

# Introduction to Root Cause Analysis Problem Solving (RCA) Fall 2021 Course Details

- Instructor:** Vern Campbell, P.Eng, MBA, Lean Six Sigma Master Black Belt
- Location:** Virtual (Zoom)
- Length:** 19 Hour (Please see attached syllabus)
- 2 Hour Project Set-up and kick off session for Champions and participants.
  - 15 Hours Just in time (JIT) training workshops for participants.
  - 2 Hour Final Project Presentations & Celebration
- Dates:**
- September 16, 2021 – 9:00 – 11:00 a.m. (Kick-off - Champions and participants)
  - Every Thursday afternoon from September 23 – October 28, 2021 – 1:00 – 4:30 p.m. (participants)
  - Final Wrap-up Presentations – November 18, 2021 – 8:30-10:30 a.m. (Champions and participants)
- Prerequisites:** None – Root Cause Problem Solving is introductory.
- Projects:** Basic Root Cause Problem Level Projects are required (Sample Criteria attached). The design of the course is to “learn by doing” by applying the methods and tools to “real” problems.
- Software:** No requirements.
- Cost:** \$950.00 per person (includes “hands on” coaching through to certification). For 3 or more participants from the same organization, the cost is reduced to \$875.00 per person.
- Class Size:** Limited to 16 participants.
- Content:**
- Basic principles of Root Cause Problem Solving.
  - The method to understand the current situation including performance metrics.
  - The 7 Step (QJ) problem solving method.
  - Applying the 7 basic Quality control tools to solve problems using data and facts.
- Registration Information:** Email – [vern.campbell@verncampbell.com](mailto:vern.campbell@verncampbell.com)

## Course Leader



**Vern Campbell, BScME, MBA, P.Eng**  
**Lean Six Sigma Master Black Belt**  
Principal

Vern Campbell 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 including Process FMEA. 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 to learn and implement the Toyota Production System. Toyota's "lean" management system is highly successful in eliminating waste through developing people and sustainable 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, 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 and sustainable results.

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 4<sup>th</sup> year and graduate level course in Operational Excellence. Vern also teaches Sustainable Lean Management with the MBA Faculty in the Asper School of Business at the University of Manitoba. 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. Vern holds a Master Black Belt status in Lean Six Sigma from the University of Miami.

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# Introduction to Root Cause Problem Solving Fall 2021 Course Registration

## **Registration Form**

Organization: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Contact Phone Number: \_\_\_\_\_

Contact E-Mail Address: \_\_\_\_\_

Primary Contact Address: \_\_\_\_\_

Participants (Name, Position, E-Mail Address):

	Name	Position	E-Mail Address
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____

Email to:

[vern.campbell@verncampbell.com](mailto:vern.campbell@verncampbell.com)

**Project Note: Root Cause Problem Solving Training qualifies under the Manitoba Job Grant program.**

# Root Cause Problem Solving Course Syllabus Fall 2021

- Objective:**
- To build a foundation of problem-solving competency.
  - To develop a consistent structured problem-solving ability.
  - To solve “real” problems that deliver “real” improvement results.
- Root Cause Certification Requirements:**
- Candidates will:
    - Attend all training sessions.
    - Successfully complete the basic assessment.
    - Solve a problem utilizing the Problem Solving Method (Quality Journal) and the basic Seven Quality Control tools (7 QC Tools).
- Root Cause PS Prerequisite:**
- Entry Level
- Target Employee Group:**
- All Employees
- Material Requirements:**
- Memory Jogger (Provided)
  - Recommended Reference Books:
    - “The Team Handbook” Joiner et al
    - “Learning From the Masters” Lou Schultz (Provided)
    - “The Toyota Production System” Ohno
    - “Understanding Variation” Wheeler
  - Quality Journal (QJ) (Electronic Version Provided)
- Course Structure:**
- The course will be 19 hours in duration. The sessions will be conducted in a Just-in-Time (JIT) format. There will be 1 week between sessions to allow time for material review and the application of the method and tools learned to the candidate’s selected problem.
  - The course will be structured to include preparation work, in-class work & post-class study and project application.
  - Weekly Coaching sessions.

**Course  
Overview:**

- Week 1 - A 2 hour “kick-off meeting with all participants and “champions”.”
  - The purpose of this “kick-off” workshop is to provide all participants with an overview of the process and to assign pre-work so that they come to the first workshop with a good problem to work on and they are set up to succeed.
  
- Week 2 - 3-hour root cause problem solving workshops for participants followed by 1 week application.
  - The purpose of this workshop is to initiate the problem-solving process. The participants will learn the fundamental principles of root cause problem solving and start working through their problem by defining their problem with facts & data. This workshop will cover Step 1 of the Root Cause Problem Solving process. This step, Establish the Focus, will enable the participant to develop a clear problem statement with a fact & data verified gap.
  
- Week 3 - 3-hour Root Cause Problem Solving workshop for participants followed by 1 week application.
  - The purpose of this workshop is to learn Step 2 of the problem-solving method in-order-to identify the underlying symptoms, patterns, and focal points of the problem gap. (Sometimes referred to as the “Red X”). This step, Examine the Current Situation, answers the questions; “What is underlying pattern to the problem and the causal focal point or “point of cause”.
  
- Week 4 - 3-hour Root Cause Problem Solving workshop for participants followed by 1 week application.
  - The purpose of this workshop is to learn and apply Step 3 of the Root Cause Problem Solving Process; Analyze the Causes. This step, Analyze the Causes, answers the question; “What is the root cause?”
  
- Week 5 – Coaching Session

- Week 6 - 3-hour Root Cause Problem Solving workshop for participants followed by 1 week application.
  - The purpose of this workshop is to learn Step 4 & 5 of the Root Cause Problem Solving process; Act on the Causes & Check/Study the Results. Step 4, Act on the Causes, answers the question; “What improvement plan or countermeasure will eliminate Root Cause?”. Step 5, Check/Study the results, answers the questions: “was the root cause the real root cause and were the actions successful in the elimination of the root cause?”.
  
- Week 7 - The fifth 3-hour Root Cause Problem Solving workshop for participants followed by 1 week application.
  - The purpose of this workshop will be to learn and apply Steps 6 & 7 of the Root Cause Problem Solving process; Standardize the Process and Draw Conclusions. Step 6, Standardize the process, answers the question; “How do we ensure that the improvement will be sustained?”. Step 7, Draw Conclusions, answers the questions; What are the next steps, what did we learn so we can improve next time & how do we share/spread our findings?”.
  
- Week 8 - A 2-hour “wrap-up” session where the problem-solving teams will present their root cause project to senior managers or other interested stakeholders.
  - The purpose of this meeting is to enable the problem-solving teams to share their “cases” and lessons learned for accelerated learning. The presentations are also an opportunity to celebrate the teams’ accomplishments.

**Introduction to Root Cause Problem Solving**  
**Fall 2021**  
**Sample Project Selection Criteria**

1. “Winnable” but challenging.
2. A “real” problem where the solution is not known.
3. Painful – important enough that we will focus.
4. Cycles frequently – collecting good data is usually an issue with initial projects.
5. Engaged/committed stakeholders.
6. Control/ability to make improvement on root cause.
7. A committed project Champion/sponsor.