



精實企業管理課程簡介 Lean Enterprise Management

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逢甲大學 | 工業工程與系統管理學系 | 王逸琦副教授



Course Description and Text

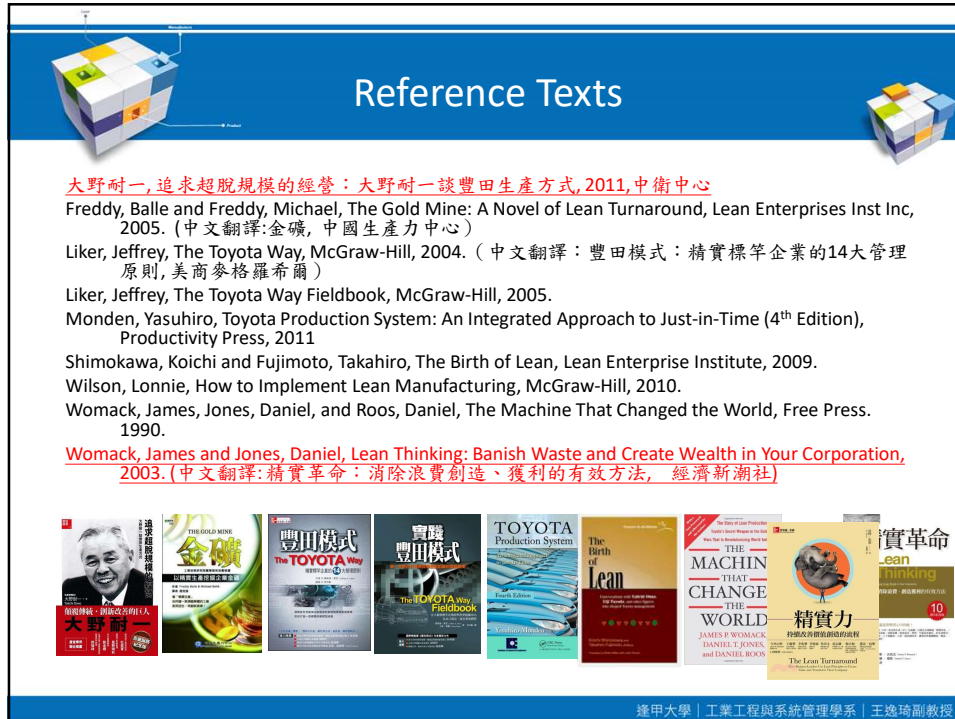


Course Objective: The aims of this course are to introduce lean techniques for improving operations and management of enterprise systems and to provide value stream mapping tool for diagnosing deficiency for an enterprise. In this course, some case studies and project reports will be provided. Students can expect to learn related knowledge and skill after they complete this course.

Text: Toshiko, Narusawa (成沢俊子), Kaizen Express, Lean Enterprise Institute, 2009.


(中文翻譯: 大家來學TPS 豐田改善直達車, 2009, 中衛發展中心.)

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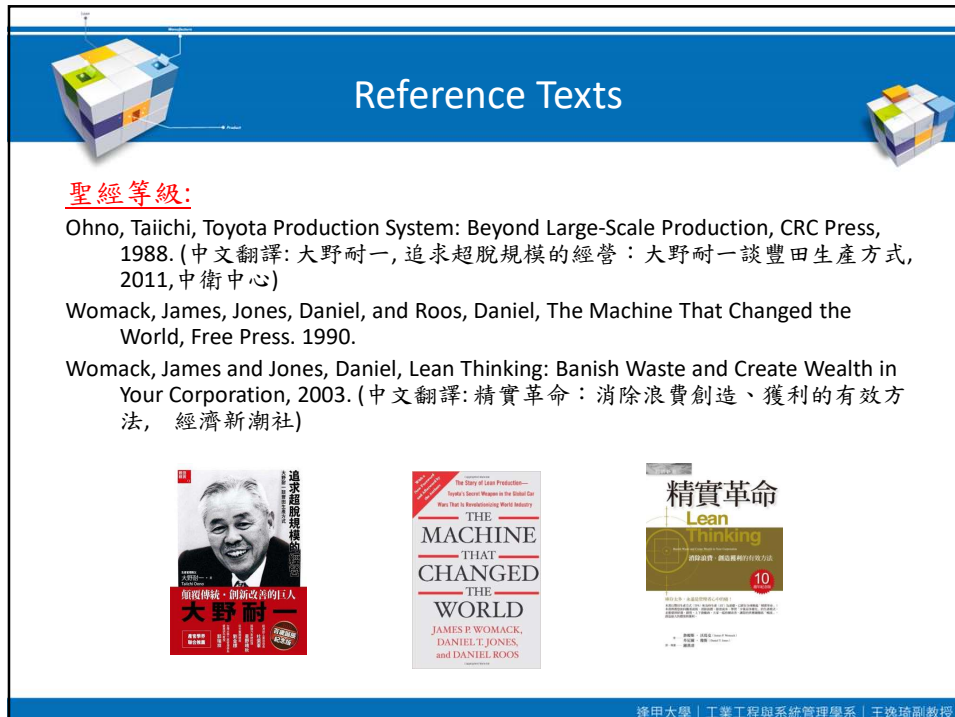


Reference Texts

大野耐一, 追求超脫規模的經營：大野耐一談豐田生產方式, 2011, 中衛中心
 Freddy, Balte and Freddy, Michael, The Gold Mine: A Novel of Lean Turnaround, Lean Enterprises Inst Inc, 2005. (中文翻譯: 金礦, 中國生產力中心)
 Liker, Jeffrey, The Toyota Way, McGraw-Hill, 2004. (中文翻譯: 豐田模式: 精實標竿企業的14大管理原則, 美商麥格羅希爾)
 Liker, Jeffrey, The Toyota Way Fieldbook, McGraw-Hill, 2005.
 Monden, Yasuhiro, Toyota Production System: An Integrated Approach to Just-in-Time (4th Edition), Productivity Press, 2011
 Shimokawa, Koichi and Fujimoto, Takahiro, The Birth of Lean, Lean Enterprise Institute, 2009.
 Wilson, Lonnie, How to Implement Lean Manufacturing, McGraw-Hill, 2010.
 Womack, James, Jones, Daniel, and Roos, Daniel, The Machine That Changed the World, Free Press. 1990.
Womack, James and Jones, Daniel, Lean Thinking: Banish Waste and Create Wealth in Your Corporation, 2003. (中文翻譯: 精實革命: 消除浪費創造、獲利的有效方法, 經濟新潮社)

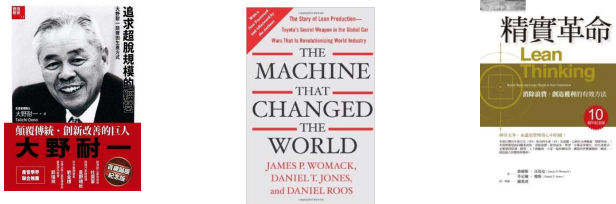


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Reference Texts

聖經等級:
 Ohno, Taiichi, Toyota Production System: Beyond Large-Scale Production, CRC Press, 1988. (中文翻譯: 大野耐一, 追求超脫規模的經營：大野耐一談豐田生產方式, 2011, 中衛中心)
 Womack, James, Jones, Daniel, and Roos, Daniel, The Machine That Changed the World, Free Press. 1990.
 Womack, James and Jones, Daniel, Lean Thinking: Banish Waste and Create Wealth in Your Corporation, 2003. (中文翻譯: 精實革命: 消除浪費創造、獲利的有效方法, 經濟新潮社)



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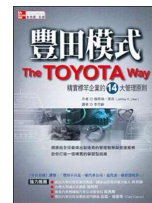
Reference Texts

經理人/管理者必讀:

Byrne, Art, The Lean Turnaround: How Business Leaders Use Lean Principles to Create Value and Transform Their Company, McGraw-Hill Education, 2012. (中文翻譯: 精實力: 持續改善價值創造的流程, 美商麥格羅希爾)

Harada, Takehiko, Management Lessons from Taiichi Ohno: What Every Leader Can Learn from the Man who Invented the Toyota Production System, McGraw-Hill Education, 2015. (中文翻譯: 流的傳承, 美商麥格羅希爾)

Liker, Jeffrey, The Toyota Way, McGraw-Hill, 2004. (中文翻譯: 豐田模式: 精實標竿企業的14大管理原則, 美商麥格羅希爾)



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Reference Texts

劇本故事型

Freddy, Balle and Freddy, Michael, The Gold Mine: A Novel of Lean Turnaround, Lean Enterprises Inst Inc, 2005. (中文翻譯: 金礦, 中國生產力中心)

Goldratt, Eliyahu and Cox, Jeff, The Goal: A Process of Ongoing Improvement, North River Press, 2014 (中文翻譯: 目標: 簡單有效的常識管理, 天下文化)

案例型

Imai, Masaaki, Gemba Kaizen, Gemba Kaizen: A Commonsense Approach to a Continuous Improvement Strategy, McGraw-Hill Education, 2012. (中文翻譯: 現場改善, 美商麥格羅希爾)

Kenny, Charles, Transforming Health Care: Virginia Mason Medical Center's Pursuit of the Perfect Patient Experience, CRC Press, 2010. (中文翻譯: 維梅醫學中心的精實變革之路, 中衛中心)

Shimokawa, Koichi and Fujimoto, Takahiro, The Birth of Lean, Lean Enterprise Institute, 2009.

教科書型

Liker, Jeffrey, The Toyota Way Fieldbook, McGraw-Hill, 2005. (中文翻譯: 實踐豐田模式: 第一本教你打造精實學習型組織的十站指南, 美商麥格羅希爾)

Monden, Yasuhiro, Toyota Production System: An Integrated Approach to Just-in-Time (4th Edition), Productivity Press, 2011

Shingo, Shigeo, A Study of the Toyota Production System From an Industrial Engineering Viewpoint, CRC Press, 1989.

Wilson, Lonnie, How to Implement Lean Manufacturing, McGraw-Hill, 2010.



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Reference Webpages



Lean Enterprise Institute (www.lean.org)
 Society of Manufacturing Engineer (www.sme.org/)
 The Lean Enterprise Academy (www.leanuk.org/)
 台灣精實企業系統學會 (www.leanenterprisesystems.org/)
 豐田和泰汽車精實顧問教育 (lean.hotaimotor.com.tw/)
 財團法人中衛中心 (www.csd.org.tw/)

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Course Grading/Evaluation



Class Rules:


No Mid-term and Final Exams

4 absences make you **fail**.

Grading:

Reading Report (大野耐一談豐田生產方式) – Individual report	25%
Reading Report (精實革命) – Individual report	25%
Case Study (現場改善) - Team work	20%
Assignments	20%
Class Participation	10%

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Course Outline



Week	Date	Topic/Event
1		Introduction – Lean Concepts
2		Mass Production
3		History of Toyota Production System
4		Identify Wastes
5		Flow and Wastes Lean Tools: Value Stream Mapping
6		Lean Tools: 5S, Standardized Work
7		No Lectures
8		Lean Tools: Production Leveling (Heijunka) Reading report due
9		Pull Systems (Just in Time)
10		Lean Tools: Quick Changeover, Error Proofing, Visual Factory
11		Lean Tools: Gemba Kaizen
12		Lean Tools: Gemba Kaizen
13		Case Study
14		Case Study Presentation Reading report due
15		Case Study Presentation

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何謂精實？




- 1980美國MIT國際汽車共同研究計畫(International Motor Vehicle Program, IMVP)以TPS為主要研究方向，歸納出精實(Lean)生產方式為TPS的精髓。
- MIT「日本專案計畫」兩位研究教授James Womack與Daniel Jones 與 Daniel Roos，在研究以日本豐田汽車(TOYOTA)為首的少數日本企業管理模式後，於1990年出版《改變世界的機器》(The Machine That Changed the World)一書，書中首次出現「精實生產」(**Lean Production**)，將Lean的意涵引用到企業經營，TPS始聞名於世。
- 今日，Lean Production 已由過去影響工廠內的加工作業，被推廣至產品開發、供應系統的整合、顧客關係、以至完整的精實企業(**Lean Enterprise**)。

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So What is “Lean” exactly?

- What is lean?
 - Waste Reduction
 - Waste v.s. Value (In general, only 10~30% of work is value-adding)
- Lean: Elimination of Non-Value-Added activities (i.e. waste)

➡ Lean can help us **do more with less**.




The pie chart is divided into three segments: a small green segment labeled 'Value added' with the word 'Maximize' above it; a blue segment labeled 'Non-value added - needed' with the word 'Minimize' above it; and a large red segment labeled 'Non-value added - waste' with the word 'Eliminate' written across it in a stylized font.

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Lean Thinking

- To become “Lean”
 - Strive to eliminate waste
 - Waste is non-value-added resources/activities
 - ➡ (value is defined by your CUSTOMERS)
- What’s the “value” you should be providing?



*Damn...
I work so hard! Don't they know?*

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Value for customers



What would you be willing to pay for when ordering a hamburger?

	Value adding	Non-Value adding	Necessary Non-value adding
Meat	✓		
Buns	✓		
Electricity to run ovens	✓		
Electricity to run outdoor lights left on accidentally		✓	
Cost of hamburgers not sold		✓	
Persons paid to inspect take-out orders		✓	
Cost of cleaning			✓
Cost of menus			✓

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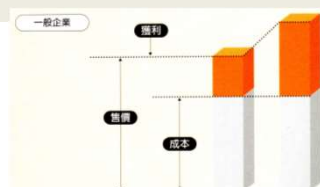
Making a Profit ?



成本主義

$$\text{Cost} + \text{Profit} = \text{Price}$$

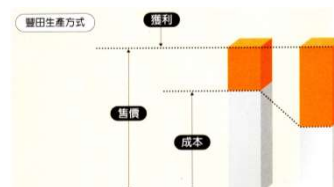
獲利方式：提升售價



售價由市場決定

$$\text{Profit} = \text{Price} - \text{Cost}$$

獲利方式：降低成本



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What is your philosophy of efficiency? 「能率是什麼」?

Apparent Efficiency vs. True Efficiency
表面能率與真能率

100 units!  **顧客**

Apparent Efficiency 表面能率	Current 現在	True Efficiency 真能率
120 units (個)	100 units (個)	100 units (個)
		
 × 10 operators (人)	 × 10 operators (人)	 × 8 operators (人)

Local Efficiency vs. Total Productivity
局部能率與全體效率



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建構豐田式生產系統



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