Course Title: **Advanced IT Design and Architecture** (ADA),

Version; 19 April 2012

Syllabus Author: [Tom@Gilb.com](mailto:Tom@Gilb.com)

Duration: 2 days (BCS Version)

**“Architecture Engineering Tools, a quantified multidimensional approach to IT architecture and design.”**

**Intended for**: People who have some design or architecture practice and responsibility today, and who want some new and powerful tools for designing. This is the beginning of a personal study leading to competence as IT Design Engineer, or IT Architectural Engineer.

**Background**: Most IT design and IT Architecture is currently based on non-engineering paradigms. There is almost total absence of quantified requirements for performance, qualities and costs, as a design basis. There is as good as no practice of estimation and measurement of the multiple impacts of a design or architecture on these requirements. In short, design is practiced in an intuitive manner. Nice words but no justification or responsibility. This is highly unprofessional and is damaging to our community. This course will expose, and make freely available, the set of tools necessary to practicing real IT Design/Architecture Engineeering.

**Syllabus**:

1. Overview Lecture: "Real Architecture"

2. Quantified Architecture Requirements as Primary Design Drivers:

3. Planguage as a basic open source language for architecture modeling and communication.

4. Specification Quality Control: Numeric evaluation of requirements and design specifications.

5. Design (Architecture) Specification: Advanced levels of detail as prerequisite for evaluation

6. Design Impact Estimation: on multiple design drivers of quality and cost.

7. Evo: Getting early and continuous feedback on design attributes

8. Dynamic Design to Cost: how to meet performance and quality targets within budgets and deadlines by dynamic learning and adjustment

**Limitations**: this course cannot train most people to be design engineers. However, the best participants will have the basis for beginning the advanced practice and teaching themselves more. We will be very concrete about the methods, the case study practices, and give free access to deeper textbook material. Your awareness of real IT design engineering will be dramatically raised. Hopefully you will wish to continue these studies and practices.

**Documentation**: Primary Textbook: Gilb, 'Competitive Engineering' (digital copy is course material). Assorted papers and slides at www.Gilb.com. The rest of the documentation will consist of a set of slides, papers, case studies, and electronic books, which will be provided on a master Memory Stick for your laptop, or we will copy onto your own memory stick. Bring a laptop with USB port, or bring a < 0.5 Gig Memory stick.

Teachers: Tom Gilb, and for large classes, also Kai Gilb (Kai will not be available Oct 2012)

Sample: http://www.gilb.com/tiki-download\_file.php?fileId=480

Real Architecture. Slides for Javazone Sept. 8 2011

http://vimeo.com/28763240 Video

Slides for 1 hour overview: <http://www.gilb.com/tiki-download_file.php?fileId=480>

Paper: http://www.gilb.com/tiki-download\_file.php?fileId=47