improvement	Ch 27-29, course notes
10.	Six Sigma improvement	Ch 32-33, course notes
11.	Six Sigma control	Ch 34-35, course notes
12.	Lean enterprise/DFSS	Course notes
Midterm Exam:	March 3, 2008	6:00 – 8:00 pm
Final Exam	April 30, 2008	6:00 – 8:00 pm