

Training 2014

Work processes and skills training for
the manufacturing and process industry.



To Register



IDCON | Reliability Solutions
Alliance

People cannot be
more **efficient**
than the system
they work in
allows them to be.

Nor can they be
effective
without
superior skills.



Improves the system

www.idcon.com



Improves skills

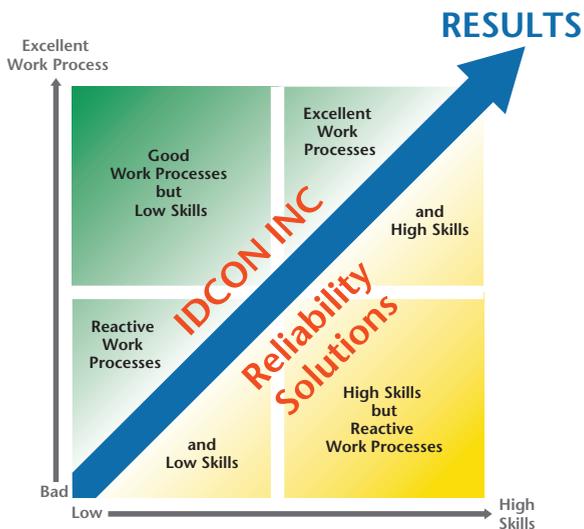
www.reliabilitysolutions.net



Why an Alliance?

IDCON and Reliability Solutions have extensive experience in the area of Reliability and Maintenance Management, Training and Hands on Implementation. Our track records are excellent with impressive references from happy clients all over the world.

Together we have seen that even greater, continuously improving and sustainable results are achieved when both the system people work in and their skills are improved.



If only skills are improved while the work system remains reactive people will not be allowed to use their enhanced skills and expected results do not materialize to full potential.

If only the system people work in is improved but people's skills are not up to the required level expected results do not materialize to full potential.

IDCON INC helps you to organize and improve your work system enabling work to be executed in a much safer and more effective way.

Reliability Solutions helps you improve your people's skills towards a precision level resulting in longer equipment life and less repeat work.

Together in an alliance we help you improve manufacturing reliability and lowering costs.





IDCON — At a Glance

Who We Are: IDCON is a uniquely specialized management consulting company that helps manufacturing and process industries maximize profits by improving reliability and maintenance practices.

For more than four decades, our reliability and maintenance strategies have been applied successfully worldwide in virtually every type of industry.

What We Do: IDCON's mission is to help our clients increase production reliability and lower manufacturing and maintenance costs.

While the traditional maintenance approach focuses almost exclusively on equipment, our philosophy emphasizes achieving results through people and the processes people work in.

"The training was great, I wish my entire plant could have this training."

Maintenance Manger, LaFarge

"A fantastic structure with a knowledgeable instructor."

Maintenance Planner/Reliability Engineer, Graphic Packaging

"Excellent! Well worth the time and money."

Mechanic, Xcel Energy

Skill Set Improvements



Reliability Solutions — At a Glance

Who We Are: Reliability Solutions are leaders in the Maintenance Skills Training arena. Our leadership and trainers come from and work on the manufacturing floor. We know where we can make a difference for our clients. We create courses that matter with practical applications, meaningful in-class demonstrations, and measurable performance returns.

What We Do: Reliability Solutions' mission is to constantly strive to assist our clients improve reliability within their manufacturing process. Working directly with our clients we help them optimize product quality/quantity, improve asset availability, reduce overall maintenance costs, conserve energy consumption, and change safety performance.



Learning Options

Both IDCON and Reliability Solutions offer training solutions that meet your organizations needs.

Best Practice Seminars- Open Series

The open training option includes the fundamentals applicable to many industries and shares the best practices that IDCON INC and Reliability Solutions have applied at client sites worldwide. You'll find the open series course offerings and details contained in this brochure.

In-house Training and Consulting

IDCON and Reliability Solutions offers customized maintenance training for your organization as well as options for hands on consulting support in your plant or mine. Reliability Solutions' Reliable Manufacturing elements are delivered as a continuous skill set building series. IDCON offers customized work process training, on-the-job coaching and on site implementation support and assessments.

"I would love for this class to come to our plant, for the team. It would help the maintenance technicians do the job they want to do."

Maintenance Supervisor

"Very detailed training"

Reliability Team Member

"Everyone in a manufacturing facility that wants to be more reliable needs to take this class."

Maintenance Planner

Registration

If you have questions or would like help selecting the training option that fits your organization's needs, contact us at **919-847-8764**.

Registering for our courses is easy. Just go online to **www.idcon.com/store** and register online with your credit card or PO.

Satisfaction Guaranteed

IDCON's Satisfaction Guarantee*:

If you are not happy with IDCON's training, we will refund 100 percent of the training fee and invite you to attend another IDCON seminar free of charge.



*This applies to IDCON courses only.

COURSE DESCRIPTION

Planning and Scheduling Spare Parts Management

Four opportunities to attend:

February 17-19 in Raleigh, NC ▪ May 12-14 in Raleigh, NC
August 25-27 in Raleigh, NC ▪ November 17-19 in Raleigh, NC

The foundation of excellence and achieving cost-effective equipment reliability starts with Maintenance Planning and Scheduling. If you want to improve efficiency, effectiveness and reduce overall maintenance cost over time, this is the training course for you. We share practical how-to experience and best practices that you can apply on the job.

Maintenance materials are a large part of any plant's operating costs and waiting for parts to arrive impacts productivity, reliability and the bottom line. Reliability-Based Spare Parts and Materials Management is a unique seminar that provides real solutions to materials management and inventory problems. You'll take away knowledge and tools to dramatically improve your spare parts and supplies management.

Course Objectives

At the end of these courses you will understand:

- Planning and scheduling definitions and concepts
- The process of receiving a problem and issuing a clearly defined solution as a work package
- All aspects of the planning and scheduling cycle
- The basics of preparing work orders that will support plant reliability and work efficiency
- The business processes that support effective plant maintenance
- How to implement planning and scheduling in your plant
- The opportunities for increased plant reliability and maintenance performance through management of spare parts and materials
- Ways to implement some of the opportunities that will be reviewed in this course
- How to support the long-term objectives of your operation and your Company

You will get

- IDCON's 215 page practical Maintenance Planning and Scheduling manual valued at \$145
- IDCON's Reliability Based Spare Parts and Materials Management book valued at \$49
- Class notes and exercises
- Best practice and practical examples on a USB stick you can use in your plant



Maintenance Planning and Scheduling Outline

- Results Oriented Reliability and Maintenance
- Enabling successful planning and scheduling
- Best-practice business process
- Work identification/Work request initiation
- Setting work priorities
- Backlog management
- Planning (What/How)
- Scheduling (Who/When)
- Work execution
- Continuous improvement

Reliability Based Spare Parts and Materials Management Outline

- The impact of maintenance inventory management on performance
- Organizing for efficient management
- Aligning objectives for purchasing, store room and maintenance managers
- Record materials data
- Integration of materials management with plant reliability
- Inventory management basics
- Determine what to stock
- Managing obsolete stock
- What parts should be inventoried

Who should attend?

Maintenance Planners, Schedulers, Maintenance Managers, Maintenance Supervisors and Superintendents, Maintenance and Operations Coordinators, Reliability Managers and Engineers, Storeroom managers and attendants.

> Price \$1495/person (US)

Feel free to contact us for more information or go to idcon.com/training. For registration information you can call us at 1-800-849-2041 or 919-847-8764.

COURSE DESCRIPTION

Preventive Maintenance Essential Care and Condition Monitoring

Four opportunities to attend:

February 20-21 in Raleigh, NC ▪ May 15-16 in Raleigh, NC
August 28-29 in Raleigh, NC ▪ November 20-21 in Raleigh, NC

Preventive maintenance = improved equipment reliability

It all starts with implementing a preventive maintenance program that enables your plant to identify and minimize equipment failures.

IDCON's Preventive Maintenance/Essential Care Condition Monitoring seminar teaches participants how to set up a cost-effective process and gives practical exercises and techniques.

Course Objectives

Upon completion of this course you will have:

- Learned how to reduce the total maintenance burden through Preventive Maintenance
- An understanding of the concepts that drive an inspections program inspection standards
- Learned how to setup effective on-line and off-line inspection programs
- Learned how to ensure equipment components are properly inspected at the right time

Who should attend?

Reliability managers, process engineers, technicians, maintenance and operations supervisors and superintendents, process owners, occurrence investigators, analysts, maintenance directors, reliability professionals, and anyone who wants to improve their ability to solve recurring problems.

You will get

- IDCON's 337 page practical Preventive Maintenance Essential Care and Condition Book valued at \$125.
- Class notes and exercises
- Best practice and practical examples on a USB stick you can use in your plant



Course Outline

- Results Oriented Reliability and Maintenance
- Actions to prevent failures
 - Detailed cleaning
 - Lubrication/hydraulics
 - Alignment
 - Operating procedures
- Actions to find failures early (condition monitoring/inspections)
 - Bearings, vibrations, and SPM
 - Couplings and stroboscopes
 - Chains, belt and guards inspections
 - Material crack detection
 - Corrosion and heat-exchanger inspections
 - Temperature inspections
 - Pumps and mechanical seals and inspections
 - Leak detection
- Optimizing the PM and Condition Monitoring Systems
 - Financial benefits
 - Charter/mission/goal
 - Getting prepared, sample implementation plan
- Reliability Basics
 - Most cost effective maintenance methods
 - Failure developing period
 - Equipment life
- Documentation
 - Equipment needs
 - Inspection frequency
 - Inspection standards
 - Operations, mechanical, electrical instrumentation



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For registration information you can call us at 1-800-849-2041 or 919-847-8764.

Price \$995/person (US) <

COURSE DESCRIPTION

Reliability and Maintenance Management: Work Processes and Precision Skill Sets

Two opportunities to attend:

March 17-21 in Raleigh, NC ▪ October 6-10 in Pensacola, FL

This reliability and maintenance class is designed for leaders and managers. IDCON and Reliability Solutions team up for unique event that covers the essential work processes and skills needed to lead your plant's reliability effort.

IDCON's knowledge in work processes together with Reliability Solutions knowledge in precision skills infuse this class with a broad, practical knowledge that will help all levels of management in your plant.

Course Objectives

At the end of this course you will:

- Understand how to define and measure reliability
- Be able to create a business case for maintenance/ reliability
- Understand the key steps in effective planning and scheduling
- Be able to document a cost effective Preventive Maintenance/ Essential Care and Condition Monitoring process
- Learn practical condition monitoring techniques such as vibration, thermography, using the senses
- Understand an effective Root Cause Problem Elimination process
- Learn how machines fail and how to determine machine health
- Know how to recognize essential skills elements
- Know how to determine asset health for the current and future operating state
- As a leader know how to implement, sustain and institutionalize the reliability initiative
- Learn to be consistent in your reliability development

You will get

- IDCON's 112 page Results Oriented Reliability and Maintenance Management Book an inspiring source of knowledge in reliability and maintenance management leadership, execution and practical tips.
- Class notes and exercises
- Best practice and practical examples on a USB stick you can use in your plant



Course Outline

- Vision for Reliability
- Financials of Reliability
- Evaluate and document PM/ECCM for equipment
- Preventing failures
- Practical Condition monitoring
- Planning and Scheduling the why, the how and the who
- Root Cause Problem Elimination process
- How machines fail
- Recognizing essential skill elements
- The current/future operating state
- Field measurement instrumentation
- Precise Alignment
- Fits and tolerances
- Maintaining skills

Who should attend?

This course is designed for maintenance and operations managers, maintenance supervisors and superintendents.



> Price \$2600/person (US)

Feel free to contact us for more information or go to idcon.com/training. For registration information you can call us at 1-800-849-2041 or 919-847-8764.

COURSE DESCRIPTION

Practical Root Cause Problem Elimination

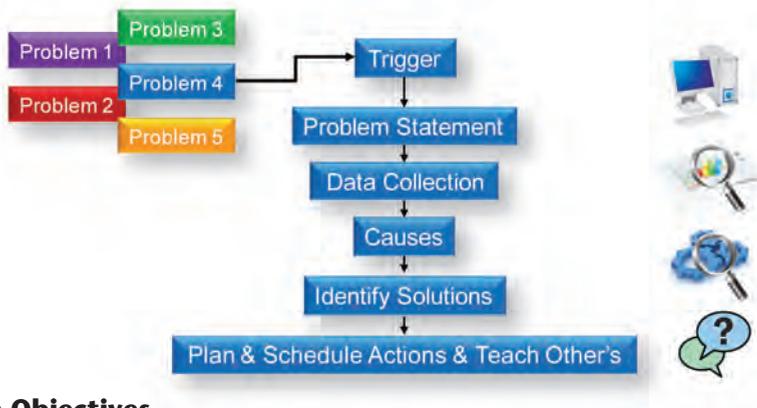
Four opportunities to attend:

April 28 - May 2 in Pensacola, FL ▪ June 23-27 in Raleigh, NC
September 15-19 in Raleigh, NC ▪ November 3-7 in Pensacola, FL

IDCON's Root Cause Problem Elimination Seminar focuses on eradicating problems.

You'll learn how to tie cause and effect together and apply logical thought processes to arrive at the problem's core. You'll learn how to use the "How-Can Diagram" to bring root cause analysis into your day-to-day reliability management process-and do it cost effectively!

This course focuses on both the process of Root Cause Problem Elimination and the common component failures to reinforce the RCPE process. Through hands-on equipment exercises utilizing the tools and techniques, you'll discover how to eliminate problems down to the component level.



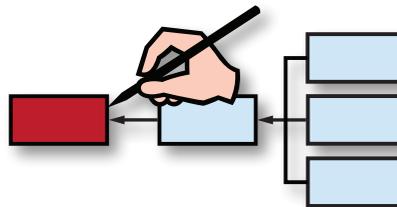
Course Objectives

Upon successful completion you will be able to:

- Demonstrate and Explain the RCPE Process
- Utilize a "critical thinking" approach to RCPE
- Collect, Organize and effectively present RCPE findings
- Understand the importance of correctly implementing problem elimination, improvement opportunities
- Recognize and explain a variety of common machinery component failure causes, failure symptoms, and elimination techniques.

You will get

- Class notes and exercises on a USB stick you can use in your plant including the "How-Can Diagram"



Course Outline

- RCPE in an industrial setting
- Well-known root cause investigations
- RCPE examples from IDCON's experience
- Basic beliefs for RCPE
- Drawing the "How-Can Diagram"
 - Hands on experience
- Finding and prioritizing problems
- Creative and critical thinking
- Root Cause and logical thinking
- The RCPE process
- Triggers to perform RCPE
- Problem definition
 - Possible causes
 - Select most likely cause
 - Verify selected cause
- Identifying solutions
- Common equipment failures
- Utilizing Predictive Maintenance Tools
- Final exercises

Who should attend?

Maintenance Managers, Assistant Managers, Maintenance and Operations Supervisors and Superintendents, Operators/Maintainers, Reliability Managers and Engineers, Maintenance and Operations Coordinators.



Feel free to contact us for more information or go to idcon.com/training.
For registration information you can call us at 1-800-849-2041 or 919-847-8764.

Price \$2600/person (US) <

COURSE DESCRIPTION

Precision Maintenance... Essential Craft Skills Assembly and Installation

Two opportunities to attend:

May 19-23 in Pensacola, FL ▪ August 18-22 in Raleigh, NC

Although all craft technicians have a set of basic skills, all too often we have found that they have forgotten, never used, or were not taught correct "precision" principles and techniques.

You'll get hands-on, live and dynamic demonstrators with exercises to reinforce correct principles and practice new techniques. Attendees will find this short course informative, loaded with practical tips, and finish with a renewed sense of readiness and a fresh approach to maintenance activities. This crucial foundation course assists technicians to develop correct assessment, measurement, troubleshooting and precise reliability improvement habits. This initial module develops techniques and corrections for "facility common" errors that may constitute as much as 70% of facility failures.



Course Objectives

Upon successful completion of this seminar, students will be ready to apply and demonstrate:

- Correction of common assembly errors
- Typical machinery case and associated pipe strain distortion problems,
- Accurately complete a precise, documented and known "cold" machinery alignment,
- Ability to retain and in some cases improve asset balance quality
- Provide a "performance" report that states as found and as left conditions with the use of dynamic measurement tools to extend asset reliability.

Who should attend?

- People with mechanical craft background
- Engineers
- Maintenance Supervisors and Management

You will get

- Class Notes and Hands-on exercises
- Preventive Maintenance Practical Tip Worksheets to use on the job
- Practical Report Out Tips



Course Outline

- Vibration and Field Dynamic Tools
 - Term familiarity
 - Understanding alarm & precise levels
 - Determining what parts are failing
 - Pipe Strain, Rough-In & Pre-Alignment Requirements
- Fitting Housing and Shaft
 - Governing Machine performance: fits & tolerances
 - Problems & Error Prevention
- Assembly Errors
 - Proper fitting of keys, locking devices, set-screw techniques, pulled threads, nicks & burrs etc
 - Correct torquing & lube value changes
- Understanding Precision Shaft Alignment
 - Sequential Work: Alignment Checklists
 - Alignment: Precautions & Tolerances
 - Plotting the relative shaft position
 - Practical removal of various types of "soft foot"
 - Create the "Smart Move" each time
 - Introduction to Thermal Growth
- Unbalance
 - What is it? ... Static/Couple/Dynamic
 - Tolerances, retention & results depend on you!
- Common Machinery Error Tips
 - Motors, Fans, Pumps, Gearboxes and others



> Price \$1895/person (US)

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COURSE DESCRIPTION

Asset Condition Assessment... Mechanical Condition Monitoring Techniques

One opportunity to attend:

July 21-25 in Pensacola, FL

With all the different technologies available to determine the health of our mechanical assets, why do failures still go undetected? Why do we not always find and eliminate the root cause of the failure? The answer is we rarely take a systematic, scientific approach to developing equipment monitoring strategies, and we often do not fully understand the capabilities and limitations of the technologies being used. This results in a piecemeal approach to the application of the technologies, which does not provide optimum results.

This class uses practical hands on activities with the various tools. Attendees are presented with the most common monitoring technologies used along with an introduction to analysis techniques.

Technologies included: vibration, ultrasound, infrared and oil analysis. You will return to your facility with the ability to more effectively communicate with condition monitoring personnel, assist in effective performance audits of the current asset base and suggest improvements to monitoring strategies.

Course Objectives

Upon successful completion of this seminar, students will leave with a complete practical understanding of:

- The various condition monitoring techniques available for mechanical systems
- How they work, their limits and application
- How to best select them for the various applications in their facilities

You will get

- Application matrices that indicate which technologies should be applied to which equipment for the most effective and efficient monitoring of their equipment.
- Application matrices that indicate which technologies are best used to identify which of the common machinery problems that exist in their facilities.
- Detailed information, tips and tricks, on how to evaluate your current condition monitoring systems' effectiveness and present ideas as how to best improve these various program's results.



Subjects

- Reliable Manufacturing Overview
- Introduction to the use of Condition Monitoring
- Understanding the Difference between Notice & Investigate
- Vibration
- Oil Analysis
- Thermography
- Ultrasound
- Common Application Enhancements
- Determining Machinery Problems - Primary & Secondary Technologies

Who should attend?

- Maintenance, Production and Engineering leadership
- Reliability engineers
- Supervisors and Superintendents
- Anyone who interfaces with the condition monitoring team



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Price \$1895/person (US) <



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PRIORITY CODE



Work Process and Skills Training 2014 Schedule

IDCON Course Dates

- Planning and Scheduling & Spare Parts Management _____ February 17-19, 2014 in Raleigh, NC
 May 12-14, 2014 in Raleigh, NC
 August 25-27, 2014 in Raleigh, NC
 November 17-19, 2014 in Raleigh, NC
- Preventive Maintenance/Essential Care Condition Monitoring _____ February 20-21, 2014 in Raleigh, NC
 May 15-16, 2014 in Raleigh, NC
 August 28-29, 2014 in Raleigh, NC
 November 20-21, 2014 in Raleigh, NC

IDCON and Reliability Solutions Course Dates

- Reliability and Maintenance Management: Processes and Precision Skill Sets _____ March 17-21, 2014 in Raleigh, NC
 October 6-10, 2014 in Pensacola, FL
- Practical Root Cause Problem Elimination _____ April 28- May 2, 2014 in Pensacola, FL
 June 23-27, 2014 in Raleigh, NC
 September 15-19, 2014 in Raleigh, NC
 November 3-7, 2014 in Pensacola, FL

Reliability Solutions Course Dates

- Precision Maintenance...Essential Craft Skills Assembly and Installation _____ May 19-23, 2014 in Pensacola, FL
 August 18-22, 2014 in Raleigh, NC
- Asset Condition Assessment...Mechanical Condition Monitoring Techniques _____ July 21-25, 2014 in Pensacola, FL

