



**FAKULTI KEJURUTERAAN PEMBUATAN
UNIVERSITI TEKNIKAL MALAYSIA MELAKA**

PRODUCTION PLANNING AND CONTROL

BMFP 4513

CASE STUDY

SESI 2 2009/2010

LEAN SIX SIGMA

“Making Leather Leaner: The Garden State Tanning (GST) Story”

GST makes leather from cow hides. Quality is critical as this product purchased exclusively for its esthetic quality. Each hide is unique and contains some defects. When GST was fortunate enough to get a large order from Lexus, they quickly found out they could not keep up with the order quantity and before long were several months behind in fulfilling orders. This was devastating. The result was expensive air freight deliveries overseas to Japan and unhappy customer.

Hides manufacturing used a large batch operations consisting of cutters, packers, inspectors, etc. Cutting and packing tanned leather for shipment takes 10 days. Quality defect was 1 percent. Loss-time accidents were 242 per year.

Steps on the Production of Leather:

1. Removal of hair from the hide.
2. Tanning (Chrome) of the rawhide to prevent decay.
3. Splitting the hide horizontally to provide a ‘top grain’ and a ‘split’ hide.
4. Shaving the hide to tstahe correct thickness (usually 0.9-1.4 mm)
5. Retanning of the top grain hide to color the hide substance as well as provide a soft malleable product.
6. Finishing (painting) of the top surface of the hide.
7. Cutting the hide into pieces to be sewn into seat covers.

Most tanneries also employ other unit operation such as staking and milling, which stretch and soften the hide, as well as embossing of the hides at various stages of production.

The tanning of leather today, although greatly mechanized compared to past methods, still requires considerable labor and multiple handling steps, which in the tanning industry has led to much inefficiency and high costs.

Instructions:

1. Work in a group of 3-4 students.
2. **Evaluate** the GST problem above and **discuss** ways GST can utilize Lean Six Sigma methodology in order to achieve the following objectives:
 - i. The highest quality leather
 - ii. At the lowest possible cost
 - iii. By Just-In-Time principles
 - iv. Within a safe work environment
3. Use the formal report format to prepare your case study report. Your report will be evaluated based on the scheme below:

Abstract	5%
Introduction	10%
Result	30%
Discussion	30%
Recommendation	10%
Conclusion	10%
References	5%
4. Your report should also include how you organize your team to conduct the case study and important lessons your group has gained from this work.
5. This case study is due 1 week from the date it is given to your group by your lecturer.