Modules Covered In Class 1

1. Continuous Improvement/Quality Philosophies and Methodologies
2. LEAN/Six Sigma Projects
3. Voice of the Customer

W. Edwards Deming

- Electrical Engineer, Mathematician & Physicist
- Developed sampling statistics used by US Department of Census and Bureau of Labor Statistics
- Worked with Japanese industries after WWII
- Statistical process control

Total Quality Management (TQM)

Key concepts:
1. Quality is defined by customer requirements
2. Management is directly responsible for quality improvement
3. Increased quality comes from systematic analysis & improvement of processes
4. Quality improvement is a continuous effort
ISO

International Organization for Standardization

1. Customer focus
2. Leadership
3. Engagement of people
4. Process approach
5. Improvement
6. Evidence-based decision making
7. Relationship management

LEAN

Five Basic Principles
1. Value of products and services to the customer
2. Eliminating waste in the value stream
3. Improve the flow of the process
4. Build a pull system to ensure you make things just in time
5. Perfect your service and product

8 Wastes - Defects

Product or service that doesn't meet customer specifications
8 Wastes – Overproduction

Producing more of a product than can be consumed at the time. Making too much or making it too early. Or offering services more frequently than necessary.

Excess Processing

Processes designed or operated in a way that use more space, resources, and/or time than is required.

8 Wastes - Waiting

Whenever goods or skills are not being utilized to deliver product or service.
8 Wastes – Non-Utilized Talent
Failure to train personnel or failure to utilize skills of existing personnel.

8 Wastes - Inventory
Having more inventory on hand than is needed

8 Wastes - Transportation
Unnecessary movement of products between processes.
### 8 Wastes - Motion

Unnecessary movement of people

### Six Sigma

**Methodology (DMAIC)**
- Define
- Measure
- Analyze
- Improve
- Control

**Five Key Principles:**
1. Focus on **customer** requirements
2. Measure and analyze outputs to find **variations**
3. Be **proactive** in eliminating variation
4. Involve the **people doing the work** in the improvements
5. Be **thorough and flexible**
Continuous Improvement

What do they all have in common?

Projects - DMAIC

Define
- Voice of the Customer
- Project Charter (problem statement, improvement goals, milestones)
- High Level Map

Measure
- Gather data to measure current state
- Detailed process map

Analyze
- Process & Data analysis
- Identify root causes of gaps/problems

Improve
- Brainstorm solutions to eliminate or remediate root causes
- Pilot change
- Measure effectiveness of change

Control
- Sustain improvement with SOP, training, communications, etc.

Projects - 5S

Standardize
- Identify how the workspace should be laid out. What is necessary in the ideal layout?
- Are there multiple spaces that should be identical?

Sort
- Go through materials & equipment to identify what needs to remain based upon the standard design.
- Label unnecessary items “Surplus” and handle accordingly

Shine
- Clean up the workspace

Set in Order
- Label where things belong (small label tags, tape outlines for tools, signs, etc.)
- Place items where they belong

Sustain
- Communicate with others so they understand importance of maintaining
- Devote time consistently to go through the space to sort, clean & set in order. Assign responsibility for maintenance and continuous evaluation
Identifying the LEAN/Six Sigma Team

<table>
<thead>
<tr>
<th>Team Roles</th>
<th>Team Responsibility</th>
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</thead>
</table>
| Black Belt     | • Six Sigma strategy & plan roll out  
• Execute projects  
• Help & guide team  
• Mentor Green Belts |
| Green Belt     | • Project execution  
• Team & Project structuring  
• Lead group through execution of specific tools |
| Sponsor        | • Business leadership  
• Pushing past roadblocks |
| Process Owner  | • Attend training  
• Visibly support project  
• Set clear scope  
• Set clear expectations  
• Challenge experts on their facts and knowledge  
• Interact with team regularly  
• Participate in problem solving  
• Make decisions  
• Allocate resources  
• Ensure results are sustainable |

Project Charter

Problem Statement
What’s wrong? How are customer needs not being met? How frequently are needs not met?

Goal Statement
What do we hope to accomplish by doing this project? How will we improve? What improvements will customers see?

Scope
1st Process Step:  
Last Process Step:  
In Scope:  
Out of Scope:

Business Case & Benefits
What is the business reason for the project? Why is it worth doing now? What benefits will the business see?

Project Milestones
What steps will we take through each phase? When do we plan to complete them?

Project Team
Sponsor:  
Green Belt(s):  
Black Belt:  
Process Owner:  

Project Charter Exercise

Get into your project groups. Take some time to attempt to fill in the blanks for your charter.

Once you’ve gotten as much information as possible in, talk with your team about the plan for filling in the rest. Who do you need to meet with? When? Who’s responsible for setting up those meetings?
**Voice of the Customer**

<table>
<thead>
<tr>
<th>Segment</th>
<th>Definition</th>
<th>Expectations</th>
<th>Shared expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clients</td>
<td>Individuals or entities who fund the services or programs provided by the City</td>
<td>Fiscal responsibility, Program effectiveness, Actions reflect policy intentions</td>
<td>Quality, Responsiveness, Transparency, Accuracy, Consistency, Respect, Timeliness</td>
</tr>
<tr>
<td>Compliers</td>
<td>Those individuals or entities on the receiving end of enforcement activities</td>
<td>Consistent application of rules, Fair penalties</td>
<td></td>
</tr>
<tr>
<td>Consumers</td>
<td>The end users of a City program, service, or information</td>
<td>Flexibility, User-friendly services</td>
<td></td>
</tr>
<tr>
<td>Constituents</td>
<td>The individuals and groups who have some vested interest in the work done by the City</td>
<td>Program focus reflects their particular political or programmatic point of view</td>
<td></td>
</tr>
</tbody>
</table>

**SIPOC**

- **Suppliers**: Who provides each input?
- **Inputs**: What goes into the process?
- **Process**: High level map, START
- **Outputs**: What comes out? Data, Product, Service, Guidance, etc.
- **Customers**: Who uses each output?

**Obtaining the VOC**

- Go to Gemba
  - Observe the process from their vantage point
- Interviews
  - Attempt to randomly select customers to interview
  - Use the same format and questions with every interview
- Surveys
  - Ask questions that will provide actionable answers.
VOC Exercise

Get into your project teams. Discuss with your team, who your customers are and the best way to get the VOC. What are the pros and cons of each:

- Gemba
- Survey
- Interview

If you’re doing a 5S, discuss what’s the best strategy for understanding intended & current use of the space. Does the space need to be re-designed? If so, who’s responsible for that creating and approving the design?