

**AY2025-2026 Semester I**

**IE5121**

**Quality Planning and Management**

**Prof Goh Thong Ngee**

Semester I, AY2025-2026



*In failures of existing goods or services...*

***Is there TECHNOLOGY?  
Is there INNOVATION?***

## **Management of Technology and Innovation (MOTI)**

The very first sentences in the introduction of the MOTI MSc program on the website of the Industrial Systems Engineering and Management Department:

How do companies and organizations gain *sustainable* competitive advantage through technology and innovation?

How do companies and organizations create, capture and deliver *value* through technology?

These are the fundamental questions we seek to address in the Master of Science in Management of Technology and Innovation (MOTI) program

*Inevitably the answer has to contain this word:*

**QUALITY**

## Why is Quality important?

- “Flash in the pan”? (One-off) Success in research laboratories or prototype design is no guarantee for demonstrable and sustained performance in the real world
- “The proof of the pudding is in the eating”: only when the product of technology and innovation is accepted by the market that success can be assured
- The most important requirement for a product to survive and thrive in a market is **QUALITY**

## What is QUALITY?



*All too late!*

INSPECTION CHECKLIST	
Inspector Name: _____	
Inspector Organisation: _____	
Inspector Phone: _____	
Date of Inspection: _____	
Type: _____	
Volume: _____	
<b>B. Water Reservoir / Water Handling</b>	
1. Reservoir has not been used to transport fluids other than potable water (e.g. chemicals, sewage, fuel, non-potable water)?	Y <input type="checkbox"/> N <input type="checkbox"/>
2. Reservoir interior generally clean, free from mould, scum and sediment?	Y <input type="checkbox"/> N <input type="checkbox"/>
3. All openings and filling hatches adequately sealed with tight fitting cover and gasket to prevent ingress of rainwater, insects, birds, animals, dust?	Y <input type="checkbox"/> N <input type="checkbox"/>
4. Reservoir free from visible cracks and leaks (e.g. when filled there are no leaks)?	Y <input type="checkbox"/> N <input type="checkbox"/>
5. All hoses and nozzles constructed from food grade (e.g. brass, stainless steel, plastic, polyethylene) materials and clean?	Y <input type="checkbox"/> N <input type="checkbox"/>
6. Hoses capped and stored in a clean, sealed compartment when not in use?	Y <input type="checkbox"/> N <input type="checkbox"/>
7. Pump, motor and housing made from food grade material and manufacturer's product data demonstrates it is suitable for pumping potable drinking water?	Y <input type="checkbox"/> N <input type="checkbox"/>
8. Reservoir and hoses have been shock chlorinated according to UNHCR procedures (see 8.2.4.2.2.2) within past month?	Y <input type="checkbox"/> N <input type="checkbox"/>
9. Reservoir free of slime residual at least 1.0mg/l?	Y <input type="checkbox"/> N <input type="checkbox"/>
10. Water reservoir is clearly labeled as "DRINKING WATER ONLY"?	Y <input type="checkbox"/> N <input type="checkbox"/>
<b>C. Vehicle Documentation and Permits</b>	
1. Vehicle has up to date Ministry of Transport road worthiness certificate?	Y <input type="checkbox"/> N <input type="checkbox"/>
2. Vehicle has up to date insurance (damage to property, injury, loss of life)?	Y <input type="checkbox"/> N <input type="checkbox"/>
3. Vehicle has permits, licenses and approvals to legally truck water (if required)?	Y <input type="checkbox"/> N <input type="checkbox"/>
Signature of Inspector: _____ Date: _____ (Print name and sign)	
Signature of Contractor: _____ Date: _____ (Print name and sign)	

# How to achieve Quality Excellence?

**Quality** does not happen by itself...

Quality of product has to be **planned** in the beginning  
and **managed** constantly thereafter

IE 5121

## Quality Planning and Management

*A course emphasizing:*

- An active rather than the traditional defensive and passive approach to Quality
- Aspects of improvement and innovation rather than traditional management techniques
- Strategic approaches to competitiveness rather than application of isolated tools

*Instructor:* Prof T N Goh, ISEM Dept

- ASQ (American Society for Quality) Eugene L Grant Medalist
- ASQ Statistics Division William G Hunter Award Winner
- ANQ (Asian Network for Quality) Ishikawa-Kano Gold Medalist



## Coverage of this course

- Roles of technology and innovation in a VUCA world:

***manufacturing and service***

- Methodologies in **3P's**:

***Principles, Programs, and Procedures***

DESIGN ENGINEERING

## IE5121 Quality Planning and Management

All enterprises in this VUCA world stand or fall, ultimately, on QUALITY. This course covers the subject via the 3P's of Quality Planning and Management in manufacturing and service: *Principles, Programs, and Procedures*. The emphasis of the course is generic concepts and practical techniques, i.e. the discussion is generally non-industry specific. There is no pre-requisite for this course. Student assessment will be based on class participation, a mid-term test, a course project, and a final examination.