70% of the time spent on reliability improvement fails to generate sustainable business success

Lakeside’s unique and proven implementation offerings can ensure FAST & SUSTAINABLE results

150,000 Man Hours of Intellectual Property to ACCELERATE results
- MRO Catalog (7 Million+ Parts)
- Manufactures BOM Lists (70,000+)
- Equipment Templates (6,200)
- FMEA Templates (500+)

180 Engineers, Technologists & Technicians LOCAL to you

50+ Maintenance & Reliability Training Courses designed to develop reliability LEADERS and connect the local reliability COMMUNITY

5 Offices across ONTARIO & MANITOBA to support the evolution of your program

1 Reliability simulation tool to ignite CULTURE CHANGE: The Reliability Game®
### Training Path

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<td>Intermediate Vibration Analysis Category II with Certification (Course RS2032)</td>
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<td>Advanced Machinery Health Analyzer Functions (Course RS2091)</td>
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<tr>
<td><strong>Entire Organization</strong></td>
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### Reliability Game

The Reliability Game® is designed to teach participants how to make the transition from a reactive to a proactive maintenance environment. We recommend that all functions of the organization participate in this game, in order to develop a common frame of reference and a team mentality.
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Trying to change organizational culture is often challenging, but it is also very rewarding. The primary obstacle is that people have a hard time “seeing” the objective. Emerson’s Reliability Game® is the solution to this problem. This simulation clearly demonstrates the value of proactive reliability practices and the positive effect on the bottom line. It is an educational, fun way to create a common understanding of your reliability business goals.

The Reliability Game® is designed to teach participants how to make the transition from a reactive to a proactive maintenance environment. They will learn to “follow the money” and further their understanding of the business potential of reliability.

Participants will learn:

• The Financial Opportunity Associated with Proactive Maintenance
• Where the Money Goes
• How to Stop Wasting Money

Prerequisites

None

Length

1 Day / 8am to 4:30pm

For more information and upcoming training dates visit www.LakesideControls.com
## Course Description

An introduction to the basic maintenance strategy model that will act as the foundation for developing RCM techniques, choosing and deploying PMs and creating an effective maintenance strategy to support an efficient maintenance environment.

### Maintenance Strategy Models
- Maintenance Strategies
- Reactive vs. Preventative/Predictive Maintenance Strategy
- Benefits of Preventative/Predictive Maintenance Strategy

### Basic RCM Techniques
- Objective of a Preventative/Predictive Maintenance Program
- Use of Reliability Centered Maintenance
- Failure Consequence Categories

### PM Task Selection
- Nature of Equipment Failures
- Types of Preventative/Predictive Maintenance Tasks

### Basic PM Tools
- Predictive Maintenance Technologies
- Use of Criticality Ranking
- Preventative/Predictive Maintenance Program Optimization Requirements

### PM Program Design
- Basic Reliability Centered Maintenance/Failure Modes Effects Analysis Process
- Use of RCM/FMEA in Preventative/Predictive Program Development

### PM Development Principles
- Use of Quantifiable Information in PM Task Development

### PM Scheduling Techniques
- PM Scheduling Requirements
- Phase Preventative Maintenance and Time Interval Adjustments
- PM Shadowing
- PM Load Balancing

### PM Program Monitoring
- Use of Performance Measures to Evaluate the Health of a Preventative/Predictive Maintenance Program
- Evaluation of Performance Measures Used to Monitor Asset Health

## Topics

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<th>Course Description</th>
<th>Maintenance Strategy Models</th>
<th>PM Program Design</th>
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<td>Benefits of Preventative/Predictive Maintenance Strategy</td>
<td>Use of RCM/FMEA in Preventative/Predictive Program Development</td>
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## Prerequisites

None

## Length

2 Days / 8am to 4:30pm

## CEUs

1.4

For more information and upcoming training dates visit www.LakesideControls.com
# Introduction to Planning and Scheduling Principles

## Course Description
An introductory course designed to provide participants with an understanding of the fundamentals of creating and maintaining an efficient planning and scheduling program.

## Topics

**Planning and Scheduling World Class Model:**
- Advantages of the Planning Process
- Characteristics of the Planning & Control Matrix, World Class Model & Performance Levels
- Characteristics of the Potential Failure (P-F) Curve
- Characteristics of How Equipment Fails
- Characteristics of the Planning and Scheduling Workflow Model
- Planning and Scheduling Roles and Responsibilities
- Ratios of Planner, Scheduler and Supervisor to Craftsmen
- Use and Benefit of Predictive Maintenance Technologies
- Material Management impact on Planning and Scheduling

**Planning Principles:**
- Planning Fundamentals
- Basic Job Plan Requirements
- Requirements of Basic Job Plan Writing
- Importance of Quantitative Preventative Maintenance Tasks
- Basic Job Plan writing and Estimating
- Work Requests vs. Work Orders

**Scheduling Principles:**
- Criteria of Scheduling Priorities
- Criteria for PM Schedule Development
- Scheduling Fundamentals
- Relationship Between Resource Availability and Resource Allocation

**Planning and Scheduling Program Monitoring:**
- Successful Implementation of the Planning and Scheduling Model
- Quality Program Performance Measures
- Selection and Utilization of an Integrated CMMS System

## Prerequisites
None

## Length
2 Days / 8am to 4:30pm

## CEUs
1.4

For more information and upcoming training dates visit [www.LakesideControls.com](http://www.LakesideControls.com)
# Advanced Maintenance Planning

**Course Description**

An intensive, hands-on course designed to simulate real-world situations and teach participants how to effectively execute the planning function.

**Topics**

<table>
<thead>
<tr>
<th>Work Request Validation</th>
<th>Work Order Approval</th>
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<tr>
<td>• Demonstrate Ability to Review and Screen Work Request for Necessary Content</td>
<td>• Demonstrate Ability to Review and Screen Work Orders for Necessary Content</td>
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<th>Job Scoping</th>
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<td>• Perform Job Scoping Activities to Clarify Work Requirements.</td>
<td>• Developing Procedures and Instructions</td>
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<td>• Selecting Craft Labor</td>
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<td>• Performing Time Estimates</td>
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<td>• Identifying Material Requirements</td>
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<td>• Identifying Reference Material</td>
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<td>• Identifying Appropriate Equipment and Work Location</td>
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<td></td>
<td>• Selecting Special Tools and Equipment</td>
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<td></td>
<td>• Identifying Documentation and Reference Requirements</td>
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<td></td>
<td>• Developing Post-Maintenance Checks and Completion Testing Requirements</td>
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</table>

**Prerequisites**

Fundamental knowledge of the world-class planning and scheduling model. Familiar with planning principles and metrics for monitoring planning program effectiveness. A minimum of six months experience with work order planning or attendance at Lakeside’s Introduction to Planning and Scheduling Principles is recommended.

**Length**

4 Days / 8am to 4:30pm

**CEUs**

2.8

For more information and upcoming training dates visit www.LakesideControls.com
Materials Management Strategies

Course Description
An introductory course designed to provide participants instructions about how to manage, organize, and control inventory risk through strategic MRO inventory management.

Introduction
- Maintenance Storeroom Purpose
- Maintenance Storeroom Functions and Expectations

Purpose and Strategic Importance
- Role of Stores
- Profitability and Market Share
- Connecting Maintenance Practices to Materials Practices
- Best Practices to Achieve Effective Stores Management

Organizing for Maintenance Stores and Management Control
- Inventory Management Key Elements
- Inventory Record Accuracy (IRA)
- Storeroom Access and Control
- Inventory Catalog

Stores Management Tools
- Stores/Inventory Cost
- Obsolete Parts and Location
- Stores Control Methods
- The Replenishment Process
- Inventory Classification, ABC Analysis
- Inventory Record Accuracy (IRA) Benefits
- Standard Operating Procedures
- Maintenance Planning and Scheduling

High Performance Stores
- Storeroom Best Practice Guidelines

Stores KPI Metrics and World Class Benchmarks
- Total Inventory/Transactions by Type
- Total Inventory/Transactions by Stores Employee
- Inventory Turns by Type
- Inventory Value versus ARV (Asset Replacement Value)
- Zero Usage

Prerequisites
None

Length
2 Days / 8am to 4:30pm

CEUs
1.4

For more information and upcoming training dates visit www.LakesideControls.com
Reliability Centered Maintenance (RCM) Principles

Course Description

Reliability Centered Maintenance Analysis (RCM) is a key foundational element of a Reliability Based Maintenance program. This two-day course covers all important aspects of Reliability Centered Maintenance Analysis and Implementation. Participants will learn how to effectively participate in an RCM program and have all necessary information to support such an implementation.

Introduction
- History of RCM
- Why RCM
- Selecting Candidate Equipment
- Team Approach
- RCM Philosophies

Conducting RCM Analysis
- RCM Terms and Definitions
- Identifying System Parameters
- Answering the 7 Questions of RCM
- Determining Failure Mitigation Strategies
- Implementing the Results of RCM Analysis

Conducting RCM Analysis
- Facilitating RCM at your Site
- Who Should Lead
- Choosing the Appropriate Analysis Tools
- Tracking Progress Through to Completion
- Avoiding the Causes of Failed RCM Implementations

Conducting RCM Analysis
- Leveraging the Benefits of RCM
- Lateral Deployments
- The FMEA Library
- Celebrating Results
- Showing the Business Case

Topics

| Prerequisites | Bringing a laptop computer is highly suggested for those participants who plan on implementing RCM at their sites. Use of laptops during the course is not mandatory. |
| Length | 2 Days / 8am to 4:30pm |

For more information and upcoming training dates visit www.LakesideControls.com
# Maintenance Management 101/201

It is well documented that managing the maintenance function in a proactive rather than a reactive manner results in lower costs and superior asset performance. This is easy to say but difficult to do in actual practice. This course will explore twenty of the most basic fundamentals that every Maintenance Manager must have in place in order to make a proactive maintenance organization a reality.

## Course Description

**Introduction**

**Elements of a Proactive Maintenance Philosophy**
- Equipment Failures Are Unacceptable
- Important Work vs. Urgent Work
- The Maintenance-Operations Partnership
- The Importance of Good Data
- Entropy as it Applies to Maintenance
- Precision Maintenance - The Last Frontier
- The System Wins Every Time
- Effective Methods for Reducing Maintenance Costs

**Processes that Must Be in Place**
- Build a Solid Foundation First

**Prerequisites**

None

**Length**

1 Day / 8am to 4:30pm

---

For more information and upcoming training dates visit [www.LakesideControls.com](http://www.LakesideControls.com)
# Foundational Awareness for Maintenance and Reliability Professionals

**Course Description**

This 4-day course provides participants with a comprehensive overview of key foundational elements, both technical and non-technical, which must be understood and integrated in order to be most effective in the maintenance and reliability profession.

## Topics

### The Business of Maintenance and Reliability
- Setting Goals and Objectives
- Selling Change
- Measuring Performance Evaluation
- Building the Business Case
- Communication
- Resource Planning and Budgeting
- Performance Agreements

### Production System Reliability
- Process and Industry Standards
- Production System Understanding
- Process Improvement Methods
- Environmental, Health, and Safety Considerations
- Management of Change

### Equipment Reliability Tactics
- Establishing Reliability Targets
- Reliability Gap Analysis
- Equipment Maintenance Strategy Development
- Continuous Improvement

### People and Culture Management
- Assessing Organizational Competence
- Defining the Maintenance and Reliability Organization
- Skills Development
- Communication for Change

### Work Management Best Practices
- Work Identification
- Work Prioritization
- Planning and Scheduling
- Backlog Management
- Resource Management
- Work History Documentation
- Analyzing Work History for Improved Performance
- Performance Measures
- Capital Project Planning
- Information Technology

## Prerequisites

None

## Length

4 Day / 8am to 4:30pm

For more information and upcoming training dates visit www.LakesideControls.com
Our intensive, 3-day educational course is an International Council for Machinery Lubrication (ICML) based 3-day class designed to give you the theory and practical tools you’ll need to transform your lubrication program. By using “how-to” guides, you’ll complete the course knowing why and how key changes should be implemented in your organization.

- Role of Lubrication in Machine Reliability
- Lubrication Theory and Fundamentals
- Lubricates Failure Modes
- Lubricating Oil Application Methods
- Grease Application Methods
- Lubricant Selection and Lubrication Considerations
- Lubricant Contamination Control
- Storage and Handling of Lubricants
- Used Oil Analysis
- Oil Sampling Methods
- Equipment Modifications
- Lubrication Program Gap Analysis

Prerequisites  None

Length  3 Days / 8am to 4:30pm

For more information and upcoming training dates visit www.LakesideControls.com
Lubrication Best Practices Workshop

Course Description

The key to reliability and cost savings - education and training! Lubrication is the foundation to any reliability-driven maintenance program and, when done correctly, can save thousands of dollars—not to mention increase equipment uptime. In one day, let us provide a clear picture of what lubrication preferred practices look like and give you the tools to get you there.

Des-Case 1-day workshops are designed to teach the basics on how to implement preferred lubrication practices. In addition to 8-hours of professional instruction, participants are given access to our benchmark assessment tools so they can evaluate their lubrication practices against best-in-class. As part of the workshop, participants are provided a customized action item list, detailing the specific activities they need to work on to achieve new and improved lubrication performance.

The course will help you:

- Evaluate the current status of your lubrication practices relative to best-in-class programs
- Understand the fundamentals of lubrication and lubrication management
- Create a customized action item list to help you transform your lubrication practices

Topics

Prerequisites

None

Length

1 Day / 8am to 4:30pm

For more information and upcoming training dates visit www.LakesideControls.com
Basic Vibration Analysis  
Category I Compliant

Course Description
This 4 day course is intended to enable students to operate single channel machinery analyzers, dump and load routes, recognize the difference between good and bad data, and compare vibration measurements against pre-established alert settings. Although this training course is not product specific, students will use Emerson’s CSI technologies for demonstration purposes. The class shows the students how to use the vibration analyzer in conjunction with Emerson Machinery Health Management supported software to analyze basic vibration defects. This course complies with Category I Vibration Analyst per ISO standard 18436-2: Vibration condition monitoring and diagnostics.

Topics
- Analyzer/Computer Communication
- Predefined Route Data Collection
- Off-route Data Collection and Setup
- Monitor Mode Measurements
- Peak and Phase Measurements

Prerequisites
Student understanding of vibration analysis is expected.

Length
4 Days / 8am to 4:30pm

CEUs
2.8

For more information and upcoming training dates visit www.LakesideControls.com
Intermediate Vibration Analysis
Category II Compliant

Course Description
In this 4 day course, category II vibration analysts are expected to be able to select appropriate vibration measurement techniques, set up instruments for basic resolution of amplitude, frequency, and time, perform single-channel impact tests, classify, interpret, and evaluate test results in accordance with applicable specifications and standards, recommend minor corrective actions, and understand basic single plane field balancing concepts. The course also features the use of the CSI 2130 Machinery Analyzer in conjunction with advanced machinery analysis techniques. Discussions of case histories on machinery faults are one of the focal points of this course. This course complies with Category II Vibration Analyst per ISO Standard 18436-2: Vibration condition monitoring and diagnostics.

Topics
- Equipment Testing & Diagnostics
- Reference Standards
- Reporting & Documentation
- Fault Severity Determination
- Analyzer Averaging Techniques
- Sensor Selection Guidelines
- Introduction to Demodulation and PeakVue
- Advanced Waveform Analysis
- Sideband Analysis
- Rolling Element Bearing Failure Modes
- Advanced Electrical Analysis Techniques
- Pump/Fan Vibration
- Phase Analysis Using Single and Dual Channel
- Perform Basic Single-Plane Field Balancing

Prerequisites
Basic Vibration Analysis and a cumulative 18 months of field experience are recommended.

Length
4 Days / 8am to 4:30pm

CEUs
2.8

For more information and upcoming training dates visit www.LakesideControls.com
# Introduction to AMS Machinery Health Manager

This 4-day course was designed for the new users of AMS Machinery Manager. Students learn methods of database creation and vital features of route creation such as collecting reference data, analyzer/computer communication, and the basic concepts of Analysis Parameter Sets, Alarm Limit Sets, and Fault Frequency Sets. A CSI 2130 Analyzer will be used to load routes and collect data on lab machinery for basic vibration analysis using Export and Diagnostic Plotting.

## Course Description

- Equipment Configuration Using RBMwizard®
- Machine Duplication
- Route Creation
- Basic Diagnostic Plot Options
- Introduction to Reporting Techniques
- Problem Reporting

## Topics

Computer experience with Windows Operating System and Basic Vibration are recommended.

## Prerequisites

4 Days / 8am to 4:30pm

## Length

2.8

## CEUs

For more information and upcoming training dates visit www.LakesideControls.com
Fundamentals of the CSI 2140

Course Description
This two-day hands-on course covers the basic operation of the CSI 2140 Machinery Health Analyzer. Students collect data on lab machines. Course materials are designed for personnel with experience in the field of vibration data collection and analysis, but little or no experience with CSI analyzers.

Topics
- Analyzer/Computer Communication
- Predefined Route Data Collection
- Job Data Collection and Setup
- Manual Mode Measurements
- Introduction to CSI 2140 Analysis Experts Functions

Prerequisites
Understanding of vibration analysis and basic vibration collection principles.

Length
2 Days / 8am to 4:30pm

CEUs
1.4
Lakeside Process Controls has been helping our customers develop and implement their Condition Monitoring (CM) programs for well over a decade by providing industry leading, award-winning technology from Emerson Process Management and through industry leaders like UE Systems, Des-Case and FLIR, all combined with the local expertise of our certified technicians. One consistent factor when starting or improving on an existing Condition Monitoring program is that having the right technology is just the beginning, a structured approach to design and implementation is essential to ensuring the success of the program. In one day, let us provide a clear picture of what condition monitoring preferred practices look like and give you the tools to get you there.

Topics
- Reliability Awareness - The Nature of Failures
- Reliability Awareness - Change Management
- Implementing a “Best Practices” Condition Based Maintenance Program
- The Importance of a Solid Foundation for Lubrication Success
- Mechanical and Electrical Equipment
- Reliability with Ultrasound
- Machinery Health Though Vibration
- Asset Condition Information – Integrating Predictive Technologies

Prerequisites
None

Length
1 Day / 8am to 4:30pm

For more information and upcoming training dates visit www.LakesideControls.com
Ultrasound Certification
Level 1

Course Description

Conforming to the classroom requirement of ASNT Recommended Practice, SNT-TC-1A and in accordance with ISO 18436-8, the course offers 32 hours of instruction followed by a written examination. This is a comprehensive classroom course in which the theory, principles and practices of Airborne Ultrasound Technology are taught. Instructors for this course have been selected for their outstanding comprehension, experience and technical expertise in the field of Airborne/Structure Borne Ultrasound. The course was designed by a committee of experts, some of whom were responsible for pioneering and developing the technology.

Topics

- Review of Certification Requirements
- Theory of Sound
- Fundamental Principles of Ultrasound Physics
- Transmission and Effects of Ultrasound Waves
- Efficiency of Airborne Ultrasounds
- Overview of Typical Applications & Integration of Technology
- Overview of Instruments and Software
- Leak Selection
- Inspection of Heat Exchangers
- Analysis of Compressed Air Leaks
- Electrical Inspection
- Integration of Ultrasound & Infrared Methods
- Valve Inspection
- Steam Trap Inspection
- Review of Proactive & Predictive Maintenance Concepts
- Inspection of Compressors, Gears, Pumps, Motors & Fans
- Inspection of Bearings/Study of Trends and Lubrication
- Data Recording
- Spectral Sound Analysis
- Examination

Prerequisites

None

Length

5 Days / 8am to 4:30pm
Thermography Certification
Level 1

Course Description
The Level I Infrared Thermography Training Course is geared to the new infrared camera user and focuses on how thermography is used for a variety of condition monitoring/predictive maintenance applications. Attendees completing all training course requirements and a thermography field assignment will receive a Level I Infrared Thermography Certification.

- Infrared Thermography Applications Overview
- Basic Camera Setup and Operation
- Basic IR camera User Interface, Menu Description and Navigation, Operational Tips and Tricks, and Key Elements to Getting a Good IR Image
- Thermal Science Fundamentals
- Heat Transfer
- Fundamentals of Infrared Science
- Thermal Measurement
- Electrical Applications
- Thermography Safety
- Mechanical Applications
- Building Applications

Prerequisites
None

Length
4 Days / 8am to 4:30pm

For more information and upcoming training dates visit www.LakesideControls.com
Most operations, maintenance and engineering professionals understand that a good Condition Monitoring (CM) program is foundational to a successful maintenance strategy, yet many programs either get stalled or fail to deliver the desired outcomes.

Lakeside Process Controls has been helping our customers develop and implement their Condition Monitoring (CM) programs for well over a decade by providing industry leading, award-winning technology from Emerson Process Management and through industry leaders like UE Systems, Des-Case and FLIR, all combined with the local expertise of our certified technicians. One consistent factor when starting or improving on an existing Condition Monitoring program is that having the right technology is just the beginning, a structured approach to design and implementation is essential to ensuring the success of the program.

Mentorship provided by a certified and experienced condition monitoring specialist is the single most important factor to ensure the success of your program. As part of this program, we provide real life on-the-job training on your equipment so that you can learn from our years of experience.

Our specialist will explain the processes behind the theory, so that you can start to implement industry best practices from the start of the program. This type of learning allows employees to apply the knowledge acquired during classroom training and accelerate this learning to the plant floor, thus increasing their efficiency and performance.

Following each training session, Lakeside offers in-house support in the following areas to help implement the methods taught:

**Condition Monitoring Techniques**
- Vibration
- Ultrasound
- Thermography
- Tribology

**Precision Maintenance**
- Alignment
- Balancing
- Lubrication

**Work Processes**
- Scheduling
- Planning

Coaching is a service that can greatly accelerate your current processes. To find out more about this service, please contact us. We can develop a plan with you to help you achieve your goals.
Solve & Support

Prediction and Protection for Production Assets

**Critical Machinery**
- Online Prediction Monitoring with Protection
- Digital Overspeed Protection
- Protection with Embedded Prediction

**Instruments & Valves**

**Balance of Plant Assets**
- Portable Online Monitoring
- Sensors
- Wireless Prediction Monitoring
- Thermography
- Laser Alignment
- Oil Analysis
- Field-based Protection

**AMS Machinery Manager**

**AMS Device Manager**

**Portable Prediction Monitoring**

**Condition Monitoring Services**

**Predictive Diagnostic Software Applications**
- Online Prediction
- Condition Indicators
- Asset Health Analysis