



New Directions for machinery reliability training, products and services!

In recent years, more and more companies have realized the need to emphasize and implement machinery reliability programs. In today's environment with the need to continuously analyze and reduce costs without jeopardizing quality, companies throughout all major industries are seeing the cost benefits of machinery reliability training and programs. An investment in a company's work-force training, knowledge, and skills has long been tied to improvements in employee productivity and a company's financial performance.

Universal Technologies, Inc. specializes in assisting their customers improve efficiency, reliability and productivity through **improved personnel job task performance attained by use of the Systematic Approach to Training**. Universal Technologies trainers, service providers, and training product developers have extensive experience not only in performing the tasks associated with the services they provide, but in effectively sharing their knowledge and experience. We continue to build experience by providing services and consulting throughout a wide variety of industries, including petro-chemical, electrical power, food and beverage, pulp and paper, steel and aluminum, fiberglass, and various other products and equipment manufacturers.

Universal Technologies' primary mission is to promote world-class professionals through knowledge and skills identification, assessment and training.

Systematic Approach to Training (SAT)



 Training is developed and conducted using the Systematic Approach to Training (SAT)

Analysis

Design

Development

Implementation

Evaluation

Analysis Phase – Define individual jobs and tasks; perform comprehensive gap analysis of current task performance processes and conduct individual knowledge and skills assessment.

Design Phase – Design diversified training options for resolving identified gaps. Methods may include live training, CBT training, on-line training, self study, on-the-job training, etc.

Development Phase – Develop or procure selected design option.

Implementation Phase – Deliver the solution.

Evaluation Phase – Determine if gaps have been addressed through performance evaluations, and continued re-assessment.


The cycle continues with more analysis, improved design, development and implementation.

 **The Analysis step begins with Job Definition and Job and Task Analysis.**

Job and Task Analysis (JTA) processes are utilized to identify:

- 1) *Specific Job Classifications... mechanical, electrical, operation, etc.*
- 2) *Specific Skill Areas...rotating equipment repair, pipe fitter, welder, etc.*
- 3) *All tasks that are required for various skill areas.*
- 4) *Knowledge and skills associated with each job task.*
- 5) *Current level of knowledge and skills.*
- 6) *Gaps between knowledge and skills possessed verses those needed.*

After identifying all the tasks and knowledge and skill requirements, **gap analysis** is performed.

 **Gap Analysis** - The goal of “**Gap Analysis**” is to determine specifically which tasks are not being performed to “identified standards” and why. Universal Technologies’ divides the gap analysis process into three basic parts:

Task Performance Assessment – Survey questions are used to identify how tasks are currently being performed in comparison to the way they would be performed with the “best reliability practices” in place.

Knowledge Assessment – Determine individuals’ understanding of basic concepts associated with their particular assigned tasks.

Skills Assessment – Determine level of skills and ability to actually perform elements of the task.

Universal Technologies’ Systematic Approach to Training (SAT) helps companies ensure the right training is delivered to the right people and at the right time to assist companies in achieving their optimum levels of performance.

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Training Products & Services



Why our customers choose Universal Technologies' for their maintenance reliability training and performance support needs:

Customized Products and Services






It is the intent of **Universal Technologies** to provide the highest quality technical training, products and services available *in strict accordance with the needs of its clients*. All live training and computer-based training materials are offered for client review. Throughout its 13 year history and for over 90% of its clients, Universal Technologies' products are customized to address specific company procedures, work practices and equipment. To best meet the individual needs of each client, Universal Technologies obtains client input on specific industrial processes, machinery types, internal task qualification processes and company applications that impact the effectiveness of its products and services.

Sustainable Workforce Improvement Model (S.W.I.M.™) and Skills Accelerator™

In order to assist its clients in efficient implementation of the *Systematic Approach to Training (SAT)*, Universal Technologies offers its clients state-of-the-art, educationally and technologically sound employee development methods and procedures. During implementation of the comprehensive, yet flexible Sustainable Workforce Improvement Model (SWIM) customers are able to choose the scope and specific products from the UTI offering which are needed to take their internal workforce development processes to World Class. With the on-line *Skills Accelerator* application as the engine of SWIM, customers are able to initiate comprehensive Job-and-Task-Analysis (JTA) – based gap analysis processes immediately, literally within a few hours.

Live and Computer-Based Training Products

Universal Technologies has extensive experience in delivering professional training programs, in presentation design and development, and offering them in both live and computer-based formats. It is the intent of Universal Technologies NOT to offer training seminars or computer-based training modules that are readily available in the industry, but to offer higher-end specialized products that fill gaps within the training industry. Individual seminars and computer-based modules are offered in the following training program tracks and work groups:

-  **Management, Engineering and Procurement - MEP**
-  **Operations - OPS**
-  **Mechanical - MECH**
-  **Instrument and Electrical Technicians - IAE**
-  **PdM Technicians – PdM**

Training Programs



Universal Technologies offers a variety of seminars in public and in-house formats for the following work groups. For each of the subjects, Universal Technologies also offers computer-based training modules. All Universal Technologies training products and programs meet or exceed recognized accreditation requirements, such as those of the Institute of Nuclear Power Operations (INPO) used throughout the nuclear power industry.

Management, Engineering and Procurement

MEP-301: Managing Machinery Reliability

MEP-302: Procurement and Engineering Roles in Machinery Reliability

MEP-401: Managing Mechanical Reliability using PdM Technologies

MEP-402: Managing Electrical Reliability with PdM Technologies

Operations/Process Personnel

OPS-101: Basic Operator Care for Machinery Reliability

OPS-201: Advanced Operator Care for Machinery Reliability

Mechanical

MECH-101: Precision Maintenance Skills

MECH-201: Precision Shaft Alignment...using dial indicators

MECH-202: Precision Shaft Alignment...using laser systems

MECH-203: Precision Shaft Alignment...using vertical machines

MECH-301: Advanced Precision Shaft Alignment

MECH-302: Bearing Root Cause Failure Analysis

MECH-303: Gaskets, Packing and Mechanical Seal Failure Analysis

MECH-401: Applied Precision Maintenance Skills

MECH-402: Precision Pump Repair

Instrument and Electrical Technicians

IAE-101: Electrical Fundamentals for Non-Electrical Personnel

IAE-201: Precision Maintenance Skills for Electricians

PdM Technicians

PdM-101: Introduction to Vibration and Detection Analysis

PdM-102: Vibration Analysis Level 1 Plus

PdM-201: The Practical Vibration Analysis

PdM-202: Vibration Analysis Level 2 Plus

PdM-203: Precision Field Balancing

PdM-204: Precision Shop Balancing

PdM-301: The Advanced Vibration Analyst

PdM-302: Time Waveform Analysis