

COURSE OVERVIEW GE0996
Technical Documentation - Intermediate
(E-Learning Module)

Course Title

Technical Documentation
 Intermediate (E-Learning Module)

Course Reference

GE0996

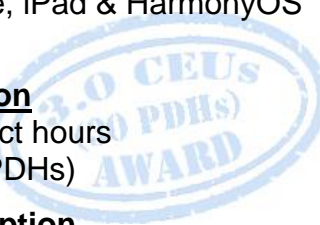
Course Format & Compatibility

SCORM 1.2. Compatible with IE11, MS-Edge, Google Chrome, Windows, Linux, Unix, Android, IOS, iPadOS, macOS, iPhone, iPad & HarmonyOS (Huawei)



Course Duration

30 online contact hours
 (3.0 CEUs/30 PDHs)



Course Description



This E-Learning course is designed to provide participants with a detailed and up-to-date overview of technical documentation. It covers the document management, information flow, information use mapping and the components of document management; the process flow and documents for bringing them into the system; the imaging or scanning; the scanners speed, scanning scale, resolution standard, bit depth, compression and exposure; the information technology and its role in the modern organization; the proper communication, inventory management, management information systems and customer relationship management; and the parts and roles of information system and how to organize the inventory.

Further, the course will also discuss the advantages of a centralized files and decentralized filing; the prerequisites to forms design including the purpose of form and developing design guidelines; the components of an internal records management program; the policies and procedures; the record life cycle; the right records management solution; the vital component of the specification document; and the specification document format, specification phase categorize document and standard operating procedures/forms.

Moreover, the course will also cover the various types of logbooks and its purposes; the material handling documentation, inventory management process and material control; the assembly drawings, information on assembly drawings and the types of assembly drawings; the fundamentals of process plant design; the plant design workflow, process plant activity model, process department and its role; the piping and connection symbols, instrument valve symbols and the general information required for plot plan development; the various types of valves covering gate valve, globe valve, ball valve, plug valve, diaphragm valve, reducing valve, butterfly valve, needle valve, check valve and relief valve; the grid system, piping and instrumentation drawings (P&IDs); the electrical single line drawings, diagrams and schematics; and the valve symbols including the standards and conventions for valve status, piping systems, sensing devices and detectors, signal conditioners and instrument symbology.

During this interactive course, participants will learn the pumps, reservoirs, actuators, piping, valves, electrical diagrams and schematics; the transformers, switches and breakers; the common electrical component symbols; reading electrical diagrams, schematics diagram condition and logic symbology; the Discuss time delays, 7 R's of change management, roles in change management and change management plan; the material handling documentation, production control and distribution strategies; the web security procedures, computerized data entry, data processing, material management and quality control documentation; the basic quality control procedures, extended quality control procedures and maintaining quality control records; the 5M's resources of quality assurance; the standard operating procedure (SOPs), packaging procedures, documentation procedures and validation; criteria for records inventory including the life cycle of records; the file management requirements, file organization, file directory and directory structure; and the file sharing, record blocking, fixed blocking, secondary storage management and file allocation methods.

Course Objectives

At the end of this course, the Trainee will be able to:-

- Apply and gain a good working knowledge on technical documentation
- Explain the purpose of different types of technical documents (operating procedures, operating philosophies, operating manuals, guidelines, calculation for process and utility documents, conceptual design, design specifications and other related documents)
- Identify and demonstrate how to read and interpret information written on each document (equipment design parameters, technical specifications, set points, etc.)
- Describe review and update process for technical documentation
- Describe requirements of the KOC procedures and standards for the technical documentation review process
- Review and validate the accuracy of technical documentation
- Implement technical document change management
- Coach others on how to read, adhere and review technical documents

- Carryout document management, information flow, information use mapping and discuss the components of document management
- Scan and index work flow, illustrate process flow and capture the documents for bringing them into the system
- Perform imaging or scanning and identify the scanners speed, scanning scale, resolution standard, bit depth, compression and exposure
- Discuss annotations, storage options, magnetic media (hard drives), magneto-optical storage, ultrium data cartridge, security of documents and the benefits of document management
- Recognize information technology and its role in the modern organization
- Apply proper communication, inventory management, management information systems and customer relationship management
- Identify the parts and roles of information system and how to organize the inventory
- Discuss the advantages of a centralized files and decentralized filing
- Review the prerequisites to forms design including the purpose of form and develop design guidelines
- List the components of an internal records management program, apply policies and procedures and develop an essential records protection schedule
- Illustrate the record life cycle, choose the right records management solution and identify the vital component of the specification document
- Identify the specification document format and specification phase categorize document, compare format and apply standard operating procedures/forms
- Discuss the various types of logbooks and its purposes as well as carryout material handling documentation, inventory management process and material control
- Illustrate assembly drawings, review the information on assembly drawings and identify the types of assembly drawings
- Discuss the fundamentals of process plant design and describe plant design workflow, process plant activity model, process department and its role
- Describe the piping and connection symbols, instrument valve symbols and the general information required for plot plan development
- Identify the various types of valves covering gate valve, globe valve, ball valve, plug valve, diaphragm valve, reducing valve, butterfly valve, needle valve, check valve and relief valve
- Recognize grid system, piping and instrumentation drawings (P&IDS) and illustrate electrical single line drawings, diagrams and schematics
- Identify the valve symbols including the standards and conventions for valve status, piping systems, sensing devices and detectors, signal conditioners and instrument symbology
- Determine pumps, reservoirs, actuators, piping, valves, electrical diagrams and schematics

- Identify transformers, switches and breakers and the common electrical component symbols
- Read electrical diagrams, schematics diagram condition and logic symbology
- Discuss time delays, the 7 R's of change management, the roles in change management and change management plan
- Manage the change management process and apply material handling documentation, production control and distribution strategies
- Employ web security procedures, computerized data entry, data processing, material management and quality control documentation
- Carryout basic quality control procedures, extended quality control procedures and maintaining quality control records
- Explain the 5M's resources of quality assurance and apply standard operating procedure (SOPs), packaging procedures, documentation procedures and validation
- Discuss the criteria for records inventory including the life cycle of records
- Classify records to records series, fill up records inventory form, determine the retention values and design and prepare the retention schedule
- Identify the file management requirements, file organization, file directory and directory structure
- Apply file sharing, record blocking, fixed blocking, secondary storage management and file allocation methods

Who Should Attend

This course is specifically designed to enhance the competence of both technical and non-technical personnel such as managers, superintendents, engineers, technicians' heads of departments, team leaders and unit supervisors. Further, the course will be essential for senior and middle management staff who need to acquire the prerequisite know-how in the theory and application of technical report writing.

Training Methodology

This Trainee-centered course includes the following training methodologies:-

- Talking presentation Slides (ppt with audio)
- Simulation & Animation
- Exercises
- Videos
- Case Studies
- Gamification (learning through games)
- Quizzes, Pre-test & Post-test


Every section/module of the course ends up with a Quiz which must be passed by the trainee in order to move to the next section/module. A Post-test at the end of the course must be passed in order to get the online accredited certificate.

Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course.

Certificate Accreditations

Certificates are accredited by the following international accreditation organizations: -


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USA International Association for Continuing Education and Training (IACET)

Haward Technology is an Authorized Training Provider by the International Association for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 1-2013 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 1-2013 Standard**.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units** (CEUs) in accordance with the rules & regulations of the International Association for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

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British Accreditation Council (BAC)

Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

Course Fee

As per proposal

Course Contents

- Technical Document - Management, Control Process & Practical Solutions
- Document Management
- What Is “Information Flow”?
- Information Flow
- Information Use Mapping
- Example: Information Use Map: National HIV/AIDS Program
- Activity: Group Participation
- Key Messages
- Technology Pressures
- What Is An Information Audit?
- Two Ways : Formal And Informal
- Formal
- Informal
- The Information Audit
- Document Management
- “Document”
- Synonyms
- Document Management at ICT Environment
- Components of Document Management
- Scanning & Indexing Work Flow
- Process Flow
- Capture of Documents For Bringing Them Into The System
- Imaging or Scanning
- Scanners Speed
- Scanning Scale
- Resolution Standard
- Bit Depth
- Compression
- Exposure
- OCR
- ICR

- Zone OCR
- Annotations
- Storage Options
- Magnetic Media (Hard Drives)
- Magneto-Optical Storage
- Ultrium Data Cartridge
- Security Of Documents
- Access Rights
- Feature Rights
- Benefits Of Document Management
- Challenges
- Information Technology & Its Role In The Modern Organization
- Information Technology
- Communication
- Inventory Management
- Data Management
- Management Information Systems
- Customer Relationship Management
- Systems And Information System (IS)
- Information System – Parts & Roles
- Modern Organization
- How Do We Organize The Inventory?
- Examples Of Asset Categories
- Centralized Files
- Decentralized Files
- Advantages Of A Centralized Files
- Advantages Of Decentralized Filing
- Forms Design
- Prerequisites To Forms Design
- Purpose Of Form
- Developing Design Guidelines
- Guidelines
- Developing Forms

- Printing Forms
- Design Elements
- Adequate Identification
- Preprinting
- Technical Requirements
- System Conversion
- What You Have After All That Work...
- Internal Records Management: The Reasons Why
- Components Of An Internal Records Management Program
- Internal Records Management: The Absolute Essentials
- Course Recap
- Policies And Procedures
- Policies: Recordkeeping Plans: Six Principles
- Principle 1: Proper & Adequate Records
- Principle 2: Policies & Procedures
- Principle 3: Language Control
- Principle 4: Preservation
- Principle 5: Retention And Disposal
- Principle 6: Compliance
- Records Manual Available - Essential Records Manual: Security Backup, Disaster Preparedness, Response And Recovery
- Compile Vital Records Policy & Procedures
- Vital Records Manual
- Develop An Essential Records Protection Schedule
- The Record Life Cycle
- Active Records
- Examples Of Active Records
- Semi-Active Records
- Examples Of Semi-Active Records
- Inactive Records
- Choosing The Right Records Management Solution
- Course Recap
- Specifications
- What Is A Specification Document?



- Acceptance Criteria - Vital Component Of The Specification Document
- Specification Document Format
- Specification Phase
- Document Categorization
- Format Comparison
- Standard Operating Procedures/Forms
- Standard Operating Procedure (Sops)
- SOP Formats
- Which Format Should I Use?
- Writing Sops
- Who Should Write The SOP?
- Language/ Readability
- SOP: Identifiers/Header
- Periodic Review
- Finalize SOP (Guidelines)
- SOP: Signatures/Authorization
- Maintenance Of SOPs
- Changes / Updates
- Logbooks
- Objective Of Log Book
- Types Of Logbooks/ Purposes Of A Logbook
- Material Handling Documentation
- Overview Of The Inventory Management Process
- Material Control
- Type Of Documents And Records
- Material Handling Practices And Procedures
- Control Activities And Tests Of Controls – Inventory Transactions
- Relating The Assessed Level Of Control Risk To Substantive Procedures
- Warehouse Receipt System
- Warehouse Receipt
- Technical Documentations-Introduction
- Documentation
- Working Drawings



- Part Drawing
- Part Drawing Example
- Title Blocks
- Assembly Drawings
- Assembly Drawing Example
- Information On Assembly Drawings
- Types Of Assembly Drawings
- Design Assembly
- General Assembly
- Detail Assembly
- Example Detail Assembly
- Erection Assembly
- Subassembly Drawing
- Pictorial Assembly
- Pictorial Assembly Drawings
- Balloons
- Balloon Guidelines
- Parts List
- Example Parts List
- Parts List Information
- Parts List Location
- Fundamentals Of Process Plant Design
- Goals And Objectives
- Plant Design Workflow
- Process Plant Activity Model
- Process Department And Its Role
- PFD (Process Flow Diagram)
- P&ID (Piping & Instrumentation Diagram)
- P&ID / Project Deliverables Symbolology
- P&ID / ISA Symbols And Loop Diagrams
- Temperature Process / Loop Diagram
- Tag Numbers In A Loop
- Tag Numbers

- Tag Descriptors
- Instrumentation Location
- Piping And Connection Symbols
- Instrument Valve Symbols
- P&ID Example Of A Instrument Loop
- P&ID Exercise
- Pipeline Naming
- Pipe Spec Breaks
- Bulk MTO / Estimates
- Piping / Mechanical Department And Its Role
- Basics Of Plant Layout Design
- Plot Plan Development
- Plot Plan Development – General Information Required
- Piping Study
- Piping - Fundamentals
- Piping Standards
- Piping - Specifications
- Piping – Fittings And Components
- Piping - Flanges
- Piping - Valves
- Types Of Valves
- Classification
- Rising Stem
- Non Rising Stem
- Gate Valve
- Globe Valve
- Ball Valve
- Plug Valve
- Diaphragm Valve
- Reducing Valve
- Butterfly Valve
- Needle Valve
- Check Valve - Swing



- Check Valve - Tilting
- Check Valve - Lift
- Relief Valve
- Piping – Piperack Configuration
- Piping – Pump Arrangement And Piping
- Piping – Heat Exchangers, Compressors, Air Coolers, Etc
- Piping – Pipe Supports
- Pipe Hangers
- Outputs From The Piping Discipline
- Material Control
- Electrical
- Instrumentation
- Operator Generic Fundamentals Plant Drawings
- Plant Drawings Introduction
- Terminal Objectives
- Engineering Drawings
- Enabling Objectives For TLO 1
- Title Block
- First Area Of The Title Block
- Second Area Of The Title Block
- Third Area Of The Title Block
- Other Information Found In Title Block
- Grid System
- Drawing Revision
- Revision Block
- Notes And Legend
- Title Block
- Drawing Scale
- Categories Of Drawings
- Piping And Instrumentation Drawings (P&IDs)
- Electrical Single Line Drawings
- Electrical Schematics
- Electronic Diagrams And Schematics





- Logic Diagrams
- Fabrication, Construction, And Architectural Drawings
- Drawing Formats
- Single Line Drawings
- Pictorial (Double Line) Drawings
- Assembly Drawings
- Cutaway Drawings
- Drawing Formats
- Drawing Projections
- Orthographic Projections
- Orthographic Projection Views
- Isometric Projection
- Drawing Projections
- TLO 1 Summary
- Interpret P&IDs
- Enabling Objectives For TLO 2
- Valve Symbols
- Standards And Conventions For Valve Status
- Piping Systems
- Sensing Devices And Detectors
- Signal Conditioners
- Instrument Symbology
- Instrument Identifiers
- Signal Conditioners
- Simple Instrument Loop
- Signal Conditioners
- System Component Symbols
- Miscellaneous P&ID Symbols
- System Component Symbols
- Fluid Power Drawings
- Fluid Power P&IDs
- Pumps
- Reservoirs



- Actuators
- Linear Actuators
- Rotary Actuators
- Piping
- Valves
- Valve Operation
- Fluid Power Valve Symbols
- Fluid Power Valves
- Fluid Power Diagrams
- Pictorial Diagram
- Cutaway Diagram
- Schematic Diagram
- Fluid Power Diagrams
- Reading Fluid Power Diagrams
- Reading Fluid Power Diagrams Example
- TLO 2 Summary
- Electrical Diagrams And Schematics
- Enabling Objectives For TLO 3
- Electrical Drawings
- Transformers
- Switches
- Single-Phase Fuses, Switches And Breakers
- Three-Phase Fuses, Switches And Breakers
- Common Electrical Component Symbols
- Large Components
- Electrical Drawing Symbols
- Electrical Symbology – Transformer Polarity
- Types Of Electrical Diagrams Or Schematics
- Wiring And Schematic Diagrams
- Pictorial Diagram
- Electrical Single Line Diagrams
- Example Single Line Diagram
- Types Of Electrical Diagrams Or Schematics



- Relay, Switches, And Interlocks Symbols
- Relays And Relay Contacts
- Switches
- Reading Electrical Diagrams And Schematics
- Electrical Device Conditions
- Relays And Relay Contacts
- Electrical Device Conditions
- Reading Electrical Diagram Condition
- Reading Electrical Diagram Condition Example
- Power Source And Load Status
- Power Source And Load Status Guidelines
- Electronic Drawings And Schematics Symbols
- Electronic Block Diagrams
- Electronic Drawings And Schematics Symbols
- Purpose Of Electronic Schematic And Block Diagrams
- Electronic Schematic Diagrams
- Electronic Block Diagrams
- Purpose Of Electronic Schematic And Block Diagrams
- TLO 3 Summary
- Logic Diagrams
- Enabling Objectives For TLO 4
- Logic Diagram Symbols
- Example Of A Pump Start Circuit Schematic Diagram
- Example Of Pump Start Circuit As A Logic Diagram
- Logic Symbology
- Coincidence Gate
- Exclusive Or And Exclusive Nor Gates
- Complex Logic And Memory Devices
- Symbols For Complex Logic Devices
- Flip-Flop
- Binary Counter
- Shift Register And Half Adder
- Logic Diagram Symbols



- Time Delays
- Type-One Time Delay
- Type-Two Time Delay
- Type-Three Time Delay
- Time Delays
- Truth Tables
- Examples Of Truth Tables
- AND Gate
- NOR Gate
- OR Gate
- EXCLUSIVE OR Gate
- NAND Gate
- EXCLUSIVE NOR Gate
- NOT Gate
- Truth Tables
- Reading Logic Diagrams
- TLO 4 Summary
- Plant Drawings Summary
- Change Management
- 7 R's Of Change Management
- Roles In Change Management
- Change Management Plan
- Who Manages The Change Management Process?
- Role Of Change Manager
- Insights On Change Control Management
- Facts On Change Control Management
- Insights On Change Control Management
- Change Control Management
- Course Recap
- Material Handling Documentation
- Production Control
- Production Control – Order Release
- Documenting Product Designs



- Distribution Strategies
- Direct Shipment
- Process Overview: Returns
- Return Process
- Forms Of Data Input
- General Controls
- Application Controls
- Web Security Procedures
- Computerized Data Entry
- Data Processing
- Material Management: File Oriented Approach
- Maintenance Documentation
- Maintenance Department Resources
- Maintenance Procedures Manual Content
- General
- Maintenance Procedures Manual Content
- Quality Control Documentation
- QC & QA
- Resources Of Quality Control
- Basic Quality Control Procedures
- Extended Quality Control Procedures
- Result Of The QC Process
- Feature Of QC System
- QC Flags
- Quality Control
- Quality Control Records Must Be:
- Maintaining Quality Control Records
- Quality Control Record: An Example
- Periodic Review Of Records
- Exercise: Differentiate Between Documents And Records
- Course Recap
- Quality Assurance Documentation
- Quality Assurance





- The 5M's Resources Of Quality Assurance
- Standard Operating Procedure (SOPs)
- SOPs Should Be
- What Should Be Covered Under SOP
- Documentation
- "If You Have Not Documented It You Have Not Done It"
- QA Records
- Production Documentation
- Production Resources
- Packaging Procedures
- Batch Processing Records
- General Rules
- Manufacturing Types
- Manufacturing Procedures & Records Management
- Documentation Process In Production
- WHO Participates In Creating Production Documentation?
- Procedures Development
- Documentation Procedures
- Making Changes To Original Data "Afterwards"
- Contract Manufacture And Analysis
- Action Plan For Documents And Records Of Production
- Validation Documentation
- Validation
- Validation Master Plan
- Documentary Evidence
- Validation Documents
- Course Recap
- Records Inventories, Retention Schedules And Indexes
- Records Inventory And Planning
- Records Inventories, Retention Schedules
- Criteria For Records Inventory
- Records Inventories, Retention Schedules
- Life Cycle Of Records





- Records Retention Schedules
- Retention Schedule The Development Process
- Management Support
- Assign Responsibility
- Include Other Participants
- The Records Inventory
- Classify Records To Records Series
- Records Inventory Form
- Legal Research
- Legal Research – Planning
- Legal Research – Issues
- Legal Research – Sources
- Legal Research – Documentation
- Determine The Retention Values
- Design And Prepare The Retention Schedule
- Distribute For Review And Approval
- Publish, Communicate And Implement
- Take Steps To Ensure Ongoing Success
- Filing Classification System
- File Management Overview
- Files Common Terms
- File Management Requirements
- File Organization
- File Directory
- Typical Directory Entries
- Directory Structure
- Directory Tree Structure
- File Sharing
- Record Blocking
- Fixed Blocking
- Variable Length Spanned Blocking
- Variable Length Unspanned Blocking
- Secondary Storage Management



- File Allocation
- File Allocation Methods
- Ending On A Positive Note
- Participants - Post-Assessment
- Course Evaluation
- Course Recap