OPM 7180 (G01) (3.0 CH)
SUSTAINABLE LEAN MANAGEMENT
SUMMER 2021

INSTRUCTOR

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Office Hours: By appointment
Class Time: Wednesday 18:15 – 21:30

COURSE DESCRIPTION

Sustainable Lean Management will provide students with a basic understanding of the components of Sustainable Lean Management in the context of Profit, People and Planet (the triple bottom line) and the opportunity to practically apply the principles, methods and tools of Sustainable Lean Management to real problems. Sustainable Lean Management, at its core, is about systematically identifying the strategic problems of an organization and methodically solving those problems while simultaneously growing and developing the potential of people to the benefit of all stakeholders of the enterprise. The course will provide:

- a brief background and history of Lean (Toyota Production System (TPS)) and the triple bottom line;
- an overview of the grounding principles and philosophies of Sustainable Lean Management;
- an introduction to the people value stream and the product value stream;
- an overview of the 8 wastes and the practical application of waste elimination;
- an overview and the application of fact based A3 Problem solving utilizing the PDCA methodology (Plan-Do-Check-Act);
- An introduction to lean tools and techniques used to surface and solve problems (i.e. 5S, SMED, Standard Work, Flowcharting, 7QC tools, mistake proofing, etc.)
- An introduction to Policy Management (Hoshin Kanri) Strategy Deployment methods integrating sustainability strategies;
- An introduction to strategies for implementing Sustainable Lean Management within organizations; factors to consider (critical success factors and potential pitfalls).

The course will be a combination of classroom lecture and discussion, case study and "real world learn by doing" application.

AACSB Assurance of Learning Goals and Objectives.

The Asper School of Business is proudly accredited by AACSB. Accreditation requires a process of continuous improvement for the School and our students. Part of "student improvement" is ensuring that students graduate with the knowledge and skills they need to succeed in their careers. To do so, the Asper School has set the **learning goals and objectives** listed below for the **MBA Program**. The checked goal(s) and objective(s) will be addressed in this course and done so by means of the items listed next to the checkmark.

	Goals and Objectives in the MBA Program	**Goals and Objectives Addressed in this Course**	**Course Item(s) Relevant to these Goals and Objectives**
1	**Strategic Thinking** Students will think critically and creatively about solutions to organizational problems, considering short-term and long-term goals, resources, risks, and opportunities.	✔	Strategy Management/Hoshin Kanri Implementing Sustainable Management Strategies
	A. Students are able to identify situations where strategic thinking is necessary.	✔	
	B. Students are able to identify different strategies.	✔	
	C. Students are able to perform a basic strategic analysis.	✔	
	D. Students are able to recommend strategic alternatives and their implementations.	✔	
2	**Global Perspective** Students will adopt a global mindset in considering organizational decisions.	✔	History of Lean and the challenges of implementing Lean in different countries/cultures
	A. Students have an awareness of global diversity, and multicultural awareness.	✔	
	B. Students have an awareness of different global perspectives.	✔	
	C. Students have been exposed to global business environments through course materials	✔	
3	**Ethical Mindset** Students will consider ethical and moral issues when analyzing and recommending solutions to organizational problems.	✔	Implementing Sustainable strategies Lean's impact on Safety & morale plus the "people value stream".
	A. Students demonstrate an understanding of the responsibility of business in society.	✔	
	B. Students demonstrate an understanding of ethical decision making.	✔	
	C. Students demonstrate moral development in ethical decision making.	✔	
	D. Students demonstrate an understanding of the responsibilities of a leader's role as it relates to ethics.	✔	
4	**Quantitative and Financial Proficiency** Students will demonstrate the ability to approach organizational issues using quantitative and financial analysis.	✔	Introduction to Scientific Problem Solving (PDCA methodology)
	A. Students are able to identify that a problem containing a quantitative aspect exists.	✔	
	B. Students are able to apply financial methodologies in the answering of business questions.	✔	
	C. Students are able to demonstrate a basic financial proficiency in understanding the role and flow of money in an organization.		
	D. Students are able to interpret the results of a financial analysis.	✔	Introduction to Scientific Problem Solving (PDCA methodology)

COURSE OBJECTIVES

On course completion, you should be able to:

- Understand the history, philosophy and principles of Sustainable Lean Management.
- Understand the 8 wastes and take action to eliminate waste.
- Apply the fact based scientific problem solving method to address a "real" process problem.
- Apply basic analytical and improvement methods and tools (i.e. 7 QC Tools, Process Mapping, 5S, Standard Work, TWI, etc.) to analyze data and to improve a process.
- Understand the Hoshin Kanri Policy/Strategy Deployment methodology.
- Understand basic strategies and critical success factors for successful Sustainable Lean Management Implementations.

COURSE MATERIALS

1. "The Toyota Way to Lean Leadership" Jeffrey Liker and Gary Convis. (Bookstore)
2. "The New Sustainability Advantage" Bob Willard
3. Problem Solving - Yellow Belt (Electronic). (Posted on UM Learn).
4. Lecture Slides – Posted to UM Learn no later than 24 hours prior to the scheduled lecture slot.
5. OPM 7180 Reading Package (Bookstore)

COURSE ASSESSMENT

Student progress will be assessed through:

- Participation 20%
- Three (3) mini tests 15%
- Three (3) Individual Assignments 15%
- One Team Project 20%
- Final Exam 30%

Participation:

- Class participation will be assessed on a per class basis as follows:
  - 0 points – Absent
  - 1 point – no active participation;
  - 2 points - answers questions posed by others but does not actively contribute to the class discussion without being called upon;
  - 4 points – actively contributes to class discussion by raising issues or contributing insight related to the discussion

Mini-Tests:

- The course will contain three (3) Mini-tests as per the tentative course schedule below.
- Mini-tests will be distributed at the beginning of the assigned classes.
- There will be no make-up dates provided for missed mini-tests.

Individual Assignments:

- The course will contain three (3) individual assignments that will be assigned in class and will be due approximately one week following the assignment (per the tentative course schedule below).
- Late assignments will be docked 10% per day beyond the specified due date unless an alternate due date is arranged in advance due to extenuating circumstances.

Team Project:

- The application of the Scientific Problem solving method is a core manager/leadership competence for Sustainable Lean Management. A team project applied to a "real" problem will enable the building of that competence.
- Details on this project will be provided during the first week of the course.

Final Exam:

- The Final Exam will be open book, open notes. The exam will be held at the University scheduled time and location (details will be provided when available).

Final grades will be assigned as follows;

Cumulative Marks	Grade	GPA	Performance
90-100	A+	4.5	Excellent
80-89.99	A	4.0	Very Good
75-79.99	B+	3.5	Good
70-74.99	B	3.0	Satisfactory
65-69.99	C+	2.5	Marginal
60-64.99	C	2.0	Unsatisfactory
50-59.99	D	1.0	Unsatisfactory
49.99 and below	F	0.0	Unsatisfactory

NOTE: Class attendance is required. Missing more than 20% of this course due to absences may result in a failing grade. It is your responsibility to inform your professor in advance of your absence and the reason for it (medical documentation or employer note if away for a work commitment) is required. The professor decides how to deal with the impact of missed classes on your final grade.

COURSE SCHEDULE

The following is a tentative course schedule that could be subject to change at the instructor's discretion.

Lecture 1:

Material Covered:

- Introductions
- Course Outline review
- History and Introduction to Sustainable Lean Management
- Principles of Lean and the 8 Wastes
- Chartering

Required Reading:

1) Course Outline
2) The Toyota Way to Lean Leadership (End of Chapter 2 Inclusive).
3) The New Sustainability Advantage Chapter – Page 1 – 34 inclusive
4) Decoding the DNA of the Toyota Production System – Reading Package.

Class Activities:

- Introductions
- Material Discussion
    - What is the relationship between Lean and Sustainability?
    - What is meant by "Building the Sustainable Enterprise"?
- Chartering/Team Set-up
- Flow demonstration Exercise

Assignment

- Team Project
    - Set-up - Select an issue and process to improve
    - Execute the Process Improvement following Method.

Lecture 2:

Material Covered:

- Problem Solving:
    - Understand/Characterize the Current Process
    - Value Stream Mapping
    - Improve/Resolution Methods

Required Reading:

1) Learning to Lead at Toyota – Reading Package
2) The Toyota Way to Continuous Improvement – Chapter 15 – Continuous Improvement as a way of Life.
3) Basic Stability is Basic to Lean Manufacturing Success – Reading Package

Reference Material:

1) Problem Solving Yellow Belt (End of Characterize the Process & Improve) - D2L

Class Activities:

- Characterizing the Process/Flowcharting/Value Stream Mapping Exercise
- Process Data Illustration (Quincunx)
- Material Discussions

Assignment:

- Individual Assignment # 1 – Waste Assignment
- Team Project Set-up – Understand the Current Situation

Lecture 3:

Material Covered:

- 7 Step Problem Solving Model (PDCA)
- Introduction to basic tools (5S, Basic 7 QC tools)

Required Reading:

1) The Toyota Way to Lean Leadership – Chapter 3
2) Beyond Toyota: How to Root out Waste and Pursue Perfection – Reading Package

Reference Material:

1) Problem Solving - Yellow Belt (Steps 1-2) – D2L

Class Activities:

- Mini-test #1
- Material Discussion
- Application Exercise

Assignment:

- Team Project Work

Deliverables

- None

Lecture 4:

Material Covered:

- The People Value Stream

Required Reading:

1) Toyota Culture – The People Value Stream – Chapter 18 – Developing your Culture of Quality People for Long Term Mutual Prosperity.
2) Toyota Kata Chapter 9 – Reading Package

3) Human Resource Development in Toyota Culture – Reading Package
4) The New Sustainability Advantage – Pages 95 – 124 inclusive (Benefit 5 & 6)

Class Activities:

- Article Discussions
- Compare/contrast Toyota's approach to people development versus traditional approaches.
- How does Sustainability relate to employee engagement?

Assignments:

- Team Project Work

Deliverables:

- None

Lecture 5:

Material Covered:

- 7 Step Problem Solving Model Steps 3-5 inclusive
- 7 QC Tools and Lean Tools (5S, etc.)

Required Reading:

1) NASCAR: Every Second Counts – Helping win from the Pits – Reading Package

Reference Material:

1) Lean Six Sigma Yellow Belt Manual (End of Study the Results)

Class Activities:

- Article Discussions
- Application Exercise

Assignment:

- Individual Assignment # 2 – 5S
- Team Project Work

Deliverables:

- None

Lecture 6:

Material Covered:

- 7 Step Problem Solving Model Steps 6-7 inclusive
- 7 QC Tools and Lean Tools

Required Reading:

1) Fast Company Article – Reading Package
2) Inside the Toyota Production System – Journal of Innovative Management – Reading Package

Reference Material:

1) Lean Six Sigma Yellow Belt Manual (End of Draw Conclusions)

Class Activities:

- Mini-test # 2
- Material Discussion
- Application Exercise

Assignment:

- Team Project Work

Deliverables

- None

Lecture 7:

Material Covered:

- Daily Management/Daily Kaizen
- Sustainability

Required Reading:

1) The Toyota Way to Lean Leadership (Chapter 4)
2) Case Study – The Toyota Way to Continuous Improvement – Chapter 6 – When Organic Meets Mechanistic: Lean Overhaul and Repair of Ships
3) Chapter 4 – Daily Management the TQM Way – Steps for Daily Management in a Process
4) The New Sustainability Advantage – page 37 – 92 inclusive (Benefits 1 – 4)

Class Activities:

- Team Project Presentation
- Case, Article and Reading Discussion

Assignment:

- Team Project Work

Deliverables:

- Individual Assignment #1 – Waste

Lecture 8:

Required Reading:

1) Art of Lean – Summary notes from Art Smalley Interview with Mr. Isao Kato – Reading Package
2) Why Standard Work is Not Standard: Training Within Industry Provides an Answer
3) St. Bernard Parrish

Class Activities:

- Mini test # 3

- Comprehensive review and discussion
- Material Discussions/Assignments:
- Team Project Work

Deliverables:
- None

Lecture 9:

Material Covered:
- Applied Sustainable Lean Leadership

Required Reading:
2) The Toyota Way to Lean Leadership (Chapter 7)
3) Chapter 20 – The Toyota Way Fieldbook - Leading the Change

Class Activities: - Site tour/Interviews (Sites TBD)

Assignments:
- Team Project Work
- Individual Assignment # 3
    - Site Tour Report (4-5 pages)

Deliverables:
- None

Lecture 10:

Material Covered:
- Hoshi Kanri
- Sustainable Lean Management:
    - Critical Success Factors
    - The stages of Enterprise Sustainability
    - Lessons from pitfalls

Required Reading:
1) The Toyota Way to Lean Leadership (Chapter 5-6 inclusive)
2) The New Sustainability Advantage Chapter – page 127 – 166 (Benefit 7)
3) Lean Dilemma – Choose System Principles or Management Accounting Controls – Not Both

Class Activities:
- Article Discussions
    - Compare/Contrast MBO & Hoshin Kanri
    - The challenges of integrating the triple bottom line.
- Dana Case discussion
- Course Review

Deliverables:

- Team Project Reports Due
- Individual Assignment #2 – 5s with evidence of Sustain
- Individual Assignment # 3 – Site Tour Report

ACADEMIC REGULATIONS AND STUDENT SERVICES

HUMAN ETHICS APPROVAL FOR DATA COLLECTION

As part of coursework, if you will be collecting data from people who are not students in this class, you must obtain Human Ethics approval from the UofM's Research Ethics Board (REB) prior to data collection. This applies to data collection such as surveys, interviews, focus groups, experiments, video recording, etc., where a respondent is solicited for participation.

If the entire class will be working on the same project, your instructor will apply for human ethics approval from the REB. If individuals or small groups of students will be working on different projects, it is the responsibility of the students to obtain approval (only one group member needs to apply). Your instructor will tell you whether s/he will be or you need to. When in doubt, please talk to your instructor.

Instructions and forms to apply for human ethics approval can be found at:
http://umanitoba.ca/research/orec/ethics/human_ethics_REB_forms_guidelines.html.
In most cases, you will be using the "Protocol Submission Form" which is under the "REB Forms - Fort Garry Campus" heading.

It can take up to six weeks to process human ethics applications and obtain approval. Therefore, plan early. Note that approval must be obtained prior to data collection and cannot be obtained during the data collection phase or retroactively. Violation can get you, your instructor, and the Asper School in serious trouble with the REB.

If you will be collecting data only from other students in the class, you do not need REB approval. If you have any questions, please contact humanethics@umanitoba.ca or your instructor.

UNCLAIMED ASSIGNMENT POLICY

Pursuant to the FIPPA Review Committee's approved recommendations of August 15, 2007, all unclaimed student assignments will become the property of the faculty and will be subject to destruction six months after the completion of any given academic term.

STUDENT SERVICES AND SUPPORTS

The University of Manitoba provides many different services that can enhance learning and provide support for a variety of academic and personal concerns. You are encouraged to visit the below websites to learn more about these services and supports. If you have any questions or concerns, please do not hesitate to contact your instructor or the Graduate Program Office.

For Information on…	**…follow this link**
Course Outlines, Year-at-a-Glance, Concentrations, Textbooks, VW Dates and Final Exams	MBA Course Information
Exam Rescheduling Policy - *Please refer to Missing a Test/Exam on page 18 of the MBA Student Handbook*	MBA Student Handbook
Help with research needs such as books, journals, sources of data, how to cite, and writing	Library Resources
Tutors, workshops, and resources to help you improve your learning, writing, time management, and test-taking skills	Writing and Learning Support
Support and advocacy for students with disabilities to help them in their academic work and progress	Student Accessibility Services
Copyright-related questions and resources to help you avoid plagiarism or intellectual property violations	Copyright Office
Student discipline bylaws, policies and procedures on academic integrity and misconduct, appeal procedures	Academic Integrity
Policies & procedures with respect to student discipline or misconduct, including academic integrity violations	Student Discipline
Students' rights & responsibilities, policies & procedures, and support services for academic or discipline concerns	Student Advocacy
Your rights and responsibilities as a student, in both academic and non-academic contexts	Your rights and responsibilities
Full range of medical services for any physical or mental health issues	University Health Service
Information on health topics, including physical/mental health, alcohol/substance use harms, and sexual assault	Health and Wellness
Any aspect of mental health, including anxiety, stress, depression, help with relationships or other life concerns, crisis services, and counselling.	Student Counselling Centre
Support services available for help regarding any aspect of student and campus life, especially safety issues	Student Support Case Management
Resources available on campus, for environmental, mental, physical, socio-cultural, and spiritual well-being	Live Well @ UofM
Help with any concerns of harassment, discrimination, or sexual assault	Respectful Work and Learning Environment
Concerns involving violence or threats, protocols for reporting, and how the university addresses them	Violent or Threatening Behaviour

ACADEMIC INTEGRITY

I.H. Asper School of Business, The University of Manitoba

It is critical to the reputation of the I. H. Asper School of Business and of our degrees that everyone associated with our faculty behaves with the highest academic integrity. As the faculty that helps create business and government leaders, we have a special obligation to ensure that our ethical standards are beyond reproach. Any dishonesty in our academic transactions violates this trust. The University of Manitoba Graduate Calendar addresses the issue of academic dishonesty under the heading "Plagiarism and Cheating." Specifically, acts of academic dishonesty include, but are not limited to:

- using the exact words of a published or unpublished author without quotation marks and without referencing the source of these words
- duplicating a table, graph or diagram, in whole or in part, without referencing the source
- paraphrasing the conceptual framework, research design, interpretation, or any other ideas of another person, whether written or verbal (e.g., personal communications, ideas from a verbal presentation) without referencing the source
- copying the answers of another student in any test, examination, or take-home assignment
- providing answers to another student in any test, examination, or take-home assignment
- taking any unauthorized materials into an examination or term test (crib notes)
- impersonating another student or allowing another person to impersonate oneself for the purpose of submitting academic work or writing any test or examination
- stealing or mutilating library materials
- accessing tests prior to the time and date of the sitting
- changing name or answer(s) on a test after that test has been graded and returned
- submitting the same paper or portions thereof for more than one assignment, without discussions with the instructors involved.

Many courses in the I. H. Asper School of Business require group projects. Students should be aware that group projects are subject to the same rules regarding academic dishonesty. Because of the unique nature of group projects, all group members must exercise extraordinary care to insure that the group project does not violate the policy on Academic Integrity. Should a violation occur on a group project, all group members will be held jointly accountable, no matter what their individual level of involvement in the specific violation.

Some courses, while not requiring group projects, encourage students to work together in groups (or at least do not prohibit it) before submitting individual assignments. Students are encouraged to discuss this issue as it relates to academic integrity with their instructor to avoid violating this policy.

In the I. H. Asper School of Business, all suspected cases of academic dishonesty involving a graduate student (i.e. MBA, MSc or PhD student) will be reported directly by the instructor to the Dean of the Faculty of Graduate Studies.

Vern Campbell, P.Eng., MBA, is the Principal of Process Management by VFC whose extensive operational and consulting experience includes strategy development & deployment, Key Performance Indicator (KPI) development and deployment, leadership training and development, process improvement project selection and prioritization, and operational improvement through the application of advanced Lean Six Sigma methodologies. Vern's consultancy practice focuses on maximizing an organization's operational effectiveness, efficiency, employee fulfillment and results. Vern's opportunities to learn from global experts in strategic planning and organizational improvement have led to his broad level of knowledge and experience consulting to manufacturers, service industries, agri-food and processing, environmental services groups, non-profit groups and health care organizations throughout Canada and the United States.

Vern spent ten years at Manitoba Hydro (1989-1999), first in financial planning and then leading their Strategic Planning and Quality Improvement Initiative. In 2000, Vern moved to Northern Blower, a 200 employee custom fan manufacturer serving the North American industrial market, initially as a consultant (2000-2002) and then as General Manager (2002-2011). At Northern Blower he put his consultancy principles into practice with dramatic results. Northern Blower was one of a small, select group of organizations in Canada that worked with Toyota Corporation to learn and implement the Toyota Production System. Toyota's "lean" management system is highly successful in eliminating waste through developing people and systems to provide consumers with what they need, when they need it, affordably.

Vern has over 20 years of experience in the field of strategy development, strategy deployment, KPI systems development and deployment, Lean, and organizational process improvement. He has consulted with various industries and sectors: agriculture, food processing, healthcare, non-profit, manufacturing, human resources/payroll, electric utilities, packaging, education, regulatory bodies, to name but a few. The breadth and scope of the engagements has varied, but include Strategy Planning and deployment, cultural transformations, KPI systems, Executive training and coaching, leadership and supervisor development and coaching, strategic project selection and execution, Lean Six Sigma training and coaching, basic data analysis, interpretation and problem solving. The objective of any consulting engagement is to transfer the knowledge and skills to the client organization so that they may strive for and realize self-sufficiency.

Vern is a Professional Engineer (APEGM), earning his Bachelor of Science Degree in Mechanical Engineering, with Distinction, from the University of Manitoba. He was awarded the Gold Medal from the Canadian Society for Mechanical Engineering, and went on to attain his Master Degree in Business Administration from the University of Western Ontario. Vern is an Associate Professor and Engineer in Residence with the Faculty of Engineering at the University of Manitoba teaching a 4th year and graduate level course in Operational Excellence. Vern guest lectures at the University of Miami's School of Business Administration and the Stern School of Business at New York University, New York. He is currently enrolled in the post-Masters program at the University of Miami. A Lean Six Sigma Black Belt, Vern is working to attain his Master Black Belt status in Lean Six Sigma at the University of Miami.