TIM 105/205, LECTURE # 1 (9/26/13)

Agenda :

1. Structure ("Logic") of the course

2. Course Overview / Operation

3. Technology Domains

4. Problem— Solving

5. HW # 1

6. Project / Teams

Information
TIM 101 (MOT Seminar)

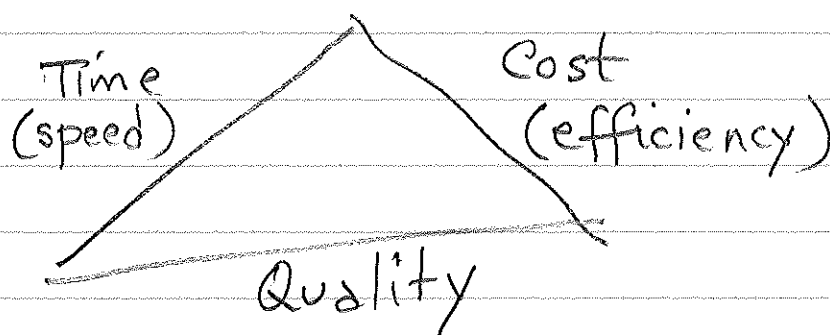# 1. STRUCTURE of the Course

Motivation

1. In today's global, highly competitive environment, in order for a product to be successful (be profitable, gain market share, ...), the technology company needs to develop

   (a) a high quality product (because customers are more demanding, competition is more intense, ...)

   (b) rapidly

   (c) at low cost

   These are 3 conflicting requirements:

   Time (speed)   Cost (efficiency)

                   Quality

2. In addition, the technology company must successfully manage RISK
   (a) Technology (Product Dev) Risk
   (b) Commercialization (Market) Risk

3. Companies which can successfully manage RISK, and, at the same time, develop high-quality products, rapidly, and at low cost are called FAST CYCLE competitors

   Examples: Toyota, Intel, Microsoft, Google, Samsung, Apple, Cisco, Seagate
   (IBM)

4. The objective of this course, TIM 105/205, is to provide the building blocks, and a framework (or methodology) integrating these blocks, in order to be a fast-cycle competitor.

TECHNOLOGY DOMAINS

IT
- Computer Networks (Cisco)
- Computer Architecture (INTEL)
- Operating systems (Microsoft)
- Application software (Microsoft, IBM,)
- Consumer Electronics (cell-phones, laptops, video-game consoles)

Complex Problems (the type we

address in TTM 105/205)

Two examples:
- What technologies and products should company X (e.g. Intel, Microsoft) develop during the next 1-3 years?

- How should incoming, real-time customer data ("Big-Data") be used to design better products

    - more customer centric
    - more reliable
    - less expensive

To solve complex problems, we need a systematic, structured problem-solving process,

Structured Problem-Solving

Key steps

1. Define the (real) problem

2. Plan the approach

3. Execute or Implement the plan

$$\Rightarrow \text{Results}$$

4. Check your results

5. Learn and Generalize

See handout for details

Terminology

PRODUCT:

Narrow sense : car, shoes, pencil,

Broader sense ; as in GDP
(Gross Domestic Product)

SPECTRUM (of offering)	Example (Physical Fitness)	TIM 105/205
Advice	Book on running	obvious
Product (narrow)	running shoes, free weights	Tools : HOQ, FS, ...structured Problem-solving
SOLUTION	Gym	MDC Framework
SERVICES	Personal Trainer	The entire course
Experience	Health Spa	Examination; Team Project